Digital ethnography: A disruptive qualitative approach to inquiry

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Abstract

Digital Ethnography evolved in the early 21st century as a qualitative interpretive method of ethnographic research (fieldwork) in an online space (Internet). Also known as Digital Anthropology, Virtual/Cyber Ethnography, Digital Social Research, Online Ethnography, or Ethnography, Digital Ethnography adapts the traditional, in-person ethnographic research techniques of anthropology to the study of online cultures and communities formed through computer-mediated communications. This paper explores the disruptive methodology of Digital Ethnography; how it changed our social-cultural attitudes about qualitative research; and why we need an innovative approach to inquiry in the 21st century social-media-driven information communication technology (ICT) environment.

Keywords: digital ethnography, cyber ethnography, virtual ethnography, ethnography, qualitative online research.

Introduction

Digital Ethnography (DE) evolved in the early 21st century as a qualitative interpretive method of ethnographic research (fieldwork) in an online space (Internet). Also known as Digital Anthropology, Virtual/Cyber Ethnography, Digital Social Research, Online Ethnography, Mobile Ethnography, or ethnography, DE adapts the traditional, in-person ethnographic research techniques of anthropology to the study of online cultures and communities formed through computer-mediated communications. Traditional ethnography has withstood the test of time and provided phenomenal literature and resource materials for the researcher and will continue to do so; *but the Digital (Information) Age requires a disruptive research method to meet the demands of qualitative online inquiry*.

Disruptive innovation (Benninger, 1986; Christensen, 2011; Kuhn, 1962; Negroponte, 1995; Rogers, 1962; Utterbach, 1994; Von Hippel, 2005) typically relates to the ways emerging technologies alter business models, production, distribution mechanisms, and industrial customer bases. When conducting Digital Ethnographic research within this disruptive context, these alterations also reflect changes in the conceptual model of what a field site (or un-sited field) is, the computer-mediated tools used, how data are defined, collected, analyzed, and how the researcher explores and interprets the systems of meanings in the virtual communities that are studied.

Digital Ethnographers study group culture on the World Wide Web, immersing themselves in the online communities of practice they are researching. Communities of all types exist in digitized interconnected spaces where virtual experiences take place. Although all ethnographers share a traditional anthropological past, Digital Ethnographers are engaged in a mobile, multi-sited or "un-sited" form of research that crosses spatial and temporal boundaries online. Fieldwork is performed in virtual worlds, websites, and networked systems, as each portal is operationalized as an invitation to view and analyze a community of practice and system of meanings, consisting of online subject matter and discourse.

Through DE we can study and analyze a plethora of online social-cultural groups, such as organizations, meetings, newscasts, political events, videos, social media interactions, blogs, projects, classrooms, clubs, sports, gaming, marketing, sales, advertising, and customers in synchronous and asynchronous settings. Traditional quantitative online research methods of analyzing surveys, polls, datasets, and key words glean essential information regarding the "who, what, where, and when" questions. However, DE presents a lens to dig deeper for more elusive information regarding the "how and why" online behaviors influence our opinions, habits, patterns, trends, and worldviews as we participate in virtual environments.

This paper explores the disruptive methodology of DE; how it changed our social-cultural attitudes about qualitative research; and why we need an innovative approach to inquiry in the 21st century social-media-driven information communication technology (ICT) environment. The research begins with a Literature Review of the evolution and underpinnings of DE, a Methodology section that addresses the qualitative differences between traditional Ethnography and DE, and a Discussion focusing on the types of DE currently performed, its interpretation, and its benefits and limitations. A Conclusion recaps the research and offers a pragmatic path forward for Digital Ethnographers who operate within culturally-curated online spaces.

Literature Review

Traditional Ethnography

Cultural anthropology evolved into prominence from the late-19th and 20th century practices of Malinowski (1922), Boas (1932), Benedict (1934), G. Mead (1934), M. Mead (1949), Bateson (1972), and Geertz (1973), among others who notably contributed to the profession. In concert with the science, a qualitative methodology emerged as an approach to study human groups as they actually lived, known as ethnography. "Ethnography is the trademark of cultural anthropology . . . a method for grasping the native's point of view" (Malinowski, 1922, p. 25). Reading the early works of Malinowski, Boas, Benedict, G. and M. Mead facilitated an understanding of ethnography's deep roots in cultural anthropology and how protracted field assignments in primitive and exotic locations resulted in cultural knowledge and insights that have withstood the test of time.

