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## Cultural polysemy: Exploring cultural codes through digital and non-digital practices

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### Introduction

Culture is a coherent entity we use for describing our cooperative interests with others in political, social, and historical contexts. Culture is functional in that it is defined through individual and collective articulations in time and space. Its representations occur through macro categories of nations, race, habits, practices, and values as embodied in the following models: contexting (Hall, 1976); value orientation (Kluckhohn and Strodtbeck, 1961); cultural dimension (Hofstede, 1996); Seven-Dimensions of culture (Trompenaars & Hampden-Turner, 1997); Seven Value Types (Schwartz, 1999). Culture also gets defined in terms of its situatedness based on specificity of contexts and practices: social constructionist approach (Dohney-Farina, 1986; Porter, 1993; Mirel, 1996); discourse approach (Scollon et al., 1995). In professional and technical communication, the practice of splitting culture into macro and micro categories is influenced by the American linguistic anthropologist Kenneth L. Pike (1954) who theorized cultural distinctions through a linguistic route of tagmemics that looks at the connection between language use and sociocultural behavior (Franklin, 1996) through emic and etic approaches. Emic accounts focus on individual and relative aspects of a culture, while etic elements provide descriptive universals to enable macro comparison between cultures.

It follows that cultural conceptions centering on etics/emics came into the focus of rhetoric and composition through the influential work *Rhetoric: Discovery and change* published in 1970 by Richard Young, Alton Becker, and Kenneth Pike. The publication exerted a significant impact on the scholarship of rhetoric as it “represented at once a complete break in the more recent history of rhetoric textbooks and at the same time a recovery of a 2,500-year tradition of creating new rhetorical systems via theoretical treatments of rhetoric” (Goggin, 1998). The etic/emic framework gained currency and prominence over other conceptualizations of culture in the discipline of rhetoric largely due to this publication.

In technical communication, the etic/emic schema has been singularly used, focusing on either etics or emics, though it originally was meant to be used as a unified structure. As Franklin (2009) noted, “Etic and emic are two ways to view the same thing, resulting in two ways to

describe it” (p. 1). In other words, the etics and emics examine culture from an observer and participant’s standpoint, respectively, or from the outsider and insider positions. Central to the concern of combining the two ends of the schema, I propose the blended interpretive approach (BIA) that seeks to describe both participant and observer’s cultural expressions. BIA conceptualizes culture as an aggregate of perceptions and practices embodied within the materiality of everyday interaction with people, nature, ideas, objects, and structures including historical, social, political, and technological. Importantly, BIA also aims to factor the technology question into the interpretive framework of cultural conceptions.

The purpose of this essay is to introduce BIA as an interpretive tool for cultural studies by taking into account universal qualities residing as technological etics. Toward this end, I present a study conducted in urban India that examined the use of digital technologies by the aging population and discuss BIA within this investigative framework.

No claim is forwarded here to suggest that the workings of cultures cannot be explained independent of digital technologies. While maintaining the distinctions between the two constructs, the essay seeks to explore a parallel between cultural and technological appropriations in the face of a rising popularity of digital technologies, especially viewing them mainly as urban phenomena. The essay is divided into eight distinct parts. In the first part, I define and elaborate on culture as one of the two key themes followed by defining and exploring the role of digital technologies in shaping cultural formations. The next section explores the meeting grounds for culture and digital technologies, underlying three common areas of convergence. In the following part, I explore and critique universal features pertaining to the key areas. I then propose an alternative model, the Blended Interactive Approach (BIA), with the aim of addressing the problems with universal models. BIA is applied to an empirical study that was conducted in India, in the next section, followed by a discussion of the method and findings of that study. In the final section, I comment on the limitation of the study and offer a perspective on culture as problematized by digital technologies.

## **Resolving structural dualisms through BIA vis-à-vis digital technology**

### **Culture**

A lot of contemporary discourse on culture actively engages with the notion of digital technologies including computers, the Internet, and the Web, reinforcing the view that “The Web seems to be everywhere, and included in everything” (Barber, 2005, pp. 116). The traditional view, influenced by anthropological readings of culture, focuses on the idea of a shared system of meaning with emphasis on common values fixed in time and space; alternatively, from a cultural studies perspective, culture is a constant site of struggle for meaning which is dynamically constructed through intersubjective interactions and complicated further by resources of technology. According to a recent report by the United Nations International Telecommunications Union ([ITU](#)) (2014), there are “nearly three billion Internet users,” or just over a forty percent of the total world population reaching a position to push their cultural boundaries through digital technologies—a profusion that is likely to impact the constructed space of the Internet (Internet). What is even more interesting is “two-thirds of [Internet users]

are from the developing world,” which is experiencing a high rate of broadband penetration (Internet).

