

18MPS25E-CYBER PSYCHOLOGY

UNIT-1

TOOLS AND THE PSYCHOLOGY OF INTERNET

Tools are more than just making something to make a task easier. They change the way of your thinking, of approaching a task, and can reach unimagined wide range of social changes. A task is fundamentally different if we use a tool or use our own memory. The development of tools, right from the earliest alphabetic and numerical system, has radically transformed not only to the task, but also the human capabilities. Vygotsky(1978) called this as mediation and argued that tools allow for the extension of human capabilities.

A BRIEF INTRODUCTION TO INTERNET

In the 1960s, the Advanced Research Projects Agency (ARPA) of the United States Department of Defense funded research into time-sharing of computers. Research into packet switching, one of the fundamental Internet technologies, started in the work of Paul Baran in the early 1960s and, independently, Donald Davies in 1965. After the Symposium on Operating Systems Principles in 1967, packet switching from the proposed NPL network was incorporated into the design for the ARPANET and other resource sharing networks such as the Merit Network and CYCLADES, which were developed in the late 1960s and early 1970s. ARPANET development began with two network nodes which were interconnected between the Network Measurement Center at the University of California, Los Angeles (UCLA) Henry Samueli School of Engineering and Applied Science directed by Leonard Kleinrock, and the NLS system at SRI International (SRI) by Douglas Engelbart in Menlo Park, California, on 29 October 1969. The third site was the Culler-Fried Interactive Mathematics Center at the University of California, Santa Barbara, followed by the University of Utah Graphics Department. In a sign of future growth, 15 sites were connected to the young ARPANET by the end of 1971. These early years were documented in the 1972 film *Computer Networks: The Heralds of Resource Sharing*.

Early international collaborations for the ARPANET were rare. Connections were made in 1973 to the Norwegian Seismic Array (NORSAR) 3 via a satellite station in Tanum, Sweden, and to Peter Kirstein's research group at University College London which provided a gateway to British academic networks.[The ARPA projects and international working groups led to the

development of various protocols and standards by which multiple separate networks could become a single network or "a network of networks". In 1974, Vint Cerf and Bob Kahn used the term *internet* as a shorthand for *internetwork* in *RFC 675*, and later RFCs repeated this use. Cerf and Khan credit Louis Pouzin with important influences on TCP/IP design. Commercial PTT providers were concerned with developing X.25 public data networks. Access to the ARPANET was expanded in 1981 when the National Science Foundation (NSF) funded the Computer Science Network (CSNET). In 1982, the Internet Protocol Suite (TCP/IP) was standardized, which permitted worldwide proliferation of interconnected networks. TCP/IP network access expanded again in 1986 when the National Science Foundation Network (NSFNet) provided access to supercomputer sites in the United States for researchers, first at speeds of 56 kbit/s and later at 1.5 Mbit/s and 45 Mbit/s. The NSFNet expanded into academic and research organizations in Europe, Australia, New Zealand and Japan in 1988–89. Although other network protocols such as UUCP had global reach well before this time, this marked the beginning of the Internet as an intercontinental network. Commercial Internet service providers (ISPs) emerged in 1989 in the United States and Australia. The ARPANET was decommissioned in 1990. Steady advances in semiconductor technology and optical networking created new economic opportunities for commercial involvement in the expansion of the network in its core and for delivering services to the public.

In mid-1989, MCI Mail and CompuServe established connections to the Internet, delivering email and public access products to the half million users of the Internet. Just months later, on 1 January 1990, PSInet launched an alternate Internet backbone for commercial use; one of the networks that added to the core of the commercial Internet of later years. In March 1990, the first highspeed T1 (1.5 Mbit/s) link between the NSFNET and Europe was installed between Cornell University and CERN, allowing much more robust communications than were capable with satellites. Six months later Tim Berners-Lee would begin writing WorldWideWeb, the first web browser, after two years of lobbying CERN management. By Christmas 1990, Berners-Lee had built all the tools necessary for a working Web: the Hypertext Transfer Protocol (HTTP) 0.9, the HyperText Markup Language (HTML), the first Web browser (which was also a HTML editor and could access Usenet newsgroups and FTP files), the first HTTP server software (later known as CERN httpd), the first web server, and the first Web pages that described the project itself. In 1991 the Commercial Internet eXchange was founded, allowing PSInet to communicate with the other commercial networks CERFnet and Altnet. Stanford Federal Credit Union was the first financial institution to offer online Internet banking services