Ryle (1949) coined the term, *thick description*, essential to the story-telling writing style. Geertz (1973, p. 19) argued the importance of fieldwork that evolves inductively as events transpire: "Ethnography is the inscribing of discourse and practice in terms of the communities which constitute a multivocal and multilayered environment." Spradley (1980, p. 3) proffered that "Ethnographic fieldwork is the hallmark of cultural anthropology. Rather than *studying people*, ethnography means *learning from people.*"

McCurdy and Spradley (1979) offered an eloquent description of the ethnographic praxis of participant-observation with this passage.

> Ethnography is the task of discovering and describing a society's culture. Ethnographic field work does not fit the usual stereotype of scientific inquiry. There are no laboratories in ethnographic research, except for the "natural laboratories" in which people live. They go to the field, establish residence, and settle down among the people they wish to understand. They don't experiment, they listen. They don't manipulate controlled variables, they observe people acting in the complex context of daily life. They aren't detached, they take an active role in a community. Field work is a uniquely human adventure involving ethnographers with those they wish to learn about. (pp. 3-4)

The mid and late 20th century took another turn when traditional Ethnography further evolved into Business Anthropology or Corporate Ethnography to meet the needs of for-profit and non-profit organizations whose

sponsors demanded insights into how and why their organizations, employees, customers, and other stakeholders behaved as they did. Its purpose was to collect data and provide findings to a results-oriented business or workplace community whose decision-support and strategic cultural database relied upon relevant information to help executives and management solve problems and make business decisions.

The first highly touted American ethnographic organizational observational behavior research, the Western Electric Hawthorne Study in Chicago, IL, took place over a period of eight years from 1924-1932 (Schwartzman, 1993). From a high-tech organizational perspective, Kunda (2006) used the traditional ethnographic approach when he studied the Digital Equipment Company (DEC) in 1986 for twelve months, published his thesis, and then refined his data collection for several years to develop a book. By the time Kunda published in 1992, DEC had suffered a steep decline and was acquired. Van Maanen (2011) wrote about his harrowing adventures as a ride-along researcher with a local police force; a true adventurous and reflexive account of participant-observations. Jordan (2003, p. 115) identified this research approach as the "growth field of business anthropology," remaining true to the praxis of traditional ethnography rooted in the cultural anthropology of fieldwork.

Agile Ethnography (Borkovich & Skovira, 2018) also appeared as an interactive form of participant-observation implemented and bounded within the workplace. Building upon the agile iterative software development process (Larman, 2004), the essence of Agile Ethnography is the triumvirate of research agility representing an agile process, environment, and researcher. A traditional ethnographer requires extensive time to learn the social-cultural environment and plays the role of "outsider" until trust and acceptance is earned. But in the fast-paced digital 21st century, an agile ethnographer is often an "insider" with easy access to subjects and computer-mediated-technology, familiarity of the situation, and typically a de facto "embedded researcher" (Borkovich, 2012). Encapsulated by the constraints of time, access, facility, or location boundaries; interchangeable, overlapping, cross-cutting cultural groups; and a limited performance period, this research process captures the multi-layered and matrixed social-cultural environments of an evolving fluid business situation. Hence the moniker, *Agile Ethnography,* nimbly fits.

From Traditional to Digital – The Bridge

But the mid-20th century also ushered in great deal of scientific, technological, and engineering research and prowess commencing with the early days of email when ARPANET transmitted the first message in 1969, launching the fledgling Internet used primarily by academics, researchers, programmers, and computer scientists associated with the US Federal Government, universities, and think-tanks (Gertner, 2012). Twenty years later when Sir Tim Berners-Lee developed protocols to link hypertext documents led to the World Wide Web signifying Web 1.0, permitting the public to take part as viewers of Bulletin Boards and lists. A few years later the first web browser, Mosaic (aka Netscape) was released in 1994 inviting the common man to search for, *but not limited to,* Government and corporate information, including advertisements of products and services, store locations, and university home pages with courses and registration information. Generally, these home pages provided lists, advertisements with toll-free phone numbers, and physical addresses so users and customers could request additional information, register for a class, or buy a product or service by phone or on-ground. By 2004, Web 2.0 truly arrived when Facebook was created and social media invited the public to join online communities to engage, contribute, and participate in the process (Steinhauer, 2021). Users procured personal equipment, engaged Internet Service Providers (ISPs), and quickly learned how to participate in the digital environment. And as researchers watched this frenzied activity, they soon realized that new methods and tools were required to study this emerging phenomenon of human behavior.