In his pioneering work, *Modernity at Large*, Appadurai (1996) argues that we replace *culture* as a noun which carries the association of race and linguistic forms, a passive acquisition of traits (typical of Hofstede and Hall’s models) with *cultural* that captures the element of mobilized group identities across extraterritorial spaces. This view relocates the definition of culture as “neither an autonomous nor an externally determined field, but a site of social differences and struggles” (Johnson, 1997, p. 39) and affords an intertextual context within the investigative parameters. The discourse undergirds the idea that “imagination, in the sense of representation and image, is a legitimate and central form of social practice in the globalizing world,” (Hussinger, 2006) reemphasizing subjective affinities within communities where borders are not typically physical but “perceived [...] and [are] symbolic” (Ornatowski and Bekins, 2004, p. 259). Cultural expressions have thus come to be interpreted as a complex of choices rather than positions relative to place. The subjective motivations and preferences for (electronic) communication technologies encourage intensive individualization and subsume both the local essence of a place and the global character of space without fixed limits. Cultures, therefore, are identified with something people “do” rather than something they “have”— a shift from the traditional essentialist toward a more constructivist framework (Dahl, 2014) that has evolved over the last few decades.

In the last two decades, the expansion and compression of space and time facilitated by digital technologies, especially the Web and computers, have profoundly affected our cultural thinking and practice. The structural change is best conceptualized in the phrase “Globalization 3.0” signifying a shrinking world “from a size small to a size tiny and flattening the playing field” (Friedman, 2005, p. 10). Most importantly, Globalization 3.0 with its “unique character” was made possible by the integration of the “newfound power for *individuals* to collaborate and compete globally” (p. 10, italics in original). Evidently, some of the contemporary commentators differed with Friedman and strenuously challenged the world-is-flat thesis as a “hype” for the partial economic, cultural, political, and social scales of integrations that it purportedly claims (Ghemawat, 2012). However, despite the studied skepticism, the popular consensus is that globalization has enabled the “individual [...] to annex the global into their own practices of the modern” without having to converge with the prescribed ideals of the greater collectives such as family, organization, or government (Appadurai, 1996, p. 4).

One of the crucial reasons for technological adoption is the fact that digital technologies have made possible for users to have more “means inserted between source and result” thereby creating more freedom of choice and the ability to manipulate information artifacts (Van dijk, 2012, p. 212). Digital technologies have reconfigured the fundamental economic principle of consumption and production by blurring the conventional expert-novice distinction—a distinction still holding true in the analog world of information processing. This transformation in creative capabilities is a unique cultural shift legitimizing individual expression through infinite possibilities embedded within the architecture of digital technologies; no longer do grand standards and rules writ in stone control creative ventures of individuals, groups, or communities. Following this assertion, like articulations of culture, a digital artifact emerges as

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a sum total of bits and bytes created, communicated, shared, and adopted in the speed of light. The flexibility granted by the permutation of digital codes gives rise to a shared culture, cutting across political and geographical territories. A case in point is the soccer World Cup. While only 32 countries spanning five federations vied for the FIFA World Cup Trophy, Electronic Arts Sports sold millions of copies of their game FIFA '15. According to a Forbes report, "Credit Suisse forecasts unit sales of 11.3 million *worldwide* of FIFA 15 for the 12 months ending in March 2015" (Badenhausen, 2014, emphasis mine). The cultural exports by the major movie industries of the world like the U.S., India, and Hong Kong on a pan-continental scale also stir similar global interests and frenzy, penetrating geographic limits and creating strong macro cultural affiliations that are being continuously individualized through trans-national realities.

However, the acquired sense of belonging through the affordances of digital space regardless of the national, racial, and ethnic dispensation is organized by a matrix of similarities and differences. The manipulations of digital codes occur within the defined superstructure of the pre-programmed codes developed, in this case, for the 2015 FIFA World Cup; on the other hand, these codes also mobilize the adoption of a wide domain of cultural choices for individual use including roleplaying and cultural impersonation. As van Dijk (2012) noted, "these options do lead to both differentiation and a standardization of culture" (p. 212), thereby suggesting that cultural scripts are dynamic versions of macro and micro patterns unfolding within the interstices of traditional precepts and contemporary practices.

### **Digital technologies**

The waning and waxing of cultural diffusion can be attributed to several interacting forces associated with digital technologies culminating in the marriage of the World Wide Web (WWW) with the hypertext transfer protocol (HTTP). Before looking at what I term as the "ultimate convergence," the creation of a public browser combining the features of WWW, an aggregate of electronic documents including text; images; graphics; sound; video; images, and HTTP, I will dwell briefly on some other contributing forces. The moniker, ultimate convergence, assumes not only the technical union of binary codes, but more importantly it signifies an immense cohesion of cultural ideas, opinions, and expressions on a space which otherwise is a diverse and diffuse "radical otherness." There are three important developments in addition to the ultimate convergence that revolutionized information and communication practices: (a) simple mail transfer protocol (SMTP) and domain name system (DNS) conjointly; (b) hypertext transfer protocol (HTTP); and (c) Transmission Control Protocol/Internet Protocol (TCP/IP). These elements coupled with the ultimate convergence helped link distant binary codes between host and client computers and in effect connected individuals who manipulated these codes.