to all of its members in October 1994. In 1996, OP Financial Group, also a cooperative bank, became the second online bank in the world and the first in Europe. By 1995, the Internet was fully commercialized in the U.S. when the NSFNet was decommissioned, removing the last restrictions on use of the Internet to carry commercial traffic.

Worldwide Internet users	2005	2010	2017	2019a
World population [43]	6.5 billion	6.9 billion	7.4 billion	7.75 billion
Users worldwide	16%	30%	48%	53.6%
Users in the developing world	8%	21%	41.3%	47%
Users in the developed world 51%	51%	67%	81%	86.6%

As technology advanced and commercial opportunities fueled reciprocal growth, the volume of Internet traffic started experiencing similar characteristics as that of the scaling of MOS transistors, exemplified by Moore's law, doubling every 18 months. This growth, formalized as Edholm's law, was catalysed by advances in MOS technology, laser light wave systems, and noise performance.

Since 1995, the Internet has tremendously impacted culture and commerce, including the rise of near instant communication by email, instant messaging, telephony (Voice over Internet Protocol or VoIP), two-way interactive video calls, and the World Wide Web with its discussion forums, blogs, social networking services, and online shopping sites. Increasing amounts of data are transmitted at higher and higher speeds over fibre optic networks operating at 1-Gbit/s, 10-Gbit/s, or more. The Internet continues to grow, driven by ever greater amounts of online information and knowledge, commerce, entertainment and social networking services. During the late 1990s, it was estimated that traffic on the public Internet grew by 100 percent per year, while the mean annual growth in the number of Internet users was thought to be between 20% and 50%. This growth is often attributed to the lack of central administration, which allows organic growth of the network, as well as the non-proprietary nature of the Internet protocols, which encourages vendor interoperability and prevents any one company from exerting too much control over the network. As of 31 March 2011, the estimated total number of Internet users was 2.095 billion (30.2% of world population). It is estimated that in 1993 the Internet carried only 1% of the information flowing through twoway

telecommunication. By 2000 this figure had grown to 51%, and by 2007 more than 97% of all telecommunicated information was carried over the Internet.

E-mail: An asynchronous text-based communication which can be one-one or one-many. As email tools have developed, they have gained new capabilities like attachments, form linking, etc

Chat: Chat software allows for synchronous(real-time) text based communication, either one-one or one-many. It can be conducted via WWW or through dedicated softwares.

File-Sharing: It was one of the earliest activities on the Internet. In its earliest format, file sharing involved logging on to a remote server and uploading and downloading files. In the late 1990s, peer-peer sharing allowed people to connect directly to the other computers to share files.

Asynchronous Discussion Groups: These are many-many systems for exchanging messages. They can be hosted and distributed by email, WWW, or any other servers.

Multuser Dimensions (MUD) : These are text-based virtual environments that are developed out of role-playing games. They provide not only synchronous environments, but also description of environments and a series of command interaction with those environment and other participants.

Virtual World: These are effectively 3D MUD where participants are represented graphically and interact with environment and other participants in the graphical 3D environments.

Video/VoiceCommunication: As the price of webcams reduced drastically, video conferencing like one-one or one-many with audio or video become more common.

World Wide Web: It accounts for the much of the data transmitted on the Internet. Although much is made of the WWW as a content delivery device, it is the use of hypertext link between pages that provides something unique to the users.

A BRIEF INTRODUCTION TO THE INTERNET TALKING WITHOUT MEETING

Gackenbach and Ellerman's argument is essentially that the Internet has led to many scholars essentially reinventing the wheel, along with the similarly utopian prediction of the social impact of new technology.