Digital Ethnography

Traditional ethnography of the 19th and 20th centuries, rooted in the historical underpinnings of cultural anthropology, evolved into a 21st century approach to qualitative inquiry in the form of Digital Ethnography (DE). DE offers a research lens into online communities of practice by capturing and interpreting the digital communications of users in cultures that extend the body's traditional limitations (Markham, 1998). It is a written account of cybercultures "by studying the technocultures that emerge from online, computer-mediated, or Internet-based communications, where the fieldwork and the textual account are informed by the methodological traditions and techniques of cultural anthropology" (Kozinets, 1998, p. 366).

DE evolved in the early 21st century as a qualitative method of ethnographic research (fieldwork) in an online space (Internet). The moniker, DE or Online Ethnography (Ginsburg, et al., 2002; Castells, 2009; Murthy, 2008), may also be described as Digital Anthropology (Pink, 2017), Media Anthropology (Askew, 2002; Ginsberg, et al., 2002), Digital Social Research (Hand, 2015), Cyber Ethnography (Ward, 1999), Virtual Ethnography (Hine, 2000), Network Ethnography (Howard, 2002), Webnography (Puri, 2007), Mobile Ethnography (Couldry, 2020), Social Media Ethnography (Postill & Pink, 2012) or Netnography (Kozinets, 1998) when performed about users participation interests in the web or its ICTs.

Digital ethnographers, like traditional ethnographers, study group culture by engaging in observational and/or participant-observational fieldwork, immersing themselves in the culture they are studying. They study online communities of practice and their respective cultures by conducting their research on the World Wide Web. Communities of all types exist in digitized interconnected spaces where virtual experiences take place (Kaur-Gill & Dutta, 2017). Aroles (2015) argues that the notion of nativeness and belonging in online environments is a process of *becoming* an insider through interaction and communication.

DE is a specific type of qualitative research that adapts the methods of traditional Ethnography and other qualitative practices and cultural experiences that encompass and are reflected within the posts, footprints, conversations, networks, and systems of online life through a social-cultural lens, *including but not limited to,* social media. Web-based communication platforms or applications that take advantage of Web 2.0 technologies, make it possible for users with little technical expertise to easily produce and publish content on the Internet; noting that users may rely more on technology than on each other (Turkle, 2011).

Kozinets (1998) was one of the first to consider DE on the Internet, when he coined the moniker, Netnography, in his dissertation. His theories promulgated a robust area of research pursued by anthropologists interested in how qualitative research methods could be applied to online spaces. In the physical world communities must live together; but in the virtual world proximity is not required. Kozinets (2006) provided a concise and insightful definition of the moniker, Netnography, with this description:

> Netnography is conducted on the Internet; a qualitative, interpretive research methodology that adapts the traditional, in-person ethnographic research techniques of anthropology to the study of online cultures and communities formed through computer-mediated communications. (p. 135)

Kozinet's theories also significantly impacted communication theory, especially intercultural communication, where it inspired research specifically on social media. Social media relates to communities through its emotional reality expressed through online communications (Pink, 2015). Social media encompasses a wide variety of distinct types, such as social networks, review sites, instant messaging applications, and video and photo sharing sites (Gretzel, 2017). Although Kozinets (1998) is most directly associated with Netnography, other academics are equally passionate about their research.

Online qualitative research must construct a coherent theoretical, methodological, and analytical approach to technology and culture by creating a common, scientific language that can encompass both culture and technology capable of capturing how these constructs relate to each other. Arkalgud and Partridge (2017, p. 2) expressively offered their perceptions of online research as "participants leaving a trail of social media breadcrumbs that can guide us into having a deeper, more emotional, and more empathetic view of the good, the bad, and the ugly that makes up what we are as human beings."