The technological inventions, mentioned above, provide compelling reasons for some serious discussions. However, given the limited scope of this essay, I will not expand on their technical operations but briefly outline their salience in the context of the current narrative.

The switch from the analog letter to the binary email was one of the most decisive moments in the history of communications in general and written messages in particular. In 1971, using the "@" separating the user's account name from the host for a networked message, Ray Tomlinson

of Bolt Beranek and Newman (now BBN) scripted the first email. Initially, the difficulty was to transmit a single email to multiple recipients on the same host, but this was solved through a series of connected developments in the 1980s, such as SMTP, HTTP, TCP/IP protocols (Patridge, 2008). These developments channeled a single email with the help of a DNS server to several client computers setting the stage for a new communication paradigm. These chronologically related developments reconfigured the crucial notion of connection; they not only enabled connection between hardware and software, but most importantly, they established a people-to-people connection resulting in an intense exchange of cultural information.

The next major rupture in communication was the creation of Mosaic, the first popular graphical web browser released in 1993 by the National Center for Supercomputing Applications (NCSA), though the Erwise web browser on the UNIX platform preceded Mosaic. Often referred to as the “universal client” due to its extensive access to all web contents, the Web browser integrated the functionalities of HTTP and WWW. It is important to note here, that the Internet, a massive link of electronic networks, had existed since 1989, almost a quarter of a century before the invention of the WWW.

While accessing the Internet was possible through Gopher, a simple Internet search tool enabling full-text search across a distributed host using a client/server protocol, the Internet grew in popularity on a mass scale due to Mosaic ushering in a new era of cultural exchange (McCahill and Anklesaria, 1995; Banks, 2008, p. 163). The browsing functionality was not just an invention, it was an innovation in information processing with strong implications for culture. Web’s importance in shaping cultural patterns was summarized by Thomas Friedman (2005), who observed that:

[the Web] browser enabled people to connect with other people as never before, it did not take long before all these people who were connecting wanted to do more than just browse and send e-mail, instant messages, pictures, and music over this Internet platform. They wanted to shape things, design things, create things, buy things, keep track of inventories, do somebody else’s taxes, and read somebody else’s X-rays from half a world away. And they wanted to be able to do any of these things from anywhere to anywhere and from any computer to any computer—seamlessly (p. 79).

This implication is far-reaching and anticipates a new way of organizing and reproducing ideas and thoughts via digital technologies, allowing for a crucial ownership of individual cultural space in a manner perhaps not experienced in the past. I argue in the following section that cultural *interactions* and digital *appropriations*, particularly in the use of the Web, share some defining characteristics between them. I do not claim that cultures and digital technologies can be equated at all levels of interpretation, however, nor do I intend to suggest that every instantiation of culture has an equivalent practice in digital technologies.

### **Intersection of Culture and Digital Technologies**

The possibilities of integrating culture and digital technologies are potentially enormous with a few instances already discussed in the foregoing two sections. Cynthia and Richard Selfe (1994) in the “Politics of Interface: The Triumph of Users: Achieving Cultural Usability Goals with

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User Localization,” extended the concept of the border from the physical to the cultural and social levels. In doing so they questioned the limits of space and reiterated it as being “represented and reproduced in so many levels, that [borders] frequently remain invisible to us” (p. 481). The hyphenated notions of culture—the subjective/objective, universal/indigenous, or etics/emics—problematize the notion of the border at both the individual and collective level. Likewise, digital technologies too blur the experience of constructed space, as they are rarely defined by conventions of politics and geography.

Through three distinct features characterizing the Web, I show how virtual space resembles certain qualified aspects of culture in physical space. The comparison aids our understanding that cultural zones, whether physical or virtual, are dynamically constructed. The analogy further asserts that there is an element of intuitiveness associated with the adoption and appropriation of information and communication technologies.

**The Web is a participatory phenomenon:** Like culture, the Web demands the active collaboration of its participants. The participants produce, exchange, collaborate, consume, and validate information and communication resources in binary codes. The Web defined by “technical codes” incorporates “rules and rituals” for operations (Feenberg, 2002, p. 77). There are etiquettes to be followed such as respecting the privacy of others and avoiding flaming, or the use of strong abusive opinions (Shea, 2005). Similarly, the Web is also directed towards the ritualistic “maintenance of society in time... and representation of shared beliefs” through an endless and steady stream of networking (Carey, 2009, p. xviii).

**The Web is a shared space:** As an analogue of culture, the Web operates on the principle of sharing and exchange evident in multiple instances, the most popular being Web 2.0, understood as services or user processes built on Web technologies and open standards such as “blogs, wikis, podcast, RSS feeds, etc., which facilitate a more socially connected Web where everyone is able to add to and edit the information space” (Anderson, 2007, p. 5). Sharing is highlighted by the creation, distribution, and consumption of information resources using systems of networking.