1. There are often striking similarities between mediated behaviours that share certain characteristics, regardless of the kind of technology they are using

2. There is an evidence that earlier technologies influence the psychological impact, and behaviour norms, of later technologies

WRITING

It is easy to forget that writing, as opposed to oral communication, is a technology. In Phaedrus, Plato argues that writing is inhumane and artificial, that it destroys memory and weakens the mind. Until medieval times, writing was very much a minority pursuit. Unlike today, writing was expected to be read aloud, and in most well-to-do households, different people would occupy the role of the reader and writer of letters. To have meaning, the written would be spoken, rather like religious incantations and wills are spoken today.

A number of developments lead to the rapid spread of literacy and writing- the reinvention of moveable type printing press by Gutenberg around 1450 removed the need for laborious copying by hand, while the availability of cheap material for writing(paper) meant that the printing press could be used 7 literally. Burke(1991) reported that in Bologna the price of paper had dropped around 400 percent in the 14th century. The invention of the printing press in the 1450s destroyed the oral society.

It is arguable that in one way computer technology has brought writing closer to its oral predecessor. When writing was transcribed and then read aloud, the register and the protocol for writing were still based on oral tradition. Perhaps as people wrote more and the technology for writing became easier, so writing itself moved to its own status.

THE TELEPHONE

In 1876, Alexander Graham Bell developed an harmonic telegraph which later became to be known as Telephone. Perhaps not surprisingly, considering the early telephone men came from the telegraph industry, the marketing in the telephone industry in the early days stressed its business uses and the possibility of telephone as a device of broadcasting rather than one-one communications.

Fischer(1992) notes that telephone executives bemoaned frivolous use of the telephone in internal memoranda, and actively discouraged social use of telephone until in the 1920s. At the same time, telephone industry and popular press were concerned with the abuse of the telephone. A message card from the history, a husband tells his wife that he cant come dear, too busy, while gambling with his friends. Later mobile telephones that automatically opens when they are opened is another case of design impending user control of interaction.

RADIO COMMUNICATION

Following the development of radio by Marconi, most radio stations were staffed by ex-telegraph operators as both the telegraph and radio uses Morse Code. By the end of W.W.I a large number of amateur radio enthusiasts had joined the airwaves. The use of radiowaves by the hams gave members of the public, for the first time, the experience of global community linked by mediated communications. Amateur radio gave many people an 'Internet-like' experience. Because of the most early radio operators were on board navy ships, they were predominantly male.

MOBILE TELEPHONE TEXT MESSAGING

SMS or Short Messaging System was developed during the early 1990s as an addition to the new GSM(Global System for Mobile Communication) system of mobile phones. SMS were an accidental success that took everyone in the industry by surprise. At the same time in the Europe, prepaid mobile phones became very popular. Worldwide the number of text messages sent to mobile phones in 2020 is 23 billion. The phenomenal growth of text messaging has also led to a rash of media stories and reports of text-message oddities, its use in romance and courting and the potential danger of too much of texts.

SELF -FOCUS MODELS

Dual self-awareness

According to early theorists Duval and Wicklund (1972) human have two basic states of awareness- objective and subjective self-awareness. Objective self-awareness is when a person is focused inward on themselves, while subjective self-awareness is when the focus of attention is the environment. A further distinction has been drawn between the social and private aspects of the self (Carver and Scheier, 1987). The social aspects of the self involve those parts of the self (e.g. physical appearance) that are public. These parts of ourselves are thus open for evaluation and judgement by others. Being focused on the social aspects of the self is termed 'public self-awareness. Public self-awareness is evoked by situations that make us aware that we are being evaluated, judged or held accountable. Heightened public self-awareness tends to lead to increased attempts at managing the impression we make, and monitoring feedback from others.

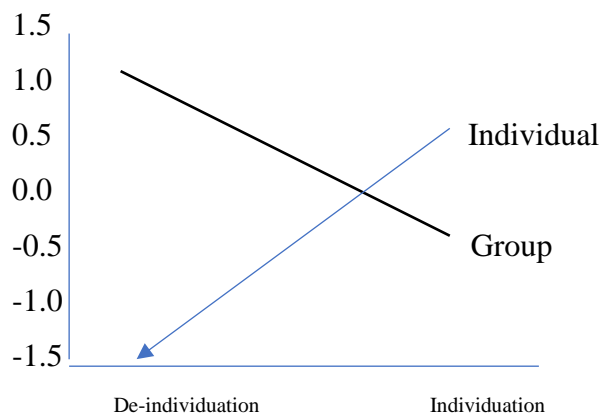
On the other hand, the private aspects of the self are those that are available to us alone (unless we choose to share them), such as feelings, attitudes and values and so on. Heightened private self-awareness tends to invoke behaviour based on our internal motives, needs or standards.

For instance, Carver and Scheier (1981) argue that private self-awareness instigates a self-regulation cycle where our behaviour is checked against our standards, and in ideal circumstances, adjusted so that our behaviour and standards match.

In an important early study, Kimberly Matheson and Mark Zanna (1988) examined the impact of CMC on private and public self-awareness. As more immersive environments develop, including those that involve physical activity, the effect of Internet use in heightening private self-awareness may well be ameliorated.

SOCIAL IDENTITY EXPLANATION OF DEINDIVIDUATION EFFECTS (SIDE)

A further explanation of CMC behavior comes from a SIDE model (Reicher et al., 1995). According to this model, most deindividuation effects, from those reported by Zimbardo (1969) onward, can be explained without recourse to deindividuation. Anonymity, because of the lack of focus on the self as an individual, tends to lead to the activation of social identities rather than the activation of personal identities (Reicher et al., 1995). This leads to the regulation of behavior based on the norms associated with the salient social group. For instance, Reicher et al. (1995) report a study on group polarization in which the salience of a group membership (in this case, as a psychology student) and the anonymity of the participants was manipulated. Group polarization is the tendency for a group's attitudes to become more extreme (in the direction of the average attitude) following group discussion.



Polarisation of attitudes by condition

The SIDE model has slightly more difficulty explaining general disinhibition, rather than group polarization, during CMC. One explanation is to discount the existence of uninhibited verbal behavior, and argue that it may be both context-dependent and normative within CMC (e.g., Lea et al., 1992). However, this requires a social identity to be salient, and that the norms associated with that social identity are toward disinhibition. Certainly, that disinhibition

in CMC can be characterized by both flaming and excessive self-disclosure suggests that the SIDE model is right in predicting that behavior on computer networks is context dependent. However, that it exists when the user is non-anonymous, and that much of the information is self-relevant, suggests that it might not always be caused by the activation of a social identity.

Critiques of SIDE

The application of SIDE to CMC has received remarked few critiques since the first paper in 1990. The most comprehensive critique come from the SIDE has focused singularly on anonymity as the defining feature of CMC and effectively ignored other aspects of the medium e.g. synchronicity. The strategic aspect of SIDE makes some predictions about identifiability and group behaviour but the links b/w the cognitive and strategic aspects of SIDE are not well developed. Moreover, thus far the vast majority of SIDE research on CMC focused on the cognitive aspects of SIDE rather Than strategic aspects.

More importantly SIDE is vulnerable to instance of group polarisation occurring when individuals are identifiable or when no group is salient. Indeed it would be a matter for a some concern if SIDE provided an answer fore very possible outcome of CMC. Without prior measurement of norms with in the group it is not possible to say whether a certain behaviour or set of attitudes is normative or not.

The link between self-awareness and SIDE is also open to some question .isolation is commonly seen as an indivuating experience increasing a person's private self-awareness. However that most of these problem of the application of SIDE to CMC have been raised by the SIDE researchers themselves suggests that at least some will be addressed by future research .

Rational actors and emergent properties; alternatives to technology determinism.

The models of mediated communication outlined above share a number of key features. First all are broadly technologically determinist –the feature of the technology have a psychological impact that determines the behaviour of the individual.