Hand's (2015, p. 3) conceptualization of Digital Social Research argued that concerns with big data needed to be understood by users and researchers, since the "*metaphoric idea* of Big Data is both rhetorically persuasive and materially pervasive in shaping institutional, commercial, social, and personal life." The term *big data* is no longer an abstraction for researchers and has become the dominant force for the vast data production, collection, and analyzation of study, specifically social media, imagery, photographs, and videos. However, the majority of big data research is focused on quantitative metadata collections from the Internet, "but only a fraction looks at data through the lens of ethnography" (Arkalgud & Partridge, 2017, p. 133). Therefore, the qualitative researcher must consider relationships with new forms of data to assist with the contextualization and interpretation of digitally mediated society and culture**.**

Markham (2004b) advised that qualitative inquiry in an online environment required careful attention to the means by which social life is interpreted to give value to the online experience absent the visual information that traditional ethnography provided. Researchers, consciously or unconsciously, use socioeconomic markers such as gender, age, race, ethnicity, class, body type and body language to make sense of participants in physical settings. Online, these frames are still used but without visual information, they function invisibly, and the researcher must rely upon metadata, public user lists, or those provided with the permission of a private site administrator and consent of the participants (Markham, 2005, p. 800).

Pink (2015) took another Digital Ethnographic approach by researching online subjects through video and audio recordings performed online. She considered this practice a meaningful "first person approach" to understanding people and their cultures from a more traditional qualitative method of interviews performed on the Internet. Wesch (2009) studied YouTube webcam experiences of context collapse. This type of DE was described as a passive capture of images (Lee, et al., 2008), since inflection of voice and body language could be analyzed, as well as text and content.

DE also includes exploring the artifacts of the *technoculture*, such as the *semiotics* of signs, symbols, signals, photos, images, videos, emojis, the language and vocabulary of humor, depression, sadness, elation, slang, and so many other cues that represent being *insider members* of a social-cultural online community. "Semiotics is the science, the set of theories, methods, and concepts, that makes it possible for culture to be studied directly, on its own terms . . . [because it is] the logic of culture" (Eco, 1976, pp. 28 & 17). "The technology of meaning is intended to emphasize that we are at the same time dealing with the very mechanisms of the construction of meaning, the apparatus of meaning, the mechanisms and processes through which meaning is created in society, *the semiotic technology"* (Jensen, 1993, p. 293).

Kozinets (2020, p. 621) refers to these cultural artifacts as: "various identities, practices, values, rituals, hierarchies, and other sources and structures of meanings characterizing technocultures that are influenced, created by, or expressed through technology consumption. A whole new system of cultural artifacts and norms including selfies, emojis, avatars, GIFs, augmented reality, message streaks, Facebook FOMO, Instafame, unfriending, and retweets are produced and consumed daily in and through technology." Kozinets and Gambetti (2021, p. 309) describe technocultural capital as "a set of embodied knowledges, skills, competencies and dispositions that individuals mobilize in social media platforms and objectify in the form of textual, visual and symbolic culture artifacts."

Jensen (1993) argues that technologies are not only tools but also artifacts of culture with:

> "Technologies are not simply marketed as machines defined solely in terms of their technical functionality and performance, but also as a particular idea, lifestyle, image, social status, attitude to the world, relationship to a subculture, or promise of a stake in the future. This is done by means of rhetoric, the adorned statement or convincing argument which attempts to construct an appealing, coherent, compelling system of meaning around technology: *a text.*" (p. 308)

Information Communication Technologies (ICTs)

The idea of studying the Internet and using information communication technologies (ICTs) to facilitate qualitative research was intoxicating and beguiling (Markham, 2004a). But at the onset of the 21st century, some researchers considered the virtual field, interacting with anonymous participants, tracking disjointed, non-linear, multiple participant conversations, and analyzing hundreds (or thousands) of screens worth of cultural texts, photos, videos, and images, believed that researching online may be more daunting and formidable than any value that could be achieved (Markham, 1998). Other social scientists argued that entering cyberspace to conduct research is not the equivalent of going into the field, because cyberspace is not real and therefore not worthy of study (Hamman, 1999). Other detractors asserted that online ethnography was merely a form of key word content analysis (Langer & Beckman, 2005). However, these theories were debunked in the 21st century by digital researchers asserting that it was necessary to acquire a meaningful and informed understanding of virtual communities and social-cultural life online, if researchers adhered to ethical and moral principles regardless of where and how the qualitative study takes place (Pink, et al., 2016). Nevertheless, DE continued to evolve to meet the qualitative research needs of the 21st century Information (Digital) Age.