**The Web is evolutionary:** The function of the Web, much like that of cultures, evolves through innovation and adaptation. From the development of Enquire, a hypertext-based project management tool, to scripting of Remote procedure Call (RPC), a program connecting multiple computer systems, to the coding of the first HTML document on December 3, 1990, the Web is a growth story unfolded through a sequence of decisive inventions and expedient innovations (Berners-Lee, 1999, p.1; *History*).

The congruence of culture and digital technologies, with the Web as the world’s largest knowledge database, critically impact participants’ cultural environment by mediating it electronically. For instance, multimodal interactions through discussion forums, chatrooms, mailing lists, online community message boards, Internet radio and television, virtual tours using Google Earth, and other Web 2.0 affordances make it feasible “to see how new ways of creating and distributing symbols have made it possible [...] for people to change existing cultural practices, and through these changes in the way people socialize, to transform societies”

(Rheingold, 1993, p. 43). Lankshear and Knobel (2007) in quoting Michael Schrage reiterate that the deeper meaning of Web technologies lies in understanding “the greatest impact [the Internet and the Web] have had and will continue to have on relationships between people and between organizations.” (Schrage 2001 in Lankshear and Knobel, p. 12). Toward this end, it becomes important to identify the methodological structures that can properly locate technological consequences within a broader cultural narrative. In the next section, I explore the importance of identifying universal and objective features for examining cultures.

### **Exploring universals**

Conversations in cultural research have not yet articulated a common standard for cultural analysis. However, with the reemergence of the idea of globalization (Rothschild, 1999) and a renewed interest in its influence on culture, it is becoming crucial to rearticulate the common resources that could be mobilized to create advantages through economies of connections. As Kathryn Sorrells (2013) notes that understanding culture has become more important than ever because of “the ways it is linked to community, national, international and transnational economies and politics” (p.9). The underlying purpose of such an endeavor is to facilitate the scalability of overlapping macro trends hinging on the fundamental relationship between humans and their surroundings.

In the past three decades the cultural narrative in professional and technical communication has overtly relied on an etic framework to classify cultural practices in institutions and organizations. Hall and Hofstede established a long tradition of cultural, cross-cultural, and interdisciplinary research foundations for applications in business research and research in behavioral psychology (Matsumoto, 2000; Hofstede and McCrae, 2004). Hofstede’s works in particular have “provided an invaluable basis for quantitative cultural research” and demonstrated a predominance of quantitative over qualitative approaches in cross-cultural research (Kralisch, 2005, p. 11). Peter Cardon (2008) in his position paper, “A Critique of Hall’s Contexting Model,” has outlined how the works of the two scholars have been in the recurrent motif of “nearly all of the academic literature having to do with cross-cultural comparisons” and have been “identified as the most commonly used cultural model in intercultural communication courses” (p. 400). However, these models favor cultural conceptions from organizational points of view espousing cross-cultural business objectives that view cultural communication and interaction as necessarily dichotomous. Using frames of typologies, the models render culture as comparable along categorized extremes and in effect tend to suggest the best-practices approach as the methodological backbone for cultural research.

Despite a wide adoption of the models, “there is a discernible feeling among scholars” to move beyond the dimension orientated approach (Holden & Tansley, 2007, p. 11). Over the years, these models have come short of explaining certain emerging but relevant questions in cultural trends precipitated by a complex “process fueled by, and resulting in, increasing cross-border flows of goods, services, money, people, information, and culture” (Guillen, 2009, p. 4). Neither Hall nor Hofstede provides a methodological support for understanding dialectical occurrences like cultural convergence, diffusion, and integration. The convergence hypothesis maintains that “due to influences such as technology and global industrialization, cultures have a tendency to become similar” (Bryan et al., 1994, p. 223). Similarly, it is also argued that “all computer users,



irrespective of their country of origin, belong to a ‘computer/technology sub-culture’ that uses a specific language, set of symbols, values, and protocols for behavior” (Ford et al., 2005). Given the discursive history of mapping culture etically, it is relevant to see how this framework was originally conceived.

Kenneth Pike (1957), in describing the emic and etic formulations, famously observed that the pairs are meant to afford “A stereoscopic window on the world,” providing an analytical advantage for zooming in and out of cultural contexts (p. 147). The terms were derived from the words phonetic and phonemic and were distinguished by etic, defined as shared attributes across cultures like the universal qualities of sounds, and emic conceptualized as particulars intrinsic to cultures like specific speech utterances. These definitions were meant to create awareness rather than bias in the analysis of culture. The etic meant to signify the “cross-cultural objective, prepared in advance as a typological grid, somewhat absolute, often measurable,” frame while the emic represented a more “domestic, mono-cultural, structurally derived, relative and contrastive [objective] in reference to a system” with the main difference between the two being the relative “distance from the object of analysis” (Franklin, 2009, p. 1).

In recent literature (Madson, 2014; Thatcher 2010a) the significance of this framework has been duly reiterated, repurposing the methodology with a fresh understanding of the etics-then-emics approach. Central to this understanding lies the combinatory adoption of etics as a commonwealth of shared generalizations across cultures and emics as subjectivized particulars exclusive to individual cultural expressions. However, the methodological advantage of this etics-first approach eschews ethnocentric interpretations by considering concomitant variables that influence cultures. Toward this end Thatcher (2010a) noted that—

Not surprisingly using local approaches for global inquiries presents serious problems, including ethnocentrism, methodological aporia, poorly theorized global-local relations, ignoring large-scale variables (such as global markets, outsourced manufacturing, and law), and unworkable ethics (p. 2).

Cultures need not be reinvented, but cultural methodology surely needs to be as is evident from the clarification above. The combined use of the terms etic and emic, therefore, invites us to look at cultures as continuous and derived practices often inflected by individuated ideas and interests.

The process of determining etic characteristics begins with identifying broad categories of shared similarities in human activities. Although I have offered a review of this typological approach in my literature review, I outline three approaches here that have been popularized in the post-Web era. The classifications reveal overlapping criteria:

Universalism versus particularism (rules versus relationship), communitarianism versus individualism (group versus individual), diffuse versus specific (range of involvement), neutral versus emotional (range of feelings), achievement versus ascription (orientation of status) (Trompenaars & Hampden-Turner, 1997);

Relational dynamics of individual and group relationship (autonomy versus conservatism), social interdependence through power difference (egalitarianism versus hierarchy), relationship to natural and social world (harmony vs mastery) (Schwartz, 1999);

I/other, norms/rules, public/private (Thatcher, 2010).

Parsing cultural universals with polarized values helps understand cultures along some organizing principles, separating human from non-human instantiations of culture.

The universal orientations underscore salient methodological principles for examining intercultural contexts, which link digital technologies to cultures. Through a “five-point communicative heuristic,” purpose, audience, information, organization, and style, Thatcher (2010) constructs the rhetorical bridge connecting digital communications and culture (p. 183). He underlines the importance of this heuristic model, suggesting that it can “serve as a universal frame for approaching cross-cultural technical communication” (p. 183). The model connects each item with media use and practice showing how the notion of purpose or style is embedded into the appropriation of a particular digital medium such as email. The model, driven by the effective utilization of rhetorical principles, however, does not address the need to characterize digital technologies in terms of technological universals. I argue that, like culture, technological universals influence adoption and appropriation of different kinds of technologies as shown later in the findings section of this article.

Reimagining etic features of technologies can help understand the quality and quantity of appropriation. For instance, a society with a strong power difference may exploit certain aspects of technology like access or reach to preserve the hierarchical status quo. On the other hand, a society that enjoys less power difference might be given to using the efficiency aspect of technology to improve the idea of shared responsibility. The features of technology can serve rhetorical functions by determining who uses the technology (audience), why the technology is being used (purpose), how the technology can be used (style), and to what extent it can be appropriated (organization). The process of identifying technology etics and combining them with their cultural counterpart through BIA is explained in the next section.

### **Blended Interactive Approach (BIA)**

The etics-then-emics framework can be likened to analog and digital, respectively. The analog attributes are recurrent in their defined continuity across time and space without any identifiable fault lines—the etic generalizations; similarly, the digital includes discrete markers of beliefs, practices, and values embedded intrinsically within the novelty of groups, communities, societies, and nations—the emic peculiarities. All the universal formulations are by default non-digital categorizations as they don’t factor into the roles digital technologies play in cultural discourse. By focusing on digital technologies, BIA formulates technological etics and repurposes the etics-then-emics framework.

BIA consolidates the cultural etics-then-emics paradigm with technological etics-then-emics substantiation. Like cultural emics, technological emics are contingent on groups of users, the

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context in which the appropriation occurs, and variables such as hardware and software configurations affecting the conditions of use. Technological etics replicate universal characterizations by organizing the recurrent and common attributes wrought through the digitization of communication and information technologies. These features include numerical representation, modularity, automation, variability and cultural transcoding (Manovich, 2002, p. 44); speed, reach (social and geographical), storage, accuracy, selectivity, privacy, interactivity, complexity (Van Dijk, 2012, p. 16); efficiency, complexity, specialization, diversity (Kelly, 2010, p. 270). These elements are selected for their broad semblance to one another despite degrees of difference in conceptualization and numbering. Importantly, Kelly (2010) outlines three stabilizing forces that shape the technological complex. Defining these forces as “The Triad of Technological Evolution,” he argues that any technological designs and appropriation, digital included, are subject to historical processes contingent on time and space, structural designs governed by the laws of physics, and subjective intentions exercised by the individual concerned (p. 183). The qualities define some stable conditions that outline the superstructure of technology from a systems perspective.

