Sociable Media

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Sociable media are media that enhance communication and the formation of social ties among people. Such media are not new – letter writing can be traced back thousands of years – but the advent of the computer has brought about an immense number of new forms.

Researchers in this field look at how existing technologies are used, how they affect the relationships among the people using them, and how they transform society. They also design new technologies, drawing from fields such as cognitive science, sociology and urban design to create systems that better support social interaction. They examine the ways social cues are communicated in the real and the virtual world, discover the limits imposed upon on-line communities by their mediated nature, and explore directions that virtual societies can take that are impossible for physical ones. The goal is to understand and improve the social aspects of mediated communication.

Mediated communication is any communication in which the participants communicate via some sort of medium, such as written letters, telephone calls, email, etc. This is in contrast to unmediated, face-to-face communication in which the participants are in direct contact with each other. In unmediated communication, social cues are communicated through words, tone of voice, gesture, clothing, facial expression, proximity, etc. These cues provide information about a person's age, race, social class, and gender, they reveal emotional state, and they help to choreograph the interaction. In mediated communication, some or most of these cues are absent, and other cues, nonexistent in the unmediated world, may be present. The social information that participants can assess about each other varies greatly from one medium to another. Participants might not know with whom they are speaking or how large is their audience - or they might have access to a detailed history of their partners' interactions or to the assessments others have made about them. They may be communicating in real time (synchronously) or over intervals ranging from seconds to days; the response to a message thus might be an immediate emotional reaction or a well-thought out reply.

The sociable media approach to evaluating media differs from the traditional, information theoretic approach. With the latter approach the key measurement of a medium is the amount of information, measured in bits, that a particular channel can carry and the goal is higher capacity and efficiency. The sociable approach is more subjective and context dependent. For example, given a sufficiently high bandwidth channel, one might think that videoconferencing, in which many thousands of bits are transmitted per second, would be clearly preferable to text interaction, a much lower bandwidth medium. Yet while more information is transmitted by video, it is not clear, from a sociable perspective, which is better. Is it important to know what the participants look like? Or is it preferable that their ages, race, weight, etc. not be known? Is the interaction the focus of everyone's attention, or is it a peripheral activity, one carried out while attending to other tasks?

The sociable perspective also helps us to understand how social information is encoded in a message. At first glance, the text of the message might appear to be its sole source of information. Yet there are other important social cues to found. They are in the style of writing – whether formal or informal, in standard English or in prose peppered with emoticons, acronyms and abbreviations. They are in the recipient list, for one can copy others on a message, invisibly as co-conspirators or openly as witnesses. They are in the timing of replies, whether response was immediate or days or weeks later. The study of sociable media involves the evaluation and interpretation of the social nuances and affordances of different media in different situations.

The roots of sociable media reach back about 4000 years. Although the earliest known clay tablets are administrative records, archeologists have found plaques bearing personal correspondence dating as far back as 2000 BC. Throughout most of this history, letters (i.e., messages written on physical objects which are conveyed from sender to receiver) have been the dominant form of sociable media. Letter writing has sustained friendship and initiated romances over great distances. Historical accounts of brides being courted across the Atlantic attest to the ability of this medium to convey an impression of the character,

personality and emotional intensity of the writer. Mediated spoken communication became possible only in the late 19th century with the invention of the telephone, but since then conversing at a distance has quickly become an indispensable part of daily social life. Visual images have long been an important, if infrequent, medium for social communication (Henry VIII married his fourth wife, Anne of Cleves, on the basis of Hans Holbein's portrait of her). The development of inexpensive film and cameras and more recently, the ability to easily send images electronically, are making transmitted images an increasingly common yet still evolving form of social communication.

The advent of computer-mediated communication has made possible many new forms of sociable media. The computer brings a great deal of design freedom, allowing many aspects of the medium, such as whether it is ephemeral or persistent, named or anonymous, to be intentionally designed, rather than being technologically determined. Email, online chats, newsgroups, simulation games, weblogs, virtual reality conferencing are but a few of the existing computer-based sociable media, and many more are yet to be invented.