DE requires the conceptualization and incorporation of ICTs as essential researcher tools. The term ICT has no properly published historical roots, other than the acronym reported in use early in the 1980s by information technology professionals (Melody, 1986; Silverstone, 1991). ICTs are generally accepted to mean devices, networking components, applications, and systems that when combined allow people and organizations to interact in a digital world (Sakenov, 2012). The development of ICTs enabled knowledge exchange, remote working and learning, largely abolishing the constraints of geographical proximity and distance (Dean, et al., 2014; Lister, et al., 2009; Torre & Rallet, 2005). ICTs establish and operationalize the infospaces required by users, prompting Chen (2011) to coin the mobile device expression, *always on.*

Dutton (1999) considered ICTs multi-dimensional and asserted that ICTs shape access: electronically; economically; and socially. Dutton argued that ICTs reconfigured electronic and physical access to four inter-related resources: information, people, services, and technology; shaping access to people through communication, information, and influence. The success of the 21st century premise for science and business would not be possible without the ICT of software applications, learning management platforms, video conferencing, digital equipment, mobile tech devices, networking, and other digital tools.

Computer-Mediated-Technology

Virtually all symbolic content in our contemporary world is now digital since most platforms carry both mass-produced content and interpersonal communication, means that the old research divide between mass media and general communication have become hopelessly blurred (Couldry, 2012, xiii). Figure 1 depicts the popular social media platforms of Facebook, Twitter, Snapchat, LinkedIn, YouTube, Pinterest, Tik Tok, and Reddit; and Figure 2 illustrates selected ICTs video conferencing tools of Zoom, Google Meet, and MS

Teams and learning management software platforms of D2L/Brightspace, Canvas, and Blackboard, all continuing to blur our professional and personal communications.

Figure 1. Selected Social Media Platforms & Communication Tools
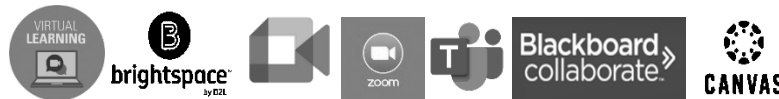

Figure 2. Selected Video Conferencing Applications and Learning Management Platforms

DE, in concert with computer-mediated technology, provides a lens to understand the meaning and intent of every post, discussion thread, project, assignment, photo, video, and conversation shared online, as there is a person, group, team, department, organization, community, or class with an opinion that reveals how they see the world. As researchers, we operationalize each cyber project as a virtual portal, inviting users and academics into a community of practice, consisting of subject matter and discourse.

Methodology

This section is not intended as a "how to perform Digital Ethnography (DE)," since DE primarily follows the praxis of traditional Ethnography, *albeit within an online space and operationalized via ICTs*. Akin to traditional Ethnography, a Digital Ethnographer employs observations, participant-observations, fieldwork, conversations with Informants, examination of artifacts, including semiotics; commits to research ethics, informed consent, and secures IRB approval, when required. Therefore, this section presents a literature review of how subject matter experts (SMEs) articulate their specific DE approaches to inquiry using computer-mediated technologies.

DE is a "metamorph" (Kozinets, 2020, p. 15), adapting to its computer and data science surroundings. Similar to traditional Ethnography, DE adheres to the methodological research principles of:

- Views of the world (ontologies)
- How to study and understand the world (epistemologies)
- Priorities for studying what is important and valued within it (axiologies)

Kozinets (2020, p. 7) further describes an organized set of research tools for online ethnography as:

- Data collection operations of investigation: simplification, search, scouting, selecting, saving.
- Interaction: interview, involvement, innovation, informed consent.
- Immersion: reconnoitering, recording, researching, reflecting.
- Data methods of analysis: collating, coding, combining, counting, charting.
- Data interpretation: theming, talenting, totalizing, translation, turtling, troublemaking.

Ethics and Informed Consent

Generally, Digital Ethnographers emphasize the importance of revealing one's identity as a researcher to obtain informed consent by contacting potential participants directly. Some argue that the Internet is a public space, and online community members know their message posts are public and can be read by anyone, so consent is impractical and unnecessary (Hudson & Bruckman, 2004). However, even though

members may know the public can freely read their online forum posts, they likely do not intend their posts to be used for research purposes (Finn, 1999). Participants need to be made aware of the study to counteract potential risks. But it has been reported that after divulging identities as researchers following Chatroom registration, researchers were often removed as participants (Hudson & Bruckman, 2004).

Collecting informed consent from those interacting online is problematic for many researchers; however, every effort should be made to obtain consent from individual participants, when a forum is not public and requires registration. Consent is especially important in cases of using direct quotes, as any information shared outside the group could jeopardize members' emotional or physical safety. For example, the *leakage* of information from these groups can negatively impact participants belonging to a military community where confidentiality may be required (Johnson, et al., 2019). Physical safety could also be affected due to operational or personal security concerns for the participants, as well as the researcher. Even when not required, it is encouraged that those doing research with online communities consider contacting site administrators and posters whenever possible. Even when information is accessible online, the named or anonymous creators of the online context may have expectations of privacy and confidentiality (Markham, 2003; Schumann, et al., 2018), *albeit limited*.