Broadly speaking, cultural practices are always indexical in the sense that it is possible to measure causal relationships, holding that certain assumptions are true, with reasonably satisfying degrees of accuracy. In other words, actions and activities are determined in accordance with historical processes and the availability of resources within the context of a given culture. Therefore if we are able to identify the variables associated with the social assets and conventions of a given culture, it is possible to characterize some of the most dominant patterns of that culture. The basic construction of BIA is a combination of the two diverse etics tools (see Figure. 1) informing our fundamental notions regarding culture and technology.

### Blended Interactive Approach

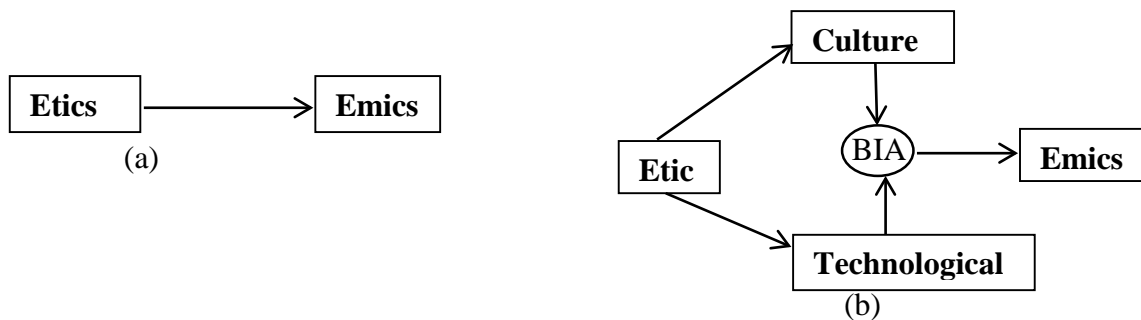


Figure 1. Reconceptualizes etics-then-emics framework of cultural universals (a) to blended approach combining cultural and technological universals (b).

BIA underscores the import of technological etics as an interpretive tool to be used with a cultural framework. It takes into account the basic assumption of the etics-then-emics approach by adding another layer of universals that retain both global and indigenous aspects of cultures. BIA draws its strength from balancing the etics category from the technological side as the latter is increasingly brought to bear on contemporary discourse on culture. This tool further identifies

a complimentary space in the etics-then-emics framework by inviting other distinct categories that might be mapped with culture; however, a cultural process is far too complex and indigenous to be captured at any given time, making the whole joy of examining culture a matter of an enduring work in progress.

### **Contextualizing BIA**

Below I describe a study undertaken in 2012 in India to examine the nature of digital technology use among the senior urban population. The findings are mapped in accordance with BIA, factoring in universal constructs of culture and technology use.

#### **Background and method of the study**

The study focused attention on a distinct social group and examined culture through its everyday communicative processes reimagined through digital technologies; it applied cultural and technological paradigms to user-driven acts of communication by investigating a techno-cultural phenomenon. So far as the definition of culture is broadly situated to include not only fixed values but also the contextual behavior of individuals, the models popularized by Hall and Hofstede cannot be applied to ascertain the connections between culture and technology adoption and use. The methodological framework therefore has to be combinatory to respond to the multiple challenges posed by the various interacting elements. Mixed methods research (MMR) as a “problem-solving, action-focused inquiry process” supports the central epistemological theme that cultural instances are produced through contingent actions guided by assumptions rooted in historical traditions (Greene & Hall, 2010, p. 131).

Using MMR, data collection was based on a single-phase concurrent triangulation procedure (Creswell et al., 2010, p. 58) that included both quantitative and qualitative methods embedded as qualitative/quantitative/qualitative. Interviews underscored the know-why (perception), a cross-sectional convenience survey highlighted the know-what (recognition), and usability highlighted the know-how (performance) aspects of digital technology (Ray, 2014).

The study investigated interactive competencies of Indian senior citizens between the ages 60 to 75 years in desktop and online environments including:

- the nature of interface socialization including mouse and keyboard controls (input devices); GUIs (visual input devices);
- Skype and Yahoo Messenger (VOIPs);
- Internet Explorer, Google Chrome, Epic 1.0 (browsers);
- and the contexts in which these technologies were used.

The study was conducted in Kolkata, a metropolitan city in eastern India, defined as one of the top three UAs (Urban Agglomerations) (Size). A total of N=139 participants (78% male and 22% and female) were interviewed, surveyed, and tested on discount usability. The main research questions covered issues of cultural influence, individual skills, and nature of use: What cultural attributes help improve/advance or damage/hurt digital literacy of the target population? How do they adopt, learn, and use digital technologies of communications in their daily lives? What are some of the culturally enabling or restricting features inherent in the design of

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computer technologies? These questions were tackled through individual methods described below:

**Interview:** Interviews included twenty one structured questions for a randomly selected N=18 participants. The method addressed the first research question by looking at the nature of interface socialization guided by cultural beliefs and interests.