Sociability is an essential part of human nature. We live and thrive in cooperative groups. Social interaction helps us form relationships and coalitions, evaluate status, discourage free-riders, and enforce local norms. Much of our conversation is social, either in topic (as when discussing other's actions) or form (as in the status messages encoded in tone of voice and grammar). Yet the importance of sociability is often unrecognized.   Information exchange is often assumed to the primary purpose of language and conversations in which no explicit knowledge is imparted are judged a waste of time. Yet in any conversation, no matter how seemingly pointless, the participants are exchanging social information, subtly encoded.

Communication technologies are not necessarily designed for sociability. They are often developed within the context of engineering and business, domains that prize efficiency and utility. Yet people, being highly social, quickly find social uses for any communication medium. The history of communication technologies illustrates both the commercial world's under-estimation of the importance of social communication and people's alacrity at adapting media for social purposes. The telephone was initially marketed as a business tool; it was several decades before its social use for residential customers was fully recognized as an essential component of the business.   The early plans for networked computers did not envision their social potential, but the system's early users developed email within two years of the initial connection. The web was initially conceived as an academic publishing tool, yet personal homepages with pictures, anecdotes, and links to one's friends appeared almost as soon as an accessible web browser was available. Today, there is growing awareness of the importance of the social uses of media and much more effort is being made to create deliberately sociable media.

Designing new sociable media involves understanding the features that affect how they can be used. There are many of these, but among the most important are rhythm, format, bandwidth, permanence and identification. Email, for example, is typically asynchronous, text-based, low-bandwidth, persistent, with a wide range in the participants' identifications. An online game, for comparison, might be synchronous, graphical, medium-bandwidth, ephemeral and anonymous.

Rhythm (asynchronous or synchronous): The rhythm of the medium – whether it is synchronous or asynchronous – describes how quickly messages are exchanged with it.

With synchronous media, the participants communicate at the same time. Face to face conversations are synchronous, as are phone calls, and some computer-based media such as chat. The participants must be available at the same time, providing a sense of co-presence: even if they are physically far from each other.

With asynchronous media, the participants communicate independently. Email and written letters are asynchronous. The time it takes to send a message ranges from seconds in the case of email, to a day to several weeks for letters (longer in the pre-air-transport past). Participants in an asynchronous discussion are able to compose their messages more carefully. They do not need to be available at the same time, though this also means they do not have the sense of presence that users of synchronous media have

The rhythm of a conversation – how quickly each participant responds, the length of each utterance or message, etc. – is itself expressive.   Responding to an email within a few seconds conveys a different

message than waiting days or weeks to answer. Rhythm is also roughly correlated with formality, with asynchronous media often used more formally.

The speed at which a medium can convey a message affects the type of information that is exchanged and the communication style. As communication frequency increases, messages become more informal and intimate. This is true even within the same medium – rapidly exchanged papers notes are more informal than a letter with weeks of travel to its destination. Written letters, which at their fastest are still slower than computational media, are relatively formal, with conventional greetings and closings and a body with at least nominal content. Email is usually more informal, with features of both written and oral language; its users may omit greetings and sometimes send messages conversationally, in a series of rapid exchanges. Instant messages are very informal, with many features of oral communication, including a greater use of non-verbal expressions, such as emoticons (punctuation-like markings that indicate the emotional intent of the writer, e.g. :-(meaning sad or ;-) meaning winking, to indicate. that one was being humorous or ironic) and other representations of embodied action.

Format (text, voice, images, etc.): Messages can be sent in a variety of formats, including text, sounds, images, and programs. Some social information requires particular formats. To know what someone looks like requires an image, to see their gestures and expressions requires a moving image. One can create a list of participants using text, but to present their relationships in a more complex non-linear order requires graphics. A medium may translate the format of the message: a textual email that is ordinarily perceived visually, as written text, may be presented as spoken words by a text-to-speech synthesizer. Most of our experience with mediated communication focuses on the verbal, whether written or spoken. We are just beginning to explore the potential of communicating within graphical environments, to experiment with sending interactive experiences.

Bandwidth (from high to low): Bandwidth is the amount of information that a channel can convey. Low bandwidth media require sending relatively few bits per message and take less time to transmit, an especially important feature when using a slow connection. Text is low-bandwidth, while sound and video are high. The connection between the information bandwidth of the medium – how much information, in the mathematical sense, is sent – and the social bandwidth of the medium – how much social and expressive information is sent – is not simply linear. Text, which is very low bandwidth, can be a very expressive and effective form of communication. Going from voice only communication (i.e. the telephone) to image and voice (i.e. the videophone) greatly increases the number of bits conveyed, but does not necessarily make for a better social medium.

The bandwidth of network connections has been steadily increasing, but so has the size of the material people want to send. Compression is the process of making a message smaller, without losing important information. What is "important" may vary from application to application. For sociable media, maintaining the integrity of social cues is paramount. With video communication, for example, there may not be sufficient bandwidth to both send detailed images and to send them without delays. Experiments have shown that it is preferable to reduce image detail to maintain the timing of the sequences; this keeps the image will in sync with the voice and ensures that gestures and glances are seen as they are made, an important rhythm since the perceived timing of these expressive actions affects their meaning.

Permanence (persistent or ephemeral): Media can be persistent or ephemeral. Any physical medium is persistent, as are all asynchronous media, since they must be stored in some form. Other media can be made persistent – a phone call is normally ephemeral, but if it is recorded it is persistant.

Persistent conversations among multiple participants are a new phenomena which became feasible on a large scale only with the advent of the computer. In their various formulations (private mailing lists, public newsgroups, bulletin boards, etc.) they enable a large number of people, often initially strangers, to converse about almost any imaginable topic. They have become one of the most popular forms of online social interaction, and their role in reshaping society – in redefining how we establish social ties, where we gather information, how we form opinions – is still developing.

The permanence of a medium has important privacy implications. Upon delivery, an ephemeral message is gone, except in the participants' memory. It cannot be subsequently conveyed to others except by creating a new message telling about it. A persistent message, however, can be conveyed to others who were not privy to the original conversation. For many years, participants in online newsgroups (large asynchronous

online conversations) assumed that their discussions were ephemeral, for they disappeared from most servers after a few weeks. Yet these discussions had been archived and with the advent of web-based search engines, were made publicly available, along with the search tools to easily find all the posts ever made by an individual. The privacy issues here are not only the reading of postings by people other than the intended audience, but also the reading of them outside of their original context.

Identity (named, pseudonymous, anonymous).

Identity is at the core of all social interactions. We care about how others perceive us and devote considerable energy to conveying our own identity. Our perception of other's identity is an essential context for understanding their words and actions, for knowing what sort of behavior to expect from them and how to act towards them, and to understand what their role in our lives might be.

Identity plays a key role in virtual communities. In communication, which is the primary activity, knowing the identity of those with whom you communicate is essential for understanding and evaluating an interaction. Yet in the disembodied world of the virtual community, identity is also ambiguous. Many of the basic cues about personality and social role we are accustomed to in the physical world are absent. Some claim that the ability to establish an independent and disembodied identity is one of the most valuable aspects of on-line culture - that it allows people to explore roles and relationships that would otherwise be closed to them. Others claim that anonymity encourages irresponsible, hostile behavior - and that an anonymous community is an oxymoron.

The relationship between an on-line persona and a physical self is handled differently in various on-line environments, often because of interface decisions built into the system technology. Some systems make it impossible to trace a participant's real-life name; others try to ensure that messages are ascribed to their author's physical being - and the cultures that evolve are strikingly different.

In the physical world, we typically know something about the identity of a person with whom we are speaking. Even if we do not know their name, we can detect cues about their age, race, gender, affiliations, etc. in their clothing, voice and face. Online, this is not necessarily so. Participants in a online forum may be anonymous, their real names unknown, with no tie even to an online persona. They may pseudonymous, their real names unknown, but with a persistent record of their actions available. Or they may be named, their real names and identity known and verified. Anonymous communication allows people to talk freely about topics that they might otherwise be afraid to discuss, such as personal health issues or political criticism. Yet anonymity also allows disruptive and anti-social behavior to flourish. Pseudonymous communication, in which a person participates in online interactions using a persistent persona, allows for the establishment of reputation. To the extent that the person behind the persona values this reputation, it encourages responsible behavior. Indeed, it has been posited that one of the benefits of the online world is the possibility of creating communities in which the participants do not know each other's race, age or gender, and where identity is instead primarily based on one's history of behavior.

People now have numerous ways to communicate, including traditional letters, telephone calls, email, instant messaging and video-conferencing. They can participate in mediated games or search online for tennis partners, childcare providers and potential lifetime mates. Communication media are becoming ubiquitous, meaning they exist everywhere. We are rapidly approaching the time when, for millions of people, mediated sociability will be with them at all times, no matter where they are or what they are doing. The challenge for the field of sociable media is not simply to invent ever newer ways of communicating, but also to understand the social implications of ubiquitous and omnipresent communication media..

One significant change is the increasing emphasis on subjective and social concepts of place and distance, over the purely physical. Communication media are by definition technologies that allow people to communicate between distant locations – thus, they have always played a role in reducing the significance of physical distance. More recent technologies have accelerated this reduction, both in quantity, by making communication faster across ever greater distances, and in quality, by transmitting immediate presence through synchronous media. While a synchronous media such as letters transmit information from one place to a distant one, synchronous media create a virtual space, a shared non-physical environment in which the interaction occurs. We have seen this for many years with the telephone and the effect has become more apparent with the advent of mobile phones. Mobile phone users may move through a physical space but their attention and reactions are occurring in the virtual space of their conversation. A new

phenomenon is the sending of presence information without an accompanying message. There are systems that show when their users are logged in, how long they have been idle. Users of these systems receive a continuous flow of information about their distant friends, colleagues, or family members, shifting the center of awareness from the physical to the mediated world.

Spatial metaphors have always been part of our concepts of relationship – we have close friends, distant relatives. Social technologies are making this metaphor literal, as we move towards a time the concepts of place and distance will be increasingly based on personal relationships rather than physical location. Are you alone when chatting online from an empty apartment? When none of your friends are online, though you are in a crowded café? What happens to local ties as associations are increasingly formed based on affinity and common interests, rather than physical proximity? The implications of this change, both for the social and physical realm, are many.

Another significant change is the number of people we with whom we keep in contact. It is much less costly (in money, time and effort) to maintain personal ties via email than by paying personal visits. One challenge this brings to the field of sociable media is to build tools to help people manage this complex personal social world. Not only are we in touch with more people, but we have fewer cues with which to remember them. When we meet someone in the physical world, we see their face and hear their voice, we see them within a spatial context that helps provide us with a well-defined memory. Online, we may see little of the person (perhaps just an email address) , and encounter them in a social setting (such as a discussion board) with few if any visual memory cues. Designers of new social technologies are developing ways to help people keep track of these relationships by creating visualizations of social information, such as a person's interaction history, the contents of one's email archive, the network of connections in a virtual community, etc.

The network's ability to connect us with more and more people may be infinite, but our attention is not. Are these large numbers of weaker ties replacing or supplementing stronger ties?   Are we replacing stronger ties with a greater number of weaker ties? If the former, social theories suggest that we may be moving to a world where people have greater access to ideas, information, and opportunists, due to the wider range of people with whom they are in contact, but also to a world where social support is weaker and people's sense of responsibility for each other is diminished.   The goal for the observer of sociable media is to understand the implications of media as they are built; for the designer, it is understand what sort of world he or she hopes to foster, to learn from these observations and create new technologies that lead to this goal.