When conducting studies online, researchers are immediately required to establish whether they consider interactions to be data or human subject research. Regarding social media, such a determination can be a complicated and contested issue. When organizations require IRB approval (i.e., academic institutions, Governments, foundations, grant sponsors, etc.), these protocols must be followed prior to commencing research and are typically included in the published work product. In studies where data came from publicly available sources and involved solely archival and cross-sectional data retrieval, or anonymous sources published experiences on social media for review and comment, researchers typically did not seek approval or consent from sources, since they could not be properly identified (Pink, et al., 2016).

Fieldwork

While traditional ethnography and DE share an anthropological past, digital ethnographers are challenged by the lack of a single embedded grounded research in one geographic site, and are engaged in a more mobile, multi-sited or "un-sited" form of research that crosses spatial and temporal boundaries online. As fieldwork increasingly becomes networks, virtual worlds, and websites, notions of what constitutes a community, how to engage in observations, and how to choose a fieldsite becomes increasingly complex as researchers perform ethnography in virtual spaces (Oxford Bibliography, 2018).

Kozinets (2020) refers to fieldsites as *datasites* and chronicles information in *immersion journals*. Identifying specific fields to explore are generally based upon a pool of sites, pages, or communities that discuss the topic of interest for the project; and are selected based upon the following criteria: size; quality; search results; and activity (Bartl, et al., 2016). Kozinets (2020, p. 9) describes the Digital Ethnographer as a "keyboard jockey hacking through jungle fieldwork levels of ethnographic activity: searching Google, scouting Facebook, following Instagram influencers, tracking hashtags, watching YouTubes, interviewing Informants, observing rituals, eliciting kin terms, tracing property lines, and writing an immersion journal."

Participants

Unique to DE, a researcher may study and compare groups (sample sizes) from different platforms. Anonymous online populations also provide challenges to conventional methods in that it is difficult to define a population either demographically or metrically. The gender of anonymous online participants or a forum population may be inferred through writing style analysis referred to technically as stylometry

(Peersman, et al.,2011); while geography may be inferred through time zone alignments with date/time stamps of member posts (La Morgia, et. al., 2018). Individuals may also discard grammatical correctness as a form of deflection or redirection to reduce any potential for forensic linguistics to uncover the links between their online and offline identities (Ferguson, 2017, p. 694).

Establishing metrics of how many people participate in the population under study is usually done by accessing membership lists, if publicly available, or if accessible through the site administrator as metadata. Furthermore, it is a common practice for a person to have more than one online identity within a site or across multiple sites. However, just because a virtual environment is shaded by deceptions around identity presentation and visibility, this does not mean that the social factors shaping the environment should be abandoned by researchers (Maddox, 2021, p. 37).

Data Collection

DE studies online "traces." When people post videos, images, or text online, or when they comment, share, or do anything else that is accessible online to anonymous or networked others, they leave behind online "traces" (Kozinets, 2020, p. 7). Online traces can be textual, graphic, photographic, audiovisual, musical, commercially sponsored, grassroots, political, fannish, and other things. They are a free form of public social information accessed through public forums or by registering in user groups.

G. Mead's (1934) interactionist approach argued that the unit of analysis is not the person, but the behavior, the speech, or the act, called the "utterance." Akin to DE, researchers typically study the "utterances" not the "utterers" as cyber users or virtual community members generally cannot be identified or want to be identified. Studying the "utterers" requires registering to participate in Chat Rooms or other online private communications, divulging the purpose and intent of the researcher's presence, and obtaining consent from the site administrator and the participants.

Rich or deep data reveals human cultural realities, contains context, and paints a picture. Short textual statements, such as a Facebook post or a brief Tweet are not rich as they contain no specific links to social-cultural, physical environments, or identities (Kozinets, 2020). However, photographs, videos, live-streaming events, podcasts, and deep textual opinions and commentaries, among other sources, can provide real connections to rich data (Wang, 2019; Kozinets, 2020). DE also includes exploring the artifacts of technoculture and the semiotics of signs, symbols, cues, vocabulary, language, slang, emojis and other signals of being insider members of a social-cultural online community.

Data Analysis

DE analysis involves breaking down collected data to component parts to make sense of it. Data analysis evaluates and analyzes the findings by matching and comparing like or similar data; comparing findings to historical literature; and cross-referencing data with digital fieldnotes (transcripts), seeking patterns and trends. Whenever possible, content analysis, coding, and member checks are performed, as well. When more than one researcher is involved, triangulation is facilitated by sharing their findings, experiences, and fieldnotes with each other to interpret the results, seek similarities and trends, anomalies, biases, and explanations by studying the phenomena from several different viewpoints.

DE also identifies Black Swans, a process that describes the falsifiability of research induction by identifying an instance of uncertainty when discovering a gap in what we thought we knew to be completely different from what we previously understood, or thought we knew (Hajikazemi, et al., 2016; Kozinets, 2020, Taleb, 2007). These exceptions to the rule (even in a single case) are critical contributions to our

analysis of ideographic online ethnographies (Edgar & Billingsley, 1974). A Black Swan also reminds us of the humanity and empathy a researcher needs to understand an individual, as well as a group; always keeping in mind that the DE goal remains to better understand the complexities of human group behavior in multiple online settings.

Discussion

Interest in understanding the cultural meaning of online communities (e.g., Reddit; LinkedIn) has grown exponentially since the rise of Web 2.0 interfaces (i.e., user-generated content), along with other technological advances. We can no longer assume that people are isolating themselves from the physical world with technology, but rather view technology such as computer-mediated and digital information as a gateway that allows them to interact with familiar and anonymous users on any given occasion. Furthermore, cultural practices within the physical world are extended to, and enhanced by, these online communities, where people can: choose a dating partner; learn about a religion; study online; compare and buy products; discuss politics, education, community, health; and share information about personal or general issues. DE enables the researcher to link communication patterns to understand the tacit and latent practices involved within and between these online communities of interest (Murthy, 2008). These social groups have a real existence for their participants, and thus have consequential effects on many aspects of behavior, including consumer behavior (Kozinets, 2020).

Participants in these online communities share in-depth insights on themselves, their lifestyles, and the reasons behind the choices they make. Such insights have the potential of becoming something actionable. Specifically, this means that the researcher will be able to present an unknown and unseen truth to his/her client so that they are able to make better decisions in engaging with a target community, whether it be in a form of an advertising, a non-profit, or for-profit campaign (Gambetti & Graffigna, 2010). To date, DE has been predominantly applied within the fields of online marketing, consumer research, and social media; however, its methods can help researchers and their clients within social sciences to create an empathetic understanding of people's cultural behavior online, allowing researchers and clients to immerse themselves in virtual environments (Bartl, et al., 2016, p. 167).

Interpretation

Traditional Ethnography has historically referred to the *Interpretation* of a qualitative inductive study in lieu of a *Discussion* (Geertz, 1973). According to Kozinets (2020, pp. 316-317), Netnographic interpretation combines three types of disciplined scientific reasoning styles - deduction, induction, and abduction. Deductive research begins with theoretical concepts turned into hypotheses, looks for ways to test these conjectures using data and observation in the phenomenal world, and confirms or rejects them in a top-down process. Inductive research begins with empirical data from the world of phenomena, seeks patterns within it, and then uses those regularities to generate theory from the bottom-up. Abductive research starts with an existing framework of what is usual or understood to find data that is puzzling or anomalous and is used to modify or develop a new theory. Abduction is the act of thinking that finds the connection between two seemingly disparate points – a simultaneous act of perception and interpretation.

Regardless, DE analysis is a "quest for lawful relationships in qualitative data that involves breaking down a phenomenon into its component parts to study and understand it. Interpretation is quite different from simple analysis, as it is a holistic link to search for essences, themes, unifying ideas, or discourses" (Miles, et al., p. 10). Interpretation is intended to elaborate or explain meaning through association of one element to another (i.e., comparing text, images, etc.). Interpretation is critical thinking, making use of evidence from analysis, by re-compiling the component parts to tell an entire story.

Examples of Digital Ethnography

To date, Digital Ethnographers have explored many online communities, including those of marketing, public relations, consumers, sales, advertising, education, politics, health care, veterans, employment, social justice, law, and social media participation. Furthermore, Autonetnography in education (Howard, 2019) explores the immersion of participants from the researcher's impressions and personal point of view; and Mobile Ethnography (Couldry, 2020; Muskat, Muskat, & Zehrer, 2018) investigates research topics via the use of mobile digital devices, capturing live-feed observational tasks via videos, photos, chats, and interviews. An increased interest in digital entertainment has also led to Digital Ethnography research of tourism (Tavakoli & Wijesinghe, 2019), celebrity YouTube strategies (Raun, 2018), live video streaming (Wang, 2019), and cryptomarket gambling on the dark web (Maddox, 2021), among others.

Benefits and Limitations

Compared to surveys, experiments, focus groups, and personal interviews, DE is primarily observational and can be less obtrusive. The observations, settings, and questions do not use a context or environment fabricated by the researcher. DE also is less costly and timelier than traditional Ethnography, Case Study, and Phenomenology as it does not require meeting appointments, facilities, travel, and related expenses.

The limitations of DE include the need for greater researcher interpretive skill, specifically if Informants are not present in the online context leading to difficulty transferring results to groups outside the sample. However, these limitations can be ameliorated by careful use of convergent data collection methods that bridge offline and online research in a systematic manner, as well as by careful sampling and interpretive approaches (Kozinets, 1998). Researchers that want to generalize the findings of a DE of a particular online group by comparing results to another online group may have difficulty unless the application of the evaluation processes (i.e., content analysis, member checks, fieldnotes) are similar and multiple methods for research triangulation are implemented (Kozinets, 2020).

DE also stimulates further inquiry by attempting to re-capture, re-experience, and curate the humanity of people from the expressions of their digital communicative traces and footprints. A powerful narrative should not only reflect the researcher's axiology of values and ethics, but also impact readers beyond academia into other social-cultural spheres of Internet relationships and influences where together we all reside. This author learned that a disruptive qualitative methodology requires the researcher to be informed, agile, and flexible; as it presents an innovative opportunity for interpreting, understanding, knowledge-acquisition, and gaining new skills.

DE continues as a dynamic qualitative research approach that co-evolves with technology and culture. It explores human interactions expressed on the Internet or elsewhere digitally by seeking understanding of group and individual behaviors in online spaces. Digital Ethnographers seek to achieve a social-cultural understanding of both textual and audio-visual sites on the web; but we cannot lose empathy for the users and participants who create this cyberspace of technoculture, or our own research ethics in the process.

Conclusion

This paper considered the disciplines of Anthropology, Communication, and Technology to explore the impact and influence of Digital Ethnography (DE) in the 21st century. The intent of this paper was not to suggest that traditional Ethnography be replaced with DE, but merely to augment the cadre of qualitative inductive and interpretive research methods for the Information (Digital) Age. Research methods and ICTs must and will continue to evolve with the aim to support and improve our lives on the Internet as we

continue to learn and understand how and why we behave online. Regardless of the means and processes of DE, it remains a methodology of cultural storytelling about online communities of practice.

A well-researched and well-framed DE will educate us about what is happening in the world of social media and other Internet-driven relationships. DE provides strong explanations about *why* things happen, not just descriptions of *what* happens online. DE also helps to identify specific leaders and voices, as well as *black swans*, those exceptions to our rules and behaviors. These causal explanations from interpretive and inductive studies offer greater understanding and meaning from merely examining a specific out-of-context post, advertisement, conversation, photo, image, video, or event. Disruptive methodologies, like innovative technologies, are meant to challenge, criticize, evaluate, course-correct, re-order and re-focus. DE compels us to look forward at the future of online communicative behavior in a new way.

Traditional online research methods of metadata, big data analyses, surveys, polls, focus groups, and interviews glean essential information regarding the "who, what, where, and when" questions. Through DE we can further study the behaviors, patterns, and trends of our anonymous virtual cultural groups as observers without asking questions or interrupting their participation, synchronously or asynchronously. And through more in-depth participant-observations, digital fieldnotes, Informants, artifacts and semiotics, Digital Ethnographers can dig deeper for the more elusive information regarding the "how and why" we behave as we do online as individuals and in groups.

DE is still a relatively new method and awaits further development and refinement at the hands of a new generation of Internet-savvy ethnographic researchers. This qualitative method has disrupted and influenced our traditional approach to inquiry; just as the Internet and World Wide Web disrupted our everyday lives. Future Digital Ethnographers are encouraged to pursue study of online communities of practice with various populations, in different platforms and disciplines to ascertain if this research and perceptions are similar or transferable to other studies, and to share their results.

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