**Survey:** A non-random, convenience sampling method was used across a cross-section of N=116 senior members of the society. The thirty-one question survey was self-administered; the primary objective was to identify the nature of digital literacy among the technical actors by understanding the purpose of use.

**Discount Usability:** A twenty-eight minute discount usability test *in situ* using think aloud protocol (TAP) was aimed specifically at task completion by N=5 participants. A total of six tasks were classified according to three major topics—(i) basic hardware operations, (ii) basic Windows interface operations, and (iii) advanced software operations. The tests were video-taped by three cameras and included pre- and post-test surveys.

The data was analyzed using triangulation that consisted of applying the different methods based on the different research questions. Since the philosophical underpinnings of MMR rest on pragmatism, the notion of validity was treated from a realist perspective, rather than from a procedural viewpoint. From the realist point of view, validity is “not a matter of procedures, but of the relationship between the claim and the phenomena that the claim is about” (Maxwell & Mittapalli, 2010, p. 158). Therefore, the language of validity was driven by review of literature, the design and evaluation of the study, design quality, interpretive rigor, sequence of phases, blending of paradigmatic assumptions, quality of inference, and suitability of research questions to methods (Creswell, 2003, p. 94).

### Major findings

The influence of digital technologies on social choice and on cultural freedoms and restrictions are discernible through the framework of BIA. Extrapolating the etics categories from cultural and technological domains, I show that technology appropriations are not isolated phenomena meant to be restricted to principles of use. Rather it is a complex reaction to the design and materiality of technology determined by common perceptions formed within the loci of culture and the nature of technology. Table 1 illustrates the major findings attesting the complementary functions of universals. It further helps to understand the cultural expressions of a community or a group at a given period. As cultural conventions guide diverse responses to environments, the technological conventions too adjust assumptions about the technological capacities and our abilities to exploit those capacities. I discuss two findings from the study to demonstrate BIA’s application in the current context.

Table 1.

*Mapping cultural and technological universals to technology appropriation*

<b>Findings from the study</b>	<b>Cultural Etics</b>	<b>Technological Etics</b>
Plans of engaging with the Internet and computer technologies in the future are promising at the least and idealistic at best but not very conclusive.	Diffuse: range of involvement is not well defined (Trompenaars & Hampden-Turner, 1997)	Selectivity, privacy, interactivity, complexity (Van Dijk, 2012)
The Internet and computer technologies are increasingly viewed as common household technologies and thus compared with washing machines, refrigerators, and air-conditioners	Harmony: emphasizes harmony with the surrounding. Accommodates objects within the order of every day practice (Schwartz, 1999)	Automations, transcoding and modularity (Manovich, 2002); efficiency (Kelly, 2010)
The use of old media are extensively reserved for daily information and entertainment purposes while the Internet and computer technologies are used in specialized instances involving search-and-find actions	Norm: Normalizes appropriation in accordance with attitudes and habits formed by conventions (Thatcher, 2010)	Specialization (Kelly, 2010); selectivity (Van Dijk, 2012)
The relationship between technological concepts and precepts are sometimes culturally determined and affects performance of task	Conservatism: cultural emphasis on maintenance of the status quo and avoidance of inclinations that might undermine traditional order (Schwartz, 1999)	Complexity, diversity, efficiency (Kelly, 2010)
Satisfaction regarding use of the Internet and computer technologies is derived from fulfilling current obligations (keeping in touch with family and friends) and being able to meet the existing goals rather than creating new ones	Harmony: emphasizes conformity to social obligations rather than will to control situations (Schwartz, 1999)	Selectivity, privacy, interactivity (Van Dijk, 2012); Specialization (Kelly, 2010); modularity (Manovich, 2002);
Digital divide is precipitated by both knowledge gap and usage gap	Ascription: younger generations using the digital technologies enjoy a default advantage over their older counterparts due to the relationship between their age and the process of technological adoption (Trompenaars & Hampden-Turner, 1997).	Numerical representation, variability, modularity, transcoding (Manovich, 2002); privacy, interactivity, complexity (Van Dijk, 2012)



<p>The Internet and computer technologies are mainly used as a substitutive communication technology replacing primarily long-distance, international telephone calls and postal communication</p>	<p>Specific: fulfills needs through selective appropriation of the ICTs (Trompenaars &amp; Hampden-Turner, 1997)</p>	<p>Variability, modularity (Manovich, 2002); ; efficiency, specialization, diversity (Kelly, 2010); accuracy, selectivity, privacy, interactivity, (Van Dijk, 2012)</p>
<p>The Internet and computer technologies are not used for a peer-to-peer level (within) communication but to stay in touch with the people of younger generation living abroad or away from home (between)</p>	<p>Hierarchy: appropriation reflects hierarchy as opposed to egalitarianism due to asymmetric power differentials (Schwartz, 1999)</p>	<p>Variability, transcoding (Manovich, 2002); efficiency, specialization, diversity (Kelly, 2010); accuracy, selectivity, privacy, interactivity, (Van Dijk, 2012)</p>

The above findings throw light on the uses of the technologies examined but also explain cultural and technological reasons behind the use, invoking the underlying principles of BIA. Since BIA concentrates on etics categories, the notion of a digital divide can be explained using the cultural etic of ascription and its corresponding technological etics. The younger Indian generation, having early access to digital technologies, adopts, learns, and handles computer and digital technologies much faster than their older counterparts. Here, one can invoke the technological etic of modularity or variability to explain the quality of orientation between two generations of users. The manipulation of binary codes reconfigures our consumption and production experience in a completely different technological order unknown to a senior generation that mostly enjoyed an analog stream of information within what was largely a mass-mediated society. The older generation is less exposed to a discrete understating of media consumption and as a result is not readily given to embracing computer and digital technologies.

The findings also reveal that for the older generation information processing is enforced by a sharp distinction between old and new media. We can employ BIA to understand why this is the case. The cultural etic of normalization naturalizes the conventions of using old media that continue to dominate the daily consumption habits of participants, such as reading newspapers and watching television as opposed to adopting Web equivalents. On the technological level, the etics of specialization and selectivity are invoked when it comes to performing search-and-find operations. Evidently, the distinction of active and passive participation is sharper in the older Indian generation.

This paper foregrounds the opportunity for applying BIA. BIA can be a useful tool for learning cultural universals regarding human habits, attitudes, and perceptions and their relationships with technological etics—in this case, the objective qualities of digital technologies. The integrative approach laid out in BIA is a helpful in indicating the influence of technological universals on user appropriation. Using BIA, a researcher in the field of technical communication and rhetoric can apply these etic categories (present in the study as Cultural Etics and Technological Etics) and arrive at some understanding of the cultural process within the defined context. Here BIA is

used in one particular cultural context, but it can also be extrapolated to any other context having its own unique combinations of etics elements; the rhetorical import of BIA does not restrict the use of the categories in any particular adjacency but encourages a contextual inquiry within its flexible framework. Technical communication has engaged with the questions of cultural rhetoric and digital technologies without any explicit reference to the role of universals outside cultural domains. In that direction, BIA is an attempt to blend the diverse universal identifiers of culture and technology alike.

### **Discussion and conclusion**

The postmodern articulations in technical communication privilege a technorhetorical view by adding importance to the integration of culture and technology. According to Salvo (2005), “The World Wide Web is the best contemporary example of a cultural site, becoming a literal realization of both technorhetoric and technoculture” (p. 64). In practice, BIA underscores the importance of technorhetorical aspects of communication by offering an alternative reading of the etics-then-emics paradigm through the crucial category of technological etics. It provides an analytical frame for the current study, which incorporates a technoculture approach through examining the information practices of a cultural community using digital technologies. As an analytical tool, BIA positively responds to the assertion that “emergent technologies [i.e. digital technologies] and cultural formations surrounding the World Wide Web, offer an opportunity to reexamine basic questions in culture” (p. 65). The tool justifies the conscious attempt to map technologies within cultural formations for the purpose of making cultural practices more visible. BIA therefore can be called upon to negotiate the important epistemological link between two very important constructs—culture and technology.

The process of decoding culture is a complex exercise since it attempts to balance outsider/objective observation with insider/subjective knowledge. Admittedly, BIA is limited in its function because culture is frequently equated with other constructs. Besides technology, culture has been associated with “speech habits, folklore, frames of value, [and] collective self-image” (Eagleton, 2000, p. 37); it has also been attached to concepts like “international business, tourism, foreign employment, legal and illegal immigration, [and] military interventionism” (Lull, 2007, p. 93). BIA as a tool does not encompass the range of variables that are ordinarily used to discuss cultural formations outside technological limits. Therefore, its audience would be limited by the scope of interest BIA favors. However, in a generalized scheme, BIA can be perceived as an instrument of analysis that emphasizes the utility of infusing etic categories with a critical appraisal.

Acknowledging this basic limitation, this paper defines culture as a combination of choices an individual makes involving collective influences of the contexts in which an act is performed. Culture therefore is rooted in traditional processes, but at the same time demonstrates dynamic qualities of being elastic and on-demand. Culture is generally viewed with a capital C in the traditional sense of “ways of life”—the idea popularized in the models of Hall and Hofstede, but going beyond this suggests a complex “sum of [...] experiences and identities the person creates for himself or herself from all cultural ideas, images, and objects with which the individual comes into contact” (Lull, 2007, p. 55). The definition advanced by this paper helps to identify the locus of culture in individual conversations, in their actions, decisions, and practices as well

in the performative standards that exist outside of the self. Culture, therefore, is as much an idea as it is a practice of that idea.

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