AgoraPhone

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Submitted to the Program in Media Arts and Sciences,
School of Architecture and Planning,
in partial fulfillment of the requirements for the degree of
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Abstract

AgoraPhone is a communications sculpture combining private and public social mores. Utilizing the existing telephone infrastructure, AgoraPhone allows people to call from any phone anywhere and engage the installation's physical public space. This thesis decribes the process of designing, making, and installing the project, as well as some observations of AgoraPhone in use. The work is in relation to the culture's contemporary zeitgeist that reflects a society of people who on the one hand highly value a private lifestyle, and on the other hand produce and subscribe to a media culture which is characterized by extreme sacrifice of privacy; the push-pull relationship of private and public life establishes the setting for AgoraPhone.

---

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INTRODUCTION

Agora, in the Golden Age of Greece, referred to a large open public space where citizens assembled to discuss, debate and interact in political, civic, religious, philosophical, social and commercial engagements as a vital part of daily life. It was the center of every Greek city, and the focal point of Greek city life. *Phone* is also Greek, and means sound or voice. With the common use of "phone" today, one assumes the implicit tele- prefix, meaning afar or at or to a distance. AgoraPhone combines the need for public social dialogue with the most used element of remote interpersonal exchange; it is a public place for exchange of voice and sound both nearby and remote. This work utilizes the telephone system infrastructure, and intervenes in public space to facilitate open connections between people.

Our increasingly technologically mediated communication scenarios, and our ever more augmented presentations of self in contemporary society, influence the structure and actions of the public, of our society. It is not simply our privilege, but also our responsibility to continually interrogate the systems we design to live (and speak) through. As technically mediated modes of communication have become more common, what other changes accompany them? When online social mores, anonymity, and ease of entry are mixed in with public, face-to-face social mores of behavior, what will we recognize as our favored communicative forms: Which modalities will be kept, which will be left, which will be found?

There has been a lot of work towards making online worlds more like the real world – about putting more convincingly real-world characteristics into online social interactions. [4, 15] With this project I am attempting the reverse in a way – to bring online sociability into physical public spaces.

This thesis project involves investigating the architecture of current public places, both physical and virtual, in preparation for designing the placement, structure, and interaction design of AgoraPhone. A central aim of AgoraPhone is to make present and accessible connections between

people. The project should enable and encourage citizens to easily respond, and be responsible to each other in physical public places. One of the initial motivating goals of this project is to catalyze dialogue in public areas where many people are present but often seem to simply pass by each other indifferently. Another is to investigate what it means to individuals to have their own personal voice extended in the certain ways AgoraPhone facilitates. Observations and inquiries into the use of the project will begin to reveal what happens when a voice of anyone calling from anywhere is inserted into a public place. How is this experienced by the caller and by those present in the space? Who will use it? For what purposes, needs, or desires will it be brought into play? Will it make present or inspire any connections or discoveries or revelations within or between people?

This document first presents the project, AgoraPhone, explaining both the functionality and the design value. Next, this thesis presents glimpses into the history of public versus private space, of telecommunications, of social developments accompanying technology design, and of a few relevant public art projects. Then, returning to AgoraPhone, the development and installation of the project are discussed. Finally, AgoraPhone is evaluated based on technical success and, most importantly, on social presence and effects, and ideas for future steps are offered.

PROJECT DESCRIPTION

AgoraPhone is a free, uncensored, and widely accessible communication space. The word "agora" is a Greek word referring to an open air gathering place where citizens come together to discuss critical, as well as not-so-critical, social issues. The public installation of AgoraPhone consists of the dissemination of a phone number that can be dialed from anywhere, and a communications sculpture as an element of public urban architecture. The first AgoraPhone sculpture is installed next to a park on the M.I.T. campus along a pathway through which thousands of people pass everyday. From any touch-tone phone anywhere, people can call AgoraPhone's number and be connected, via the AgoraPhone sculpture, to the public place (in this case the pathway at M.I.T.). Upon calling, but before being connected directly through to the public, one is greeted by a recorded voice explaining a little bit about the project. This greeting has been designed to set a comfortable tone encouraging openness while letting the caller learn about AgoraPhone and how to use the features. The caller is informed that the AgoraPhone project preserves anonymity in that it performs no caller ID and records no logs. The option of voice masking is offered -- to "try on" one's altered voice before speaking out loud through AgoraPhone, the caller simply presses "4", talks for a few seconds, and then listens to their voice played back. Whenever the caller is ready, the connection through to converse in the public space is made by pressing the "#" key on the caller's touch-tone phone. A full duplex audio link is opened between the caller and the people and happenings in the remote public site of the AgoraPhone sculpture installation.

The project is designed to offer people a way to speak about anything. The inviting design and anonymity for the caller help offer the unpredictable interactions with as little intimidation as possible to either end. Social mores while conversing through mediated communication technologies are often observed to be looser than in face-to-face scenarios -- it is often easier to approach a crowd of people online and speak one's thoughts out than to do so in physical situations. [24] Also, both in online and physical situations, once a topic is breeched it is easier to join in. My speculative thoughts and desires about this project revolve around the possibilities that may arise when online social constructs are imported into physical public places. Here is a list of a few of these hopes.: The caller in this project, who is the one

most protected by anonymity, may begin discussions that will extend into public forums just beginning at the site of AgoraPhone. She/he may speak freely about things as casual as the weather or as critical as socially suppressed issues. People present at the sculpture may perceive the caller without acculturated molds of expectation, and therefore be able to realize otherwise forgotten, unnoticed, or unacknowledged thoughts, feelings, and ideas. People in the public place may feel encouraged to talk with the caller and with each other at the site of the sculpture about anything including otherwise overlooked or uncomfortable topics because now to do so seems justified and cosseted in the form of play of sorts, with the sculpture offering an enabling pretext. The caller may assume the position of mediator of a heated conversation at the site of the sculpture, utilizing the freedom provided by anonymity to effectively bring about active consideration of all sides of a topic. People may call just for the experience of projecting themselves into a space, without any desire for a reciprocal exchange. Some may use the installation as a vehicle for creating a spontaneous cacophony of sounds.

HYPOTHESIS

These are my hypotheses with which I began this project. Please see section 9 of this thesis to find out what actually happened.

Bringing the privacy and anonymity of remote telephone calling into a physical public place will alter both the feel of the place and the ways in which people interact with each other. The presence of AgoraPhone will occasion individuals and groups to express in ways and on issues that they otherwise may never have approached.

Foreseen are four main categories of who and what the project may impact -- the caller, the called, the space, and society.

HYPOTHESES FOR THE CALLER

Through publicizing the project and making the phone number accessible, many different people will be invited to call AgoraPhone.

Some people will call out of curiosity -- to find out what AgoraPhone is. People will call to talk about nothing in particular - maybe how they feel today, the weather, or what their goofy dog did. Some will call to utilize the anonymity of AgoraPhone to say critical things they are aching to say but have been afraid to. Others will use the system to be silly or socially deviant. Some will call from nearby while spying on the people at the sculpture. Some people will call because they are concerned about the state of the world, the proliferation of bombing, and because they want to talk to people in the city about what concerns them. Some people will call to entertain -- tele-present street performers. Some will call seeking advice, understanding, criticism or sympathy. People will call for all kinds of reasons. The simple interface, the voice masking options, and the supportive sounding voice recording that greets callers will, by design, encourage all sorts of people to ease into interaction through AgoraPhone without intimidation, to feel as free as possible, to vocalize without restraint.

Callers will feel little intimidation to speak out and will even reveal personality traits that they would not be comfortable enough to portray in

face-to-face encounters. AgoraPhone may even facilitate emotional processing by individuals by providing an easy way to say something otherwise hard to say, thus establishing an opening up, a release, and communication. Callers will experience less fear of retaliation, of being judged or reprimanded by the others present, because they speak anonymously from someplace physically elsewhere. Public disclosure of private information may open dialogues around topics otherwise private or dangerous. Individuals may take steps towards dealing with personal situations while simultaneously offering public citizens voices articulating broadly pertinent issues.

HYPOTHESES FOR THOSE WHO ARE CALLED

People near AgoraPhone will feel less intimidated in responding to a remote caller than they would in responding to a person actually standing in the square talking out to whomever walks by. People may interact and begin to feel compassion through the mediated system towards people in situations on the other side. Small groups may gather at the site of the installation. Sometimes these caller and public gatherings will last more than a few seconds of curiosity. People may tell jokes and entertain. People may simply chat about nothing very crucial. People may have heated arguments. People may meet and fall in love. People may even consciously notice some differences in their own behavior while enjoying the new form of public dialog.

People present at the site of the tele-presence sculpture will be called upon to be responsive towards others. Unlike helping a stranger on the street, which has many social and safety commitments and concerns which often keep people from feeling comfortable doing so, responding to a remote person through a sculptural proxy will be easier and therefore will likely happen. Simultaneously to helping the remote caller, they may feel encouraged and supported by the caller to talk about issues brought up which they too may have been wishing to deal with.

The caller may assume a privileged position, or may be regarded as a special participant by the people gathered at the sculpture due to the anonymity and special communicative form the caller comes with. A caller utilizing the anonymity and freedom of remote interaction may openly mediate a charged conversation among many people gathered at the site of the installation. The people gathered may also decide to ignore the caller if the caller does not interest them, and easily turn away from the sculpture until a new caller arrives. People may approach, talk into, and hang out waiting by the sculpture for a someone to call through.

HYPOTHESES FOR THE SITE OF THE PHYSICAL INSTALLATION

With the installation of AgoraPhone, the atmosphere or tone of the site and the activity in the area will noticeably change. More pause will occur, making the space a place. People will be more likely to talk with each other, even when not adjacent to AgoraPhone.

Conversations among people physically present at the site may continue long after a particular catalyzing call has ended. In fact, when a new caller arrives they may find a conversation already taking place at the site. In such an instance, the caller will most likely be asked questions on the topic and thereby integrated into the conversation, unless the remote newcomer actively dissuades the discussion in favor of a new one they bring. This type of casual commonplace encounter behavior between the callers and the people physically in the space is likely to occur with notable frequency only after the installation has been integrated into daily life.

HYPOTHESIS FOR SOCIETY IN GENERAL

As AgoraPhone adapts its environment, the public space will potentially become more vital. Casual conversation will be more easily realized. People in the public space will be more likely to talk with each other face-to-face, as well as with the callers of AgoraPhone. Private issues may even become less alienating. If AgoraPhones could be installed everywhere, after a few years, eventually, AgoraPhones may not be needed. People will have redeveloped ease of interacting with each other in the many public spaces as freely as if through the communication sculpture. In this sense, AgoraPhone offers communication prosthesis as social design. I am aware that these are grandiose suggestions that cannot be realized in the course of a six-month thesis project, and though I do honestly believe that this project over ten years could significantly impact society, a lot of propaganda and providence would likely be essential in order to manipulate its adoption in all of the above ways. But, hey.

In actuality, the way AgoraPhone is taken up by the MIT community will likely involve many hacks and pranks. I do think that it will cause a bit of a stir on campus and a bit of curiosity off campus to the extent that the advertisements reach off campus. People will call and small social effects will occur. For a few people, calling in may become a part of their daily lives. For people who are employed nearby, stopping by the sculpture may be a way to take a break from the drudgery of work. Groups of friends my use it as a social space, either gathering at the sculpture to talk with the callers who come through, or calling together from a shared party line. People may simply watch and listen to others using AgoraPhone. In fact this passive behavior may even be the most common, as consumer culture is after all quite engrained – watching only, as if reality TV. Some people will ignore or actively avoid AgoraPhone. Perhaps it will frighten them. Whatever the effects turn out to be, they will be fascinating to observe.

PROJECT CONTRIBUTIONS

"How could architects avoid seeing architecture and planning as the faithful product of dominant society, viewing their craft, on the contrary, as a catalyst for change? Could architects reverse the proposition and, instead of serving a conservative society that acted upon our cities, have the city itself act upon society?...Could space be made a peaceful instrument of social transformation...?" –Bernard Tschumi

AgoraPhone is a means of developing the relationships between individuals and society by generating a new modality, situation, and instrument.

This is an art and design thesis focusing on physical structure and physical and audio space, place, and interface, while building upon existing telephony technology. Custom software for the project has been designed and implemented. Following initial prototype studies, a final physical functioning tele-presence sculpture has been designed, built, advertised, and installed publicly.

TECHNOLOGICAL

Technologically, this project offers an easy and accessible way for people to engage in vital dialogues with full open audio in public places. Remote access via a touchtone phone offers a meaningful audio space with the simple interface of a touchtone phone keypad and one's own hearing and speaking. Anonymity between the remote caller and people in the public place is provided. This project involves the design and building of custom audio and sensor hardware for the tele-presence sculpture, custom C++ software, and understanding and utilizing the existing telephony infrastructure in order to make the project available to anyone with access to a telephone.

CRITICAL

This project excites the space between the push-pull of private versus public. It calls attention to the significant social impact of the design and cultural adoption of mediated communication tools and the concurrent shifts in conceptions of social space, public place, and community investment. It interrogates the structure and use of public space and the learned social mores therein.

Telephones have come to be accepted as neutral tools of communication. But nothing is neutral, not even my hermaphroditic cat. Telephones were promoted as efficient business communication tools, but turned out to be much more influential as (semi-)private social space makers. The social effects are far ranging. In addition to first hand effects between people who have been participating in private calls in the middle of public, business, or familial places, the secondary effects of these situations on the other people present in those spaces are also far from imperceptible, and both levels are worth thinking about.

Telephones in public spaces have gone through interesting levels of private-in-public installation scenarios. Original telephone booths were completely private, with curtains and a seat inside.[1] Most recently we witness people on cell phones everywhere, engaged in intense private conversations, often forgetting that they are also in a shared physical space with other people. The disregard of others in these situations is sometimes astonishing, as when I tried to get the attention of the neighbor in a shared yard after the one-year-old I was babysitting accidentally shut the back door, locking me out of the house and locking herself alone in the house (not too safe for a one-year-old). The neighbor was walking about talking on his cell phone. I actually wanted to borrow his phone. But he was too attentive to his conversation to pay attention, even though he looked straight at me, to the fact that I was desperately asking for a moment of his time, immediately! Anyway, the toddler was fine and I was soon through a window and back inside. If this man had not been tele-porting himself elsewhere I know he would have helped. What is it about being engaged in a mediated experience that it can take precedence over a physical space call?

Is it possible to take advantage of some effects of phones in public for alternative uses -- to bring issues into public dialogue, for example?

AgoraPhone attempts to break boundaries in public, among many or internal to one, as a means to open dialogs, to allow individuals to insert themselves as they choose, to facilitate play, to make space and place.

SOCIAL

AgoraPhone functions to connect people, to bridge, to manifest social connections in a public space and between remote places. Some other technologies could be viewed in this way. The train, a technology coming into public use in an earlier era, changed social contact patterns most immediately by bringing together complete strangers "for the space of a

journey," and also by bringing strangers together in remote places of employment, shopping, and socializing. [24] It turned out not to be simply a means of fast travel. By both supplying a social space within its own stations and trains, and by shortening the virtual distance between remote areas, the railroad proved to be a profound influence on society and between otherwise unconnected people.

There are different mores in mediated public spaces than in physical spaces. The telephone, the radio, television, and computer-based communication technologies such as online chatrooms, email, newsgroups, and electronic messaging have each brought about whole new ranges of social behavior. They have both widened the social range of people and places, and, particularly among the latest computer-mediated social extension tools, have facilitated new freedoms in communication. [24] With this project I am bringing the different mores of mediated spaces to physical public spaces. AgoraPhone functions to connect people, to bridge, to manifest social connections in a public space and between remote places.

A caller through AgoraPhone is able to participate in public while remaining as intensely private as they choose. This is the most public a person in complete privacy has ever been able to be.

PROSTHETIC

AgoraPhone shortens the social distance between people, and by design invites communication. It is intended as an easily incorporated social organ of sorts, a social prosthesis.

The regular telephone's greatest impact is as a social prosthesis in a similar manner -- it extends voice and hearing, and thereby enables attention and social contact beyond physical proximity. Ties are kept strong between remote people and casual encounters are developed into deep relationships via the telephone. The telephone reduces isolation and even reinforces social groups, such as teenage cliques. Civil and personal emergency hotlines came about as an organized use and service. Most of the ways telephones are used were not foreseen.

The telephone also has had a few disruptive consequences not intentionally designed into it. Side effects occurring after inception include invasion of privacy by line eavesdroppers and by telemarketers, disruptions of private moments by sudden telephone calls, prank calling as entertainment, and, most recently, annoyances in public gatherings by people's conversations on cell phones and their related lack of awareness and responsibilty in their immediate physical surroundings.

Not all technologies in social spaces work to the benefit of the people in those spaces. One of the most dramatic and widespread of these is the prosthetic remote eye of surveillance cameras, which isolate and act upon people in spaces without their cooperation, consent, or sometimes awareness. AgoraPhone combines advantages of the telephone, online communication, and public space, and tries to make specific allowances to

encourage open community engagement and balanced mutual benefit between the caller and those called.

The sculpture is big, bright, and periscope-ear-speaker shaped, visually announcing its presence and purpose. The caller's sounds are heard by those nearby just as well as the voices of those talking with the caller, so the one-sided disengaged effect of cell phone conversations in shared public areas is avoided. The physical and aural interface of the sculpture is wide enough that anyone within hearing range can join in the interaction. Even a crowd can gather and participate together at the site, with everyone hearing and being heard. The people in the physical space have all the freedoms of anyone in an open public place. However, at the same time, they are more exposed than the callers are in that their location is known to be at the sculpture and in that they can be seen from within the public area or from nearby office windows. While designing this project I had special sympathy for callers who may want to talk about something they are otherwise afraid to bring up, and so I made special efforts to be sure that their experience was comfortable and non-threatening or vulnerable. For the public side I had more in mind people receiving callers, listening and responding and thereby being given an excuse to talk about things, and thus incorporating the benefit of the shared public space via the physical exposure of these exchanges as they begin opening otherwise hushed topics. These interests, of course, contributed to the design of the interaction structure. Specifically, the caller is able to maintain complete anonymity, while the people receiving the callers have no special protection against physical exposure. AgoraPhone is intended to be a two-way communication invoking social prosthesis. It will be interesting to see if it is used in a more imbalanced way.

BACKGROUND

AgoraPhone is a project concerned with combining private and public expressions and mores. A brief look at some examples in history of where the push-pull relationship of private and public seems salient informs this thesis. Considering the decline of city squares as the vibrant community centers they were designed to be, and the rise of the major network talk shows and reality TV programs as the place to go for learning and thinking about the personal matters of today, this culture's contemporary zeitgeist may seem to reflect a society of people who on the one hand highly value a private lifestyle and on the other hand produce and massively subscribe to media programs (parts of culture) that are characterized by extreme forfeiting of privacy. Technological adoptions can substantially impact social modes. Radio, telephone, and computer-mediated communication are three broad examples mentioned in this section. Some art movements and projects that are related to, and help position, AgoraPhone, will also be discussed.

VANISHING PUBLIC ENGAGEMENT IN THE CITY SQUARE

The urban public square was once an essential nexus of daily social and vital political life. The forms of engagement that these places hosted seem, in some respects, to be at least temporarily outmoded. This may help explain the inactive state of many contemporary public spaces. No place.

The dignified hub of everyday political and social life was once a public place in the city. Urban squares originated as public social gathering places where people came together. The agora of ancient Greece was the most essential component of a free polis, symbolic and functional as a place of freedom, community, and open democracy. City squares as gathering places for community information, dissemination, and discussion flourished throughout most parts of the world. In Europe, Mexico, and America people found part of their identity within the square of their own place of living, as they found strength and community in their local traditions through participation in the activities and social encounters of their square. City squares often had a stand from which public announcements were read. Besides a place to find what time it was and to gossip with neighbors, it

used to be that several times a day people would announce news and current events important for the members of the community. In 1776 for example, The Declaration of Independence was read in squares across the country and celebrations ensued. [28] The sense of political territory in some squares was strong enough to inspire the people and the architecture inscribing the place for generations to come. Union Square in New York City is a good example. In the last half of the nineteenth century, Union Square became a place of radical politics, as the site of workingmen demonstrations, the publication and distribution of the Daily Worker, and the scene of rallies, protests, and confrontations. The activity of the square was a tangible centering place for groups of people and the part of the city they constructed, with the buildings and places around the square changing and becoming resonant with the spirit of the square. [28]

AgoraPhone intends to help catalyze new ways for people to approach each other and shared public spaces. Perhaps AgoraPhone can serve as the new public stand to bring forth people's possibilities. AgoraPhone is significantly different than the podium or stage from which orators and everyday citizens once spoke to the people in the past. With AgoraPhone, the speaker is able to talk from a remote location, from anywhere the speaker chooses. This is a quite calculated difference. By importing certain aspects of media technology (remote participation, anonymity) into the scenarios while preserving voice and hearing, this project attempts to promote absolute freedom of expression in a mode most appropriate for today's every person. The reasons this mode may be most appropriate will be discussed throughout this section.

As American city planning became more gridlike in the twentieth century, with the private architectural footprints of companies squeezing the space left for things like squares into scarcity, people simultaneously tended to want parks to escape from the urban situation, rather than squares. Squares became rare.[28]

People have always enjoyed coming together, so how does/can/will this happen in contemporary life? Some parks and squares remain places for meeting friends and observing strangers. We learn a lot from just watching people in public places. But often the people in squares today are only passing through, as the spaces host no central activities to bring people together, to facilitate bridges between people. Many squares are left empty, or filled only by markets or occasional performances. As there is a performative aspect to AgoraPhone, hopefully it will be able to attract passers-by somewhat like street performances do. The special nature of remote interaction will hopefully result in public ability to express, to engage with others, and to catalyze a transformation of the public space.

THE RISE OF THE PRIVATE

The rise of the private realm shapes this country, with our malls and gated communities, big private cars, big private yards and suburban dreams of disengagement. Public parks and squares are not the community centers they used to be. We do not even need to talk with people to feel engaged.

We have TV. We have surveillance cameras. We have psychoanalysis and the private lives of politicians to focus our centers of attention. We are all alone together.

PERSONAL ANALYSIS

In the West around the turn of the century, Sigmund Freud, both a product and a producer of his time, rose to popularity as his work on psychoanalysis received a lot of attention. *Civilization and Its Discontents* was a best seller. The rise of private information as a topic of discussion was something of a notable shift in society. In the 1800's it was common to try to completely hide inner feelings because to show any personal signs was to be vulnerable.

The culturally influential practice of psychoanalysis plays a role in many of the topics upcoming in this thesis. The facilitated release and ability to free associate that a therapist provides is not totally separate from the AgoraPhone project's attempts to facilitate uninhibited expression by maintaining secure privacy for the caller's self while the caller actually talks with another or others.

Freud found that "civilization" greatly contributes to the spectacular maneuvers of an individual's unconscious. [10,18] Through the exploitation of labor people are "repressed." Through the subscription to acculturated values and perceptions and ways of being and expressing and thinking and feeling, people are repressed. Thus the greatest revelation of psychoanalysis to society is potentially the observation and presentation of the psychoses potentially induced by the restrictive and contorted nature of society itself. However, psychoanalysis, in its pop culture presence, is markedly non-critical. In the West at least, the fashionable revelations and verbal confessionals function without the still dormant critical or revolutionary edge. Intense interest in consuming other people's private information can be viewed as social instances of high market demand, enormous profits are being won by media corporations.

What is discussed at the water cooler is not what happened iat the therapist's office this week, but rather it is intensely private information about other people, and not other people that are known first hand often, but rather other people seen on TV. I will say more in the next paragraphs.

CONTEMPORARY CULTURE: PRIVATE REVELATION IN PUBLIC SPACES

Across all levels of American society, from presidents to everyday people, the urge to tell all permeates. Personal confessionals are occurring not just in therapists offices and religious architectures, but also all over prime time television, political party platforms, and online chatrooms, to name just a few arenas.

MASS MEDIA PUBLIC PRIVACY -- REALITY TV

Donahue and Oprah are our early reality TV personalities, with guests and audience members revealing sensational personal stories. On today's MTV's Real World, the producers hope the cast will have as many personality clashes as possible for added excitement and higher ratings. The pop culture influence of psychoanalysis comes through in reality TV in intensely private confessional scenarios. These are real lives in contrived situations designed to be hyper-real -- more engaging and astounding than everyday situations. These televised programs are extremely popular. MTV's highest rating show ever is The Osbornes, a Real World style show set in the home of the rock star, Ozzy Osborne, and his eclectic family. Each of these shows focus incredible social gossip systems. I hear people every day (on the subway, at lab, in the supermarket, in yoga class) talking about people on television and their trials and tribulations and the scandals among them as if they are close personal friends or relatives. This gossip, even when about fictional characters based on real life, probably provides social training comparable to gossip about personal acquaintances. And since we are all protective of our own personal gossip material, perhaps this substitute material is in fact vital. Smalltalk and gossip are integral in socializing and keeping ties with others. [9]

In some ways current culture is very private, but then at the same time we have this bizarrely confessional media culture. I am interested in how and why media spaces are so wide open. What influences what will be perceived as private and what as public? Media seems to have the ability to put up a funny wall for people behind which they feel only a little, if any, inhibition. The most striking aspect of mediated televised revealings that is most consequential in thinking about AgoraPhone is the fact that people are willing to reveal remarkably personal things about themselves, through the wall of the media, that they have never revealed to anyone before. People act outrageously with the excuse of the medium, such as the cast of MTVs Real World. Also, mediated revealings from strangers are incredibly absorbing. They seem to be easier to hear and watch and talk about than if they were of people one knew personally.

Working with, or taking advantage of, the current cultural interest in public disclosure, AgoraPhone attempts to bring the two poles of public and private together, by putting mediated space elements into physical public places, to encourage general open engagement and access to dialogues on vital topics. Rather than putting people in one of the powerless positions of either consumer or consumed, AgoraPhone simply facilitates a two-way connection through which people can pass as little or as much personal information as they choose. In a sense AgoraPhone's service is essentially providing a focus around which the social (or asocial) demand can coalesce.

POLITICAL PSYCHOLOGY

Political discourse, once recognized as vital to the connectedness of urban citizens and central to the life of the city as lived in the squares, has come to include, or be overshadowed by, private discourse and intimate psychological concerns. Acculturated to believe that certain parts of one's own life are private and that one should be careful to keep them so,

Americans nevertheless want public figures, such as political heads, to be public figures in a literal sense – to divulge all private matters on the front page. In part, perhaps, as a protective move away from the idea of hiddenness of President Nixon, with his Pentagon Papers and the Watergate scandal, in the last twenty-five years there has been a demand for politicians to be more revealing of their selves, it seems. There was Jimmy Carter's famous Playboy Magazine November 1976 interview, and more recently, the Bill Clinton/Monica Lewinsky scandal was headline news for over a year. The United States president was impeached for personal life behavior. The American people really wanted to know if Monica Lewinsky's dress was dry-cleaned because of a possible semen stain. Teens to great-grandparents read the widely published transcripts of the depositions, start to finish. The public opinion reflects an insistence for personally revealed political figures. In 1999, during the presidential campaign of Al Gore, his wife Tipper Gore spoke publicly about her struggle overcoming depression. This, the campaign managers knew, would solicit support and trust from the American people towards the human nature of the candidate and his family. Personal issues are politically compelling.

Political figures are pressured to lead public private lives. People feel like they know something real about these people if they know their secrets. Being informed of private issues cast into public forums might even be considered a way to engage in society, in politics. And the politicians often reveal by choice, as long as they feel safe doing so. From pop culture and talk shows and from the highest ranking positions in our culture, the desire to tell all permeates every level of society.

ONLINE PRIVATE PUBLIC SITES

Online communities forming in usenet newsgroups, and online encounters occurring in chatrooms and MUDs, also reveal behaviors of personal private offerings in the protected space of mediated social exchange. The things that people feel free to talk openly about are just about all encompassing. There are support groups for everyone from people of transgender to people with chronic hives, from lonely lighthouse-keepers to origami fanatics. With the accessory of anonymity, people are able to play out characters that are as close to or as far from their day-to-day selves as they chose.[27] People learn, through these opportunities, to be multiple and fluid, to have identities that may not be packaged neatly, but are instead here and there and able to be brought together when needed. The unrestrictive aspects of online social encounters are inspirational to AgoraPhone. I want to offer people a way to be this free while manifesting in a physical space, being experienced by physical people in that space. I am testing the ability to carry mores of one type of space (vitual) into another (physical) to see what can develop and how people can make social and critical use of the combination.

LACK OF PUBLIC – LACK OF PUBLIC ABILITY/ EASE TO RESPOND

Urban experience can be predominantly of the paradox of isolation in the midst of visibility.

In unmediated daily life, people sometimes simply need to talk about an issue, and occasionally somebody even does so. In public. Often with great seriousness. These people are generally avoided. Perhaps a brave young person will respond, but most people pretend not to notice these vocal strangers, usually dismissed as madmen.

This morning a disheveled woman was standing on the sidewalk near Porter Square, crying out loud and looking quite wrecked. I did not stop to help her, or to even ask her if she was okay. I was in a hurry, I told myself, to get in to school and write this thesis. In truth I was not willing to take the risk of perhaps beginning a social contract I could not predict and from which I may have a hard time exiting. Though I felt the urge to help her I chose not to. I remained concerned and wanted her to be responded to by somebody. I kept looking back towards her in hopes that someone else had stopped to help her out. But everyone else was passing her also, pretending she was not there.

Had there been a safely mediated way through which to respond to this woman's obvious state of distress many people would have felt less intimidated by the social contract aspect. This is not to suggest that we should all walk around with mediation helmets covering our faces and projecting programmed appearances and voices, (although, as part of critical art practice such experiential performance strategies are important social projects,) but that we may be able to facilitate comfortable social exchanges through some minimal amount of mediation. And in none of the scenarios would the mediation be intended simply as an efficient means to the end goal of the momentary encounter, but as a way to announce the need for such mediation in the first place and to develop social skills. [34] As a tool for learning to feel comfortable talking with others, responding to distress calls in public spaces, trusting the public to respond to one's own inquiries, and feeling free to make any suggestions or sounds or noises in public that one feels driven to express, AgoraPhone might be a facilitative trainer.

DESIGNING PUBLIC/PRIVATE

Public opinions have complicated backbones. Media and capitalist market programs not only are products of people's choices, but help produce them. This is relevant to this thesis in that part of the goal of the project is to catalyze a little break against this spectacular culture by offering a place to unconventionally act in public.

ROLES OF DEVICES AND PRODUCTS

Architecture and things and conditionings such as television broadcasts are often mainly useful for reinforcing reification, popular consent, integration, same old same old. We do not need to go outside to hear what is happening in our world. We have TV. It has been set into our lives purportedly as an information beacon and a means for shared experiences. Is this its dominant

function, or is it a spectacularizing, homogenizing, pacifying billboard with an audience socialized into captivity?

SUBVERSIVE DEVICES

The emptying of the physical public domain is causing a saturation of personal devices, products, and intimate space demands. Can a strategy consisting of standard market tactics, slogan-language, and visual seduction be used to do the opposite, to reverse this? Can a program of advertising and proliferating personal devices, products, and intimate spaces that act subversively with the purpose of awakening the greater society be a successful inversion technique? People may adopt these inverted elements as they normally consume, because they recognize the familiarity of design in cultural language, and thus this could be an easy way to insert spaces for dissent. As the elements reveal themselves over time, the people recognize things never before realized, consciously or so gradually as to sneak in unnoticed.

DETOURNEMENT

Recognizing the imposing "blackmail of utility", through which people are suckered into subscribing to a lifestyle of products which are actually against them, the Situationist International, who will be discussed in an upcoming section, called for distancing from the urban spectacle and proposed "detournement" for the purpose of de-alienation. Detournement is a term coined by the Situationist International to refer to the act of decontextualizing elements or spaces or paths and recontextualizing them to be experienced as something not before noticed. The activity AgoraPhone is an element of is similar, to make new devices, "products," which carry over elements of commercial products and speak the language of capitalism as a means to get backstage and facilitate distanciation, dissent, reinterpretation, reinvention of lived experience.

USE-VALUE OF OBJECTS

Concepts of transitional objects and recent studies on object relations and human/robotic relations inform this thesis. [22,27,33] The power of objects (and likewise the power and use-value of the AgoraPhone sculpture) resides in our ability to employ objects as halfway-there places. We can invest into an object something from within ourselves without feeling loss of control of that investment. For example, we can talk to the ocean or hug a stuffed animal for comfort. Introducing media to these object relations, we can write our intimate thoughts and personal experiences into a diary, or a novel, or a song, and we can insert our voices into objects such as tape recorders or computers or telephones. The object, either with our imagination or with the media investment, can carry our input outwards, deliver it for us, without us experiencing our selves as being directly responsible. It can be much easier to talk to inanimate objects than to people sometimes. Talking through the object of the AgoraPhone sculpture is likewise an essential element of the engaged exchange. The design and placement of the object have enormous impact on the people using it. Among other requirements, the object must elicit trust so that people feel safe letting their voices travel into and through it.

I began the above thoughts in response to the psychoanalyst D. W. Winnicott's concepts of transitional objects and transitional phenomena. He theorized three areas of existence -- the psychic (or inner) reality, the external (or outer) reality, and the cultural life of the individual - the cultural life being the "play" between the individual's inner and outer reality. This cultural life is composed of transitional phenomena, and transitional objects and phenomena are considered absolutely necessary stepping-stones in human development. When ego development has been ruptured in any area, play in that area is not facilitated by the ego. [33] People in this predicament could make use of transitional objects, coaches, facilitators. AgoraPhone can be used this way for people developing a feeling of safety and freedom of speech.

ARCHITECTURE OF THE CITY, CITY SPACE

Religious, state, and corporate architectures used to link people to heaven, earth, and each other, through ideological systems of virtual and material structures. If contemporary Western society is becoming individualistic and in constant motion, then what architectures will link us now? Theaters? Gas stations? Public monuments? Pop stars? Networks? The links most useful for people today may be fundamentally different in requirements than past systems. Rather than an instrument of unification, what may be optimal for life and personal freedom now are discontinuities, chance encounters, possibilities, the ability to throw one's self out of one's self while retaining the ability to come back.

The design manifested by media and technology with regard to culture and society is much more significant than the aesthetic design that the media and technology exports. People dedicated their life work towards the assertion and demonstration that architecture and design can be a catalyst for change. [7,18,26,31] Urban elements act upon society and society acts upon urban elements -- another push-pull relationship that has immediate and long-term consequences. We are all designers. We are all contributing to the production of the world, or worlds. We choose elements and direct how these worlds become habitual or anti-stable. It is up to designers to make certain that they are not simply accepting and passively supporting dominant stagnant states, and it is up to everyone to utilize urban elements, architectures and spaces any way we can imagine as instruments of personal experience and social transformation. Notable artists, architects, and sociologists have been trying to awaken the public to this for the past century -- by detournement, by careful documentation of urban spaces, by the insertion of private into public, by interrogating public monuments, by literally calling on the public.

This thesis will only skim the surface and offer a few dips into the wide range of people and groups who have designed for civic engagement and awakening.

SITUATIONIST INTERNATIONAL

"The spectacle in general, as the concrete inversion of life, is the autonomous movement of the nonliving." - Guy DeBord

The Situationist International was a coalition of a several European avant-garde groups established in 1957. Its critique of modern society, numbness, and bureaucratic power informed their calls and guidelines for re-animating public life and the free mind and will of the individual. The rise of psychoanalysis, and the non-active critical potential of its findings, were incorporated into the writings and propositions of the SI. The spectacle they defined as "a social relation among people, mediated by images... everything that was directly lived has moved away into a representation." [7] In reaction against capitalism and the prescribed behaviors it installs in people, the SI called for conscious alterations via agitations in everyday life. They held as their main goal the encouragement of creative engagement with urban space. They authored texts, presented papers and talks, and organized performances in the streets to strongly criticize "the society of the spectacle" and reawaken the people. Fundamentally understanding the role of the material environment in inspiring and radically transforming experiences of living, they proposed ideas for architecture and methods of agitation. They were some of the inspiration leading up to the student revolts of May 1968 in France and elsewhere.

"The whole of urban planning can be understood only as a society's field of publicity-propaganda, i.e. as the organization of participation in something in which it is impossible to participate." [18] Renouncing modern urbanism as simply pure spectacular ideology -- capitalist domestication of life, made not with or for the people, but against them – Situationist International called for the construction of situations for creating "momentary ambiances" in order to build "passionate access" to life beyond the spectacle. AgoraPhone in part may echo their agenda intending to catalyze the liberation of thoughts, feelings, sounds, and energies trapped in automatic day-to-day disengaged living. [18]

Architecture must advance by taking emotionally moving situations, rather than emotionally moving forms, as the material it works with. And the experiments conducted with this material will lead to unknown forms. Psychogeographical research, 'the study of the exact laws and specific effects of the action of the geographical environment, consciously organized or not, on the emotions and behavior of individuals,' thus takes on a double meaning: active observations of present-day urban agglomerations and development of hypotheses on the structure of a situationist city [18]

Preceding AgoraPhone, their projects propose new forms of critical engagement, perhaps *play* in Winnicott's terminology. AgoraPhone also proposes a form of critical play to move beyond the spectacle of automatic procession, and also, in combination with interests in mediated boldness and transitional phenomena, it has as a goal the direct facilitation of transitional phenomena -- to train undeveloped unheard of experiences, as a temporary augmentation in a movement towards free individuals and society.

"The study of everyday life would be a completely absurd undertaking, unable even to grasp anything of its object, if this study was not explicitly for the purpose of transforming everyday life." –Guy DeBord, from a talk

presented in 1961 at a conference of the Group for Research on Everyday Life arranged by Henri LeFebvre in the Center of Sociological Studies in the CRNS. [17]

STREET LIFE PROJECT, WILLIAM H. WHYTE

The sociologist William H. Whyte studied American cities, especially New York, for the purpose of designing information for urban planners and architects. He believed in the city street as a place of civic engagement and chance encounters. His friend Paul Goldberger explains that Whyte believed that "the greatest lesson the city has to offer us is the idea that we are all in it together, for better or for worse, and we have to make it work." [31] Whyte began his Street Life Project in 1971 in New York focusing on people's use of urban spaces. The project extended to over a decade of work with teams of students.

Whyte observed that what attracts people most is other people. [32] People in conversations do not move out of pedestrian flow, but rather prefer to stay right smack in the middle of it. At first it baffled Whyte and his students -- why would people chose to remain in the main flow, blocking pedestrian traffic and being jostled by it. Then they had a revelation.

> "This does not seem to be a matter of inertia but of choice – instinctive, perhaps, but by no means illogical. In the center of the crowd you have the maximum choice – to break off, to continue – much as you have in the center of a cocktail party, itself a moving conversation growing ever denser and denser." [32]

Self-congestion leads to easy outs -- ease of exiting conversations as if swept up and carried away by a moving crowd if a person chooses to be. They also observed that people like to stand not only in pedestrian traffic, but near objects, such as flagpoles and statues. Following these observations, AgoraPhone stands along a pathway where many people are walking by. When a person stops to speak into AgoraPhone, they are positioned in the walkway, still in the path of people moving through the space. The intention of this location was to entice people to join AgoraPhone, to perhaps gather a crowd or at least to occasion a sort of hand-off to the next person or group of passers-by when those right in front of the AgoraPhone need to continue on the pathway (before they are late to class, for example). Perhaps AgoraPhone itself should be in the way of the pedestrian flow. Observations of the installation will address these and other aspects later in this thesis.

Whyte refers to "triangulation" as the process by which an external stimulus, object, person, or happening provides a link between people and draws them together, prompting strangers to talk with each other as though they were not strangers.

> "There are, say, two men standing at a street corner. A third man appears. He hoists a sign and begins a loud harangue on the single tax. This links the two men. Casually they exchange comments..." [32]

Sculpture, he observed, can have a strong influence on social behavior in public spaces, too. He cited the before and after studies of the Chase Manhattan plaza and the installation there of Dubuffet's *Four Trees*. These studies showed that the sculpture drew people to it, through it, under it, beside it, to touch it, and to talk about it. The sculpture overall "has had a beneficent impact on pedestrian activity." Alexander Calder's huge stabile at The Federal Plaza of Chicago was studied and reported to have had similar effects. Entertainers draw people together very well also, and it is not the quality of the performance, but the fact that it is there that is important, it seems. People gather around quickly when a performer emerges, and, Whyte noticed, many of them will spend as much time looking at each other as at the performer. These are moments of true recreation, of play, of transitional phenomena as Winnicott would see them.

Whyte observed people in urban spaces, and elements in spaces that have the triangulation effect, attempting to understand the social effects of places and architectures and urban elements, furniture, sculpture, and other people. By modelling the social effects, he proposed that we can find out how they can be anticipated, designed for, and planned for in spaces. This series of studies and observations constituting the Street Life Project would ultimately effect zoning laws in New York and elsewhere.

INFLUENCE OF TECHNOLOGICALLY MEDIATED COMMUNICATION

City architectures are able to guide our behaviors, and growing up physically interacting socially with others we are acculturated to behave in certain ways. Radio, telephone, television, internet, and other mediated online architectures and communication mediums are creating new social mores and phenomena between people.

RADIO

Bertolt Brecht is best known as a theater playwright and director who worked to activate his audience in the unfolding of the theater event, shocking them into experience rather than leaving them as passive consumers. His first work for the new medium of radio art was Der Lindberghflug (The Lindbergh Flight), presented in 1929 and broadcast over almost every station in Germany. He wanted to work with a theme of collective heroism and shift away from heroic individualism, and so changed the title later to Ozeanflug (Ocean Flight), and changed the single voice of Lindbergh to a chorus of airmen. The subtitle, "A Radio Learning Play for Boys and Girls," points to the fact that he conceived of it as a sort of interactive broadcast exercise -- a duet between the remote sounds coming through the speakers and a group of participating listeners -- but with a revolutionary intent. This revolutionary intent is relevant to my current thesis project. From a remote broadcast station the radio would play the environment -- the music, sound effects of water and motors, and some choruses. People participating listen to this one part, and, with their textual parts as the voices of the airmen, enter and speak the other parts at the right

moments. In this way the two sides work together. As in his theater work, Brecht bases this participatory experience on the expectation that by manifesting through themselves particular actions or sounds or attitudes or speeches people can be socially influenced. By expressing out loud the parts of the chorus of airmen, the boys and girls would actually learn to overcome fatigue and hardship. [17] Activating the audience in critical and moralizing exercises in order to break them out of passive listening and passive living. Likewise, a motivating initial goal of AgoraPhone is to design a means through which a person could let her/himself speak in ways and about issues that she/he is otherwise too afraid to speak though it would be beneficial for her/him if able to experience her/himself letting it out, expressing, presenting. [17, 33]

In his 1930 essay "Der Rundfunk als Kommunikatiosapparat" ("Radio as a Means of Communication"), Brecht calls for converting radio from a "distribution system" promoting and catering to dominant culture to a "communication system" connecting all people in a way that would open up public debate about social issues. [17]

Brecht's work is an early and landmark example of an artist using a media to design interactive social developmental experiences for people. I would like to find that the openings and experiences made possible by AgoraPhone facilitate growth in character and personal and interpersonal development and bravery in facing situations.

TELEPHONE

The telephone offers an extension of our voice. It is an extension of ourselves and it overlaps, blurs, and allows us to mix together. Over the telephone, people safely share ideas, opinions and reactions with one another, however heretical or unorthodox.

Like other "mediums," the telephone offers a special allure and freedom. Even when in the middle of something important, people will usually answer a ringing telephone. Is this the mysterious charm of the unknown? People ask and answer questions, and offer information, to strangers over the phone with less of a sense of vulnerability than in person.

The telephone contributed to the moving of discourse from public to private space. Telephone usage in place of written and public verbal expression has made imperceptible or hidden some vital information about life experience that could benefit people living in the world together. Now with AgoraPhone the telephone aids in moving dialogue back into open-air public space.

Figure 1 Alexander Graham Bell instructing Dom Pedro II, Emperor of Brazil, shortly after his arrival in 1876 to the Centennial Exhibit in Philadelphia, on the use of the Centennial phone receiver. It appears as though DomPedro's attention is to the phone rather than to Bell. [1]

Telephone design adaptations exist for most handicaps – blindness, deafness, paralysis, loss of larynx; but how about for fear of speaking, or for fear of responding to someone, or for feeling lonely and stuck in a city's indifference? [28]

In Paris years ago, before online chats or teen telephone party lines, the number hosted by the telephone company for people to call to find out the accurate current time had a side effect in the way it was set up that made it such that anyone who was listening to time could talk with the other people listening to time. As mentioned earlier, in some periods before this phone line situation the time of day used to be called out in city squares for the people. And also like in those city squares, chance encounters occurred. If someone was on the line listening to the time and another person called, they both would then be on the line together. Sometimes many people would end up on the line concurrently. They could talk to each other and eventually this caught on. People called on purpose to talk with the others. It thus was an early version of the telephone chat line, a way for social groups to talk freely with each other from each individual's remote private space.

There are also hotlines for many needs, and these are some of the most socially critical uses of the telephone to date. However, people sometimes do not feel that they have a crucial enough issue to justify calling - "He doesn't hit me that hard and he always feels bad about it and makes it up to me..." Some people choose not to call for fear of being identified or even just being asked to take steps that they are not ready to be confronted with. Also, when people do call and important issues are discussed, the dialogue is kept completely private, although if it could be shared safely it might be helpful to others in similar situations. An initial reason for making AgoraPhone is to ease the first step, to make possible the experience of talking about things otherwise kept inside. This first step may serve as a phase in preparation for calling an official organized hotline -- by offering people who need the extra safety of total anonymity and no expectations to just have a place to allow themselves to speak out loud about something, possibly to another person if someone happens to be there. This way, also, the issues will be made public nearby the installation at least, breaking silences, while the caller can disguise her voice and, along with other means, shield her identity.

Coincidentally, the first expression clearly heard across a telephone line was actually a call for help. Alexander Graham Bell remained seated in front of the new instrument being tested while Thomas A. Watson, his invention partner, went to the next room to listen for sounds transmitted through their in-house telephone wire to the receiving instrument. Having spilled a bottle of sulfuric acid (nearby for the batteries amplifying the signal on the line) all over his clothes, Bell instinctively picked up the instrument and Watson was astonished to hear clearly from the receiving instrument in the other room, "Mr. Watson, come here, I want you!" [28] This first use augured well for the embracing of the new vital form of connection.

In early demonstrations of the telephone around 1877, Bell and Watson would go to different locations and telephone each other. What ensued, from what began as conversations between the two, was often akin to a sort of public vaudeville show, with Watson at one end singing and carrying on(trombone solos were not rare) from the privacy of his apartment room, and Bell explaining the system to the audience at the other end, usually a rented public hall in Boston, Providence, or New York in which he suspended telephones from the ceiling. [28]

Even in these first transmissions and exchanges, the magic of the mediation to dissipate inhibitions was clear and was causing social revealing of Watson, and social currents, waves, and, with Watson's landlord in particular, upheavals. The phone booth was invented as a result of Bell and Watson's landlady complaining about the noise of Watson during these performances. Watson was immediately occasioned to make a tunnel of barrel hoops covered in blankets, a design much modified soon afterwards and over the years.

The open channels of the telephonic communications were used as early as 1881 in Europe and the United States as a proto-mass-medium distribution systems, piping news such as parliament proceedings, entertainment such as live lines from royal opera houses, and sermons. Telefon Hirmondo, for example, was in service from 1892 until 1925 as a sustained telephonic distribution system in Hungary. It offered news and foreign affairs, evening performances from theaters and opera houses, sports, and market reports. [19] Callers may decide to use AgoraPhone as a broadcast system, piping whatever they wish to pipe to their listeners.

Figure 2 Early portable phone service. One of the first mobile phones! [1]

COMPUTER MEDIATED COMMUNICATION

Communication technologies, even when designed for business and efficiency effects, have often more influential social system effects.[24] The social and organizational changes often include crossing social level borders and hierarchies, weakening social differences apparent in face-to-face scenarios. People who may be otherwise not heard can have a voice online. This ability of communications media to give equal opportunity to the myriad of personality types online is among its most vital aspects. It allows people to connect with each other in diverse forums to share thoughts, stories, jokes, fantasies, words of wisdom, fears, advice... , all without a sense of vulnerability like that which often accompanies intimate revealings in the physical world. While studying people using computer networks in social ways, Sproull and Kiesler observed some Chinese students in 1989 who were studying abroad. They were using computer bulletin boards and electronic mail to "share their fears, confusion, anger, and information about the suppression of dissent in their homeland." [24]

An interesting social aspect of asking questions online is that you do not need to know who to ask in order to post a question and receive answers. People seem to even be interested in building reputation, and this leads to quick and comprehensive replies to emails and newsgroup postings. This supports my idea of using something like AgoraPhone to ask for advice.

In mediated scenarios as well as in the physical realm, reading cues in situations is a guide to one's own behavior. People perceive online communication as ephemeral, even though it may be logged. AgoraPhone explicitly does not keep logs because to do so could intimidate people. "When people perceive communication to be ephemeral, the stakes of communication seem smaller. People feel less committed to what they say, less concerned about it, and less worried about the social reception they will get. [24]

In virtual communities, too, the wall of media somehow inspires us to be bizarrely confessional and revealing of intensely private things.

Joseph Weizenbaum, an MIT computer scientist who, in the sixties, wrote ELIZA, an interactive computer system that mimicked a Rogerian psychotherapist, found it disturbing that people described talking to ELIZA as involving and gratifying. He thought that people should know better than to talk to a computer. Perhaps part of what these people found so gratifying in talking with ELIZA is similar to what people find so satisfying about watching reality TV or talking online or talking anonymously in other mediated situations -- they were able to speak freely about any issue without the fear of being judged, reprimanded, or of acting inappropriately, because they were not in front of another person but only a machine. Honest self-disclosure may have been facilitated by the absence of the social pressure caused by the immediate physical presence of another human being. [30, 24]

SOCIALLY LOCATED ART PROJECTS RE-VITALIZING THE PUBLIC

Jonathan Crary has written about a similar issue to that central to Brecht and the Situationist International -- that spectacular culture isolates by evicting people from active effective participation, and thus disempowers. Many recent communications media related projects, rather than one-way spectacularizing, are attempting to offer a social space located media that is responsive and response evoking, in order to connect and empower people. [5].

Heath Bunting wrote down the phone numbers of a huge grid of public phones at a transportation terminal and gave out the numbers one at a time to each of his friends with the instruction to call, and talk with whomever answers, at a specified time on a specified day. All the phones rang together and a mass communication event ensued. [35]

Allen Bridge began the Apology Line in 1980 in New York City, testing the countries evolving culture of personal confession. He dispersed flyers around the city advertising the number for the free telephone confessional service through which people could call up and apologize for anything or confess sins real or imagined to an answering machine. These tapes were then used in installations, distributed as audio tapes, and later transcribed and published in Apology magazine for all to read and glean life information from. [2]

The artist Zoran Todorovic, in a project entitled "Noise," put up a video surveillance camera in public space for people to perform in front of, construct their own identity, propose whatever they choose, and this was then rebroadcast to wider remote audiences. [36]

Krzysztof Wodiczko's public projection onto the Bunker Hill Monument in 1999 is the most powerful public artwork I have ever witnessed. The Bunker Hill Memorial project presented about fifteen very personal tragic stories of the loss of loved ones in gang related violence and murders in Charlestown in Boston, Massachusetts. Wodiczko collaborated with the local residents. The stories were prerecorded for the installation while in private spaces where the people revealing felt safe. Then, through the transitional space of the reclaimed monument and with the bravery and permission of the people who shared stories, these recordings were projected onto the monument. The monument spoke, then, with the faces, hands and voices of these citizens. The people were thereby speaking to the town and for the town and the people, from their temporary embodiment of the monument, with bravery and honesty. The telling of these real stories of trauma and loss of loved ones to gang violence was in the face of, and interrogating, the "code of silence" under which no one is allowed to talk about and thereby reveal what happens in gang related deaths, thus protecting the gang members and leaving the loved ones angry, lost, and feeling alone and helpless. This collaborative project gave these people a voice while challenging the silence in the community that kept such stories from ever being discussed. [37]

MASKS, PUPPETS, TELE-ROBOTS

I would like to offer an analogy of masked actors, and then extend this to explain the critical cultural relevance of socially engaging tele-robots (robots controlled at a distance). The unpublic city and its inhabitants can be thought about in terms of masks. City squares, traffic patterns, and pedestrian flow are all preconceived nowadays. Zoom in and it becomes clear that the ways in which one is supposed to interact are planned and ordered as well, and people in public perform in conventional scenarios. All of this public convention may be experienced as the procession of a system of privatizing masks. We navigate spaces on this surface and are not likely to access what is beneath these masks except in private intimate situations. Intimacy is what occurs under and between outward projections of personae, or between what is one's mask and what is one's inner reality as is the case in transitional phenomena. The dominant neutrality of "public" interaction perhaps increases the need or desire for intimacy or privacy. So we become a new kind (social breed) of bi-polar — masked and trying to be naked at the same time. And because everyone is socialized into the same situation of being, we do not think to question our situation. That is elemental in the socially critical aspect of some of the projects described in this Background section, and of AgoraPhone.

AgoraPhone is a sort of mask in that a person speaks from behind and through its form, but it is backwards, designed specifically to allow easy opening of what is habitually masked between people. A tele-robot, a remote controlled robot [22], is able to be much more than a mimetic representative of a remote human proxy. Because it is not human, in fact, we do not place it into the standard conventions and we are able to perceive heretofore-unrecognized ideas in it. With remote physical and vocal presence in a public space, AgoraPhone is a remote puppet, in a broad sense of the word. The ability of puppets including tele-robots to present something revelatory and offer something more than simply teleporting the person or people driving them, is what makes them useful. In AgoraPhone, remote tele-presence is facilitated in a public installation with the hope that people will seize the opportunity to expand their voices, to speak to strangers, to enter conversations on topics unspoken in public until now, to catalyze a public dialogue, to make manifest connections with other people.

CHIT CHAT CLUB

My first project combining tele-robotics and the possibilities of mixed physical world and online world elements and social mores was Chit Chat Club. In the Sociable Media Group, Karrie Karahalios and I designed and built, with the able assistance of Derek Tang, a café that one could enter as one would any traditional café and socialize with the people present, or one could enter by coming to the site online, choosing facial elements, choosing a tele-robot seat in the physical café, and socializing with the people both physically in their own bodies in the café and others in tele-robotic bodies.

We were interested in the social possibilities this mixture would occasion. People felt free to express themselves through the interface, sometimes more so than in face-to-face. And people were very responsive to the tele-

robots in the physical space. The tele-robots were very friendly looking and very beautiful as objects and this surely aided in their welcome reception -- a reception that then of course automatically extends vicariously into the remote participant behind the robot's actions.

MOTIVATING GOALS

To offer a free, anonymous, safe, playful, easy, simple, widely accessible way for people to talk about anything they feel like talking about without fear of embarrassment, chastisement, or anything.

To open dialogs in public spaces where people are used to passing each other disconnected -- to facilitate, or in some cases to make possible, responsive attention among citizens(where citizens is defined broadly as all people).

These two main motivating goals combined could bring critical human issues into awareness and discussion through. Provocative citizens, remote callers, passers-by all sharing the public site with AgoraPhone and interacting with each other, may successfully open critical, conscious, social dialogues.

THE ABILITY TO SPEAK

Not telling *anyone* about *something* because to do so would be personally overwhelming or perhaps even dangerous. Quietly carrying a secret. Bottled up. Not because one wants to be alone with it, but because one has *no way* to tell it. Perhaps for fear of environmental retaliation, embarrassment, being ostracized by family or friends or colleagues, wrath of others, risk of being misunderstood leading to greater isolation, fear of causing someone else to be misunderstood... Many people in our culture are in this predicament. Victims of domestic violence, outcast children, "normal" people, addicts, people ending a relationship, outcast adults, the "familiar stranger" with whom you take the bus everyday but with whom you have never spoken a word, manic-depressives, postal workers, people living with disease, your sister-in-law... AgoraPhone was begun in part to offer a facilitative situation allowing the private *somethings* to be uttered, spoken, shared, put out into the public space of the city in which we live together, by the people harboring inner states of anything, anytime.

Saying one's problem out loud, hearing one's self telling the story with one's own voice, is often recognized as the first step to recovery. People

present in the social space may initially open up to remote strangers via this project, but then, with this assisted experience over time, feel able and interested to speak with each other in the place with less fear and with greater ease, with or without the tele-presence intervention.

Of course people will, and are encouraged to, use AgoraPhone as they desire -- perhaps to play, to be noisy, to be rude, to frighten, to entertain, to satisfy curiosities, to spy, to act up, to serenade, to recite one's personal manifesto... "Use" will remain open to interpretation, because making one's own interpretation of the project and approach to employing it is the best way for AgoraPhone to become part of daily life, incorporated creatively by the people who adopt it and use it, and look and listen out for it.

MEDIATED COMMUNICATION IN PUBLIC PLACES

We are increasingly augmented with machinic extensions. While mediated communication technologies have brought people at a distance "closer together," they have simultaneously brought people physically adjacent further apart. (I am certain the gentleman at the bus stop this morning did not intend to nearly poke out the eyes of other passengers-to-be with his umbrella – wildly gesturing and screaming into his cell phone, he was completely unconcerned with his neighbors, the space, the rain.) This disengagement is the result, at least partially, of design choices – urban design, architectural design, personal device design – manifesting as social design.

This project is in part calling into consideration the developments of mediated communication tools and the coincident shifts both in perceptions of what constitutes social space and the changes in the experience of physical public place. [8] The project uses telephone technology ironically in a sense, as it is trying to undo the socially disjunctive effects communications technologies may have influenced in physical shared spaces. Beginning by offering a publicly accessible way to respond to others without the intimidation of face-to-face contact, with the assistance of tele-presence, AgoraPhone is largely a jump-start, training people to become comfortable communicating with and responding to each other anywhere.

INITIAL RESEARCH QUESTIONS

I have organized this section into three broad categories in an attempt to make it easier for the reader, especially when correlating this section with the observations and evaluations offered in section 9. Do not take the categories too strictly, however, as there are no exact edges.

TECHNICAL / OPERATIONAL

The audio channel coming across the phone lines from the installation is the environment the caller relies upon to feel truly connected and to understand the interactions.

- What elements of an audiospace, accessible and to some extent controllable via a touchtone phone, will most completely give the caller and a sense of presence, awareness, and control.
- Historical evolution of sentiments such as friendship and love suggest that human relationships have been influenced[affected] by mediation technologies, including the telephone.[citation would be good here] How might AgoraPhone play into all of this?

Other initial considerations for the interface design include:

- What will provide the framing for people? What will be the situational cues letting people know how to use the project and interact?
- Proximity awareness – how will body posturing and proximity of people towards the remote caller via the physical installation be sensed, and how will this information be interpreted and communicated to the remote caller?
- Should people in physical place have hang-up-ability (if, for example, a harassing person calls through)?

SOCIAL / ARCHITECTURAL

People talk endlessly about making online worlds more like the real world – about putting more convincingly real-world characteristics into online

social interactions.[3,4,15,21] With this project I am attempting, in part, the opposite - to bring online sociability into physical social spaces.

- Which social mores survive, transfer, blend, and emerge through careful design, prototyping, test pilot installations, and the final installation?
- People will be able to speak for themselves without social action taken towards them as they are without the physical signifier of there own body or face or even voice as they project their sounds, possibly altered at will, through the AgoraPhone sculpture and software system. They are more "free" to say anything, make noise, articulate and inarticulate. Will they? Will noise be made? Noise as the utterings of non-conformity?

The project involves investigation into the social aspects of mediated communication combined with "face-to-face" communication, the perceived/performed self, and the possibilities offered by remote tele-robotic representatives of a real person.

- Which aspects of mediated communication can be incorporated into the design of the project in order to facilitate personally invested physically located communication?

Some media technology applications foster not only individual engagement, but also social gathering around what is being experienced by the person first hand interacting. Videogames are a good example. Friends and strangers gather and watch a player and are very engaged though they are so without actually performing in the interaction directly.

- Will AgoraPhone host both direct participants and an audience?
- If so, what will be the nature of this audience? Will they communicate with the others in their shared space, even if just with body gestures and facial expressions, but not communicate with the remote place? How will they describe the project?

New technologies, devices, urban fixtures, and public architectures, though designed with certain intentions in mind, are never actually realized until adopted and used by the people. Sometimes the uses are surprising to the designers.

- How will AgoraPhone be socially incorporated, or will it resist incorporation as it is in such a transient location with, in addition to the regulars, different people passing by every day.
- As in online newsgroups, will rude callers may get no response, and be discouraged from wasting their breath talking to no one listening, such as spammers in newsgroups.

FACILITATIVE / THERAPEUTIC

Some people are so used to communicating through mediation apparatuses that, given the option of mediated or face-to-face communication, they choose mediated. Some reasons I've heard include, "mediated contact is more polite as it is less intrusive," and, "it is easier to talk with someone about something that you feel self conscious about if you have a level of anonymity and if you can avoid the gaze of the person you are divulging your personal stories to."

- What elements of online communication do people tend to interpret as safe and encouraging, and can these elements be imported into a physical space?
- What social mores are custom in the most supportive online IRC channels, teen audio chat lines, CB radio channels, and online chat spaces?
- Can it be expected that these mores could be evoked in AgoraPhone?

Another central investigation is a study of how objects carry ideas - the way external objects and machines can become incorporated and experienced as accompanying, or even as additional parts of, a person.

- What is the role of tele-robots, robots, robotic artificial limbs, feedback, in the conception/perception of the self and of others?
- How will the very presence of a tele-presence sculpture alter the atmosphere of a place through the reactions of the people in the space?
- What characteristics of the machinic embodiment of a remote person connecting to a certain public sphere will maximize feelings of comfort in the person communicating, and simultaneously maximize tendencies toward respect and empathy for this person by the people communicating from the public site of this physical tele-presence sculpture?

A remote physical tele-presence sculpture could be designed to be experienced as accompanying the person speaking through it - by letting the machinic sculpture have some amount of voice and volition of its own, for example - or the tele-presence sculpture could be closer to a tele-robotic puppet, or even a simple non-moving object or even just an area of space.

- What remote machinic accompaniment or embodiment will serve the goals of fostering open empathic communication best?

Some of the discussions that will occur could be useful if archived and published or rebroadcast providing other means of access. However, surveillance tends to make people uneasy.

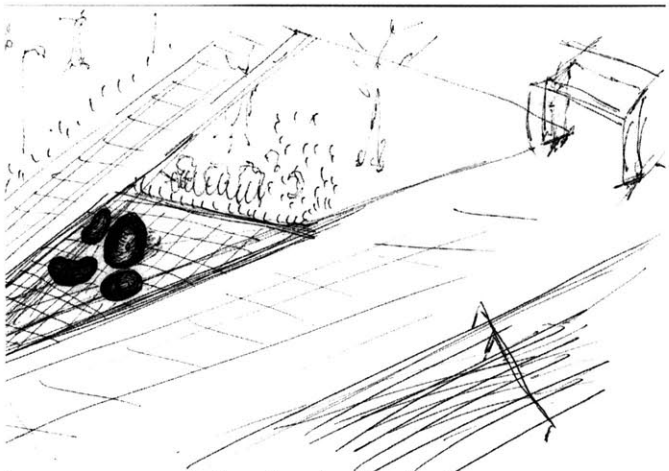
- Logs are not being kept. Should they be? Why?
- How will people know whether or not logs are being kept?
- How can the project assure participants on both ends that their anonymity is guaranteed? And how can it truly ensure it?

METHODOLOGY

With all of these research questions in mind, the design and planning of AgoraPhone took off. The design work includes the physical object, interface, and infrastructure, as well as where it is physically, culturally and socially located. Part of the design must also be, it was recognized, the guiding of public reception through carefully designed postcards, posters, commercials, and perhaps even public performances using the installation. A design must announce use value and social symbolism, but it should not be too regimented. As made clear by Winnicott's observations on transitional objects and play, a useful facilitator/device should be designed as offering a somewhat open system, able to be creatively used and able to adapt to each situation and evolve during interactions.

TELE-PRESENCE SCULPTURE

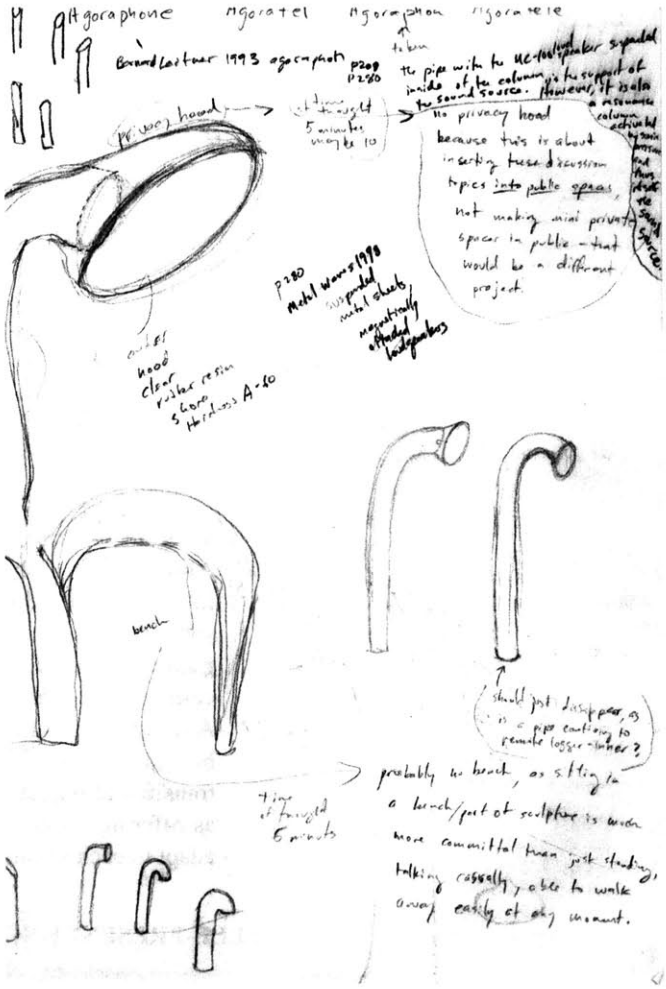
The focus of the physical design is to attract passers-by and to encourage their engagement with the callers. Inside of this is a desire to design a project that encourages people to open up and that promotes sincere public reception and responsiveness towards other people in shared public places. The installation interface is therefore serving as a social training aid of a sort, enabling people to learn how to be aware and responsive towards each other by beginning with the less intimidating presence of others who come through AgoraPhone – people not physically there, but there vocally and with the presence of attention. I started off focused on facilitating the opening up of heretofore very private or frightening issues. With this in mind I sketched out plans offering the possibility of intimate or contemplative conversations -- semi-intimate seated environments where people passing through the greater public space could pause and stay with the callers for a while, with the somewhat private architecture supporting postures of engagement with the caller and others gathering. At the same time I wanted the project to be a new urban fixture that, like a firebox or parking meter, is able to be installed along any city sidewalk and be immediately recognized for what it is, and used. In this aspect, this project had the mild disorder of being two projects trying to resolve into one -- a common syndrome. I found myself going in circles with my design reasoning for the installation.

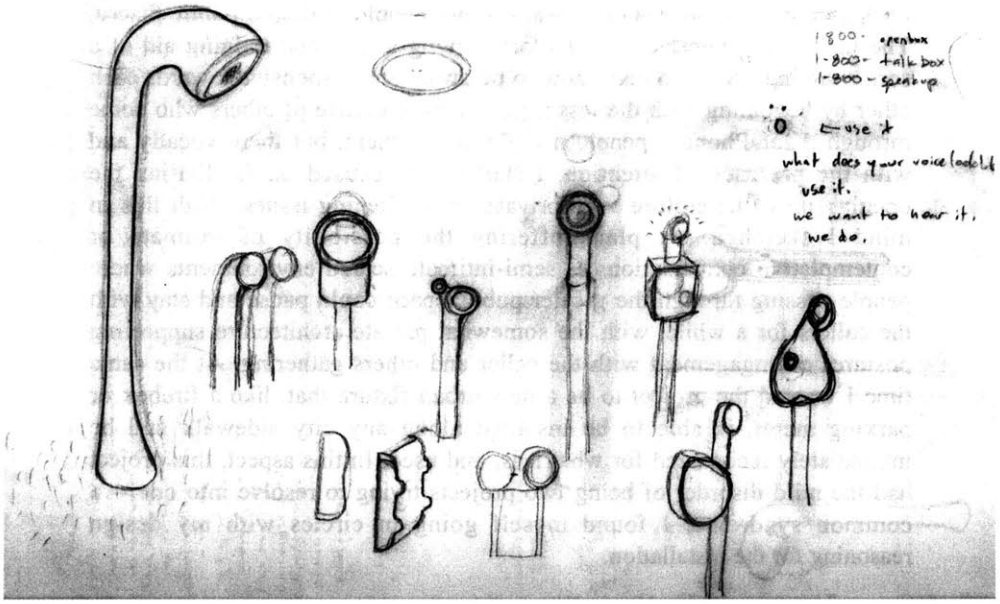


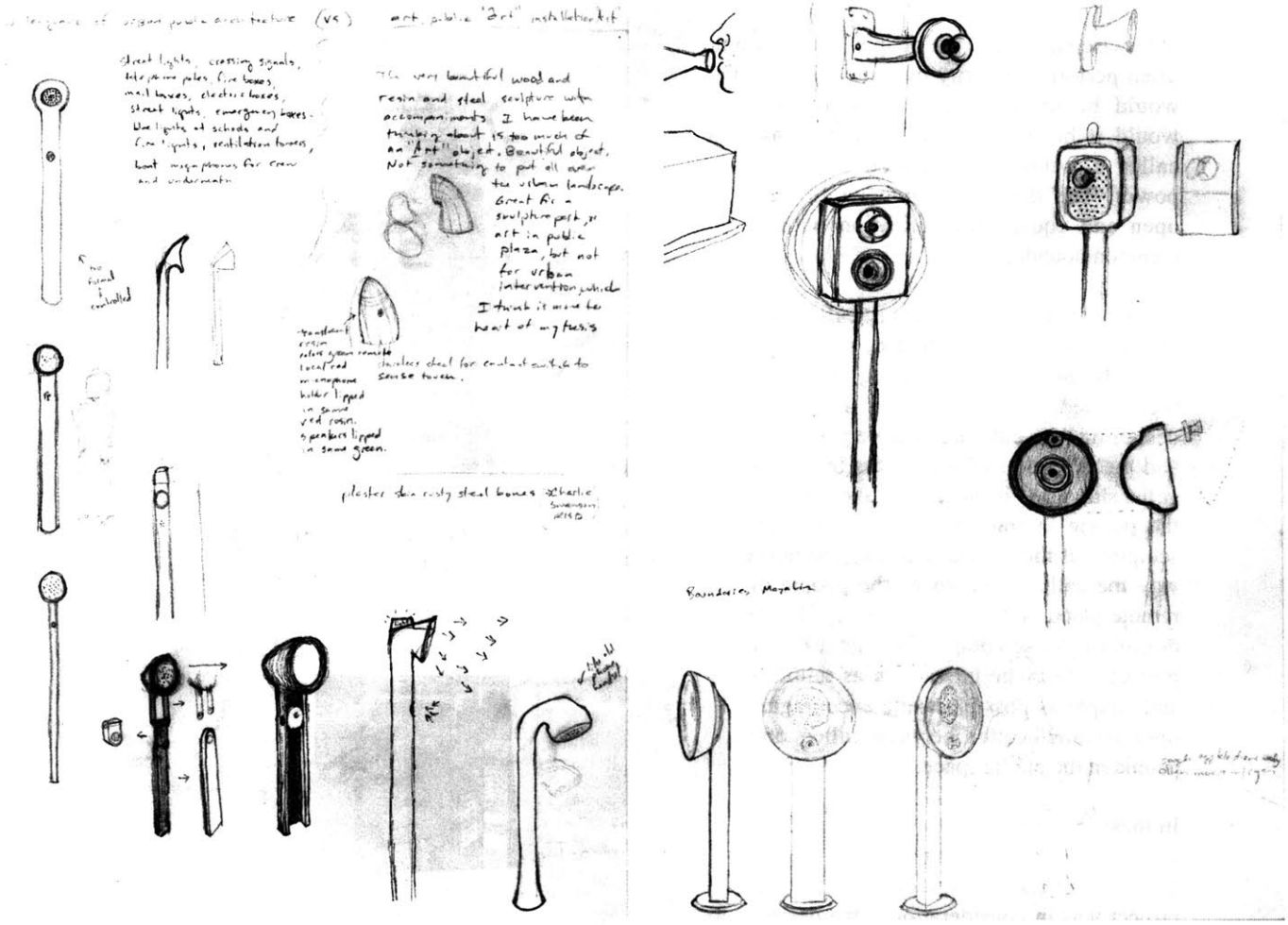
...y squares were originally for public gatering and public address. social info. ...always a podium or place where a person stood and called out the time and ...e news. (was this current events, things that members of a community should ...d, to know together. collective consciousness. Understanding, digestion, participation, as collective ...ferent than mass consumption. Digestion is different than consumption? Participation can be.)

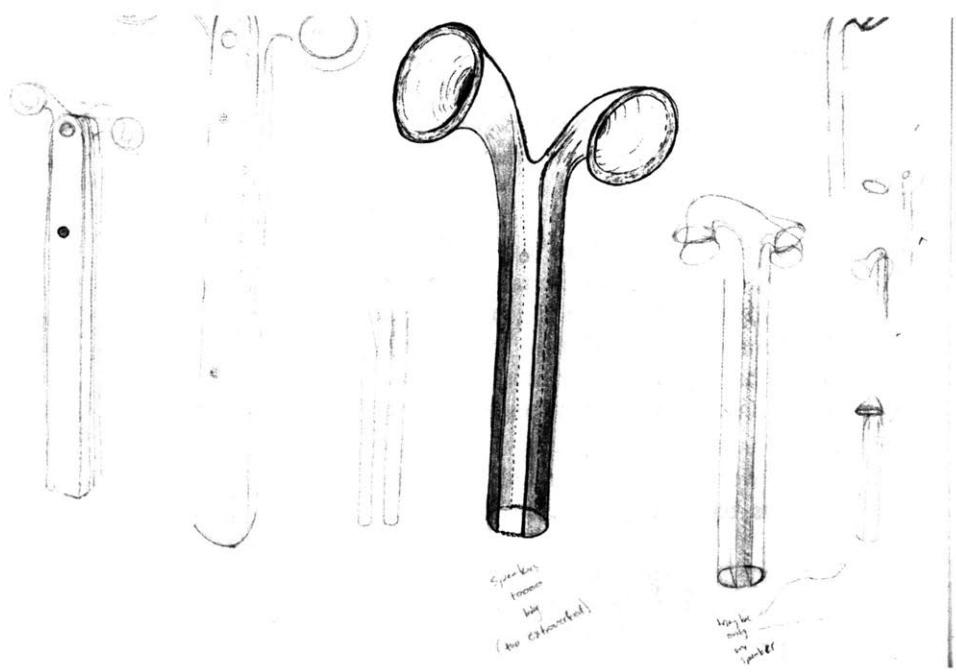
...have this anymore. We have squares but people are isolated within them, if anyone is even ...o be there at all. There there is Times Square, and malls, - Times Square has TV's and video ...ards yelling out the latest current issues - what to buy, what propaganda advertising to ...ty, who to try to be, and the time. Still the time. But that is just a leftover. Times Square ...eless place, really. Time does not affect it. Only speed, an illusion of time. (An ...to time?) City planning, history of squares, I need to look into this. Also, the Constructivists, agit props,

...ing important that I just realized today after csik's first class, is that ...dvertising for Agoraphone will itself bring the issues like domestic violence ...voice of/for anything into public space because I can in my addlert sounds, ...ents posters give examples, not campy but not intimidating either, ...se see, attractive, complicated pleasure.






(VS)
art, public "art" installation kit
Street lights, crossing signals, telephone poles, fire boxes, mail boxes, electric boxes, street lights, emergency boxes. Blue lights at schools and fire lights, ventilation towers, boat mega phones for crew and underwater
The very beautiful wood and resin and steel sculpture with accompaniments. I have been thinking about is too much of an "Art" object. Beautiful object. Not something to put all over the urban landscape. Great for a sculpture park, or art in public plaza, but not for urban intervention, which I think is more the heart of my thesis
transient resin colors green remote local red microphone holder lipped in same red resin. speakers lipped in same green.
stainless steel for contact switch to sense touch.
plaster skin rusty steel bones
Charlie Swanson RISD
Boundaries Magazine


Speakers 10000 hz (too extracted)

If the sculpture were too cute, or little, or otherwise subjugate, the people present would often perform authority over the caller, which would be undesirable in this project. Nor would it be good if the sculpture gave the caller a wildly exaggerated presence and power. The design is intended to facilitate open and equal communication without the common boundaries.

Figure 7 Cambridge parking meter.

Because the voice of each caller will be coming out of the sculpture, the caller will seem to be, on some level, embodied or represented by the sculpture. Therefore, the design of the sculpture will very much affect and the reception of the callers by the people at the site of the installation. Likewise, the way the people interact through the AgoraPhone sculpture at the installation site, and hence the way the caller experiences the people of this remote place, will very much be guided by the design of the sculpture. The intent of the project is to make interaction as intuitive and simple as possible while encouraging open communication between callers and people in the public space.

In these initial sketches, even before a site was chosen for the first prototype, a basic but consequential design decision for this project was in consideration – the desired link between remote callers and people present at the physical site could be realized as an augmented area, a free-standing object of some sort, public furniture such as a bench or bus shelter, or some extrapolation or combination of these.

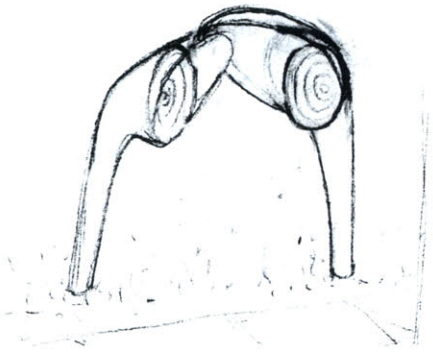


Figure 8 Sociable mailboxes. Early concept sketch along with inspiration from mailboxes.

Concurrently to thinking through sketches, photographs were taken around Cambridge and Boston (and found online and donated by friends) of spaces and objects having functions inherent to them. Appreciated was the straightforward functionality and simplicity of the best public work elements – mailboxes, fire hydrants, blue light phones, and fireboxes.

These mailboxes on Mass Ave in Harvard Square are excellent role models of utilitarian design. The interface is so simple and obvious, yet a little

creative. Approach, pull the handle, one is presented with a surface on which to place one's letter, watch this surface slant back into the belly as one closes the handle, let go… open again to see if mail is gone or if it somehow stuck to the surface . I have checked every time, never has it still been there. Then I check under the mailbox in case it has no bottom and the mail simply fell through to the sidewalk. I love the way these two mailboxes face each other, as if in dialogue. This gesture inspired a design sketch.

Figure 9 More inspirational urban elements.

As the long-term, post-thesis, plan is to have many installations of the project in many different places in various countries, and have them all be recognized for what purpose they exist, the urban street elements found in cities worldwide, such as the mailboxes, payphones and fireboxes, seemed significant role models.

After video taping areas around Boston and Cambridge as potential sites of installation, it was decided that the best site for the first run of this project is right outside my office window. (This decision was influenced by technology constraints, which will be discussed in section 8.3.) The walkway between the Ames Street Media Lab steps and the revolving doors of Building E23 is the major entrance to main campus from Kendall square and the subway, and therefore is highly trafficked by members of the M.I.T. community. Thousands of people pass through every day. Once this general site was chosen, planning began with the sketching of scenarios within the physical space between the Media Lab (E15), E17, E23, and E25.

Having decided to attempt the more general urban fixture design goal, I resolved to devise an urban communication sculpture/furniture/fixture that seems friendly without being too cute, industrial without being too cold, recognizable, and intuitive to use. I wanted it to have some sort of a light beacon, like blue light phones. I wanted the light to indicate when a caller was connected. I wanted the structure to offer a bit of shelter from rain. I wanted it to be a shape that fostered touching and communicative contact. Even if the caller does not feel the arm around the sculpture, the act of contact communicates something to the person making the contact

themself. It carries meaning for them and thereby enters the interaction.

When it was decided that a freestanding urban element, akin to payphones, fireboxes, street poles and mailboxes, is the type of architecture to be attempted, more design sketching began. The sketches had two main goals: to come up with a visually appropriate structure which itself communicates its purpose and usability, and to come up with an acoustic architecture with the structure of the object which is able toeffectively facilitate both public announcements from callers wishing to proclaim, and intimate dialogues in situations that become more private. With design trial and error and redesign, these goals were approached.

The structure was to carry the presence of a remote caller, and to do so in a neither overbearing nor meek way. The structure in some sketches was either much taller or shorter than a standing adult and it was decided that this carried too much symbolism of power or of social role. Likewise, the audio volume coming out of the sculpture could be set to be as loud as a warning bell or as quiet as a whisper. It was decided that volume should be left in the intuitive control of the caller, with the volume out of the sculpture matching the volume input at the callers end -- simply transferring the voice, same volume, to the remote space of the AgoraPhone sculpture so that it sounds as if the caller were standing where the sculpture is.

Sound experiments necessary to guide the microphone and speaker housing design and placement at the physical tele-presence site were performed. The goal here was to come up with a design that could offer, first, an overarching environmental aural space to be sensed by the caller when first calling or when no one is responding directly, and second, an aural space of intimacy facilitated for both sides of the interaction when the caller is talking with someone one-on-one. Sketches were made and pondered over before two full-scale prototypes were built and tested. Four different speakers, and two different

Figure 10 Making the AgoraPhone sculpture out of foam, fiberglass, and epoxy.

microphones chosen for their directionality, were tested within the physical prototypes.

In the first prototype, sound from the speakers within the sculpture traveled to the environment, and to people present, through a system of concentric venting rims. The microphone used to capture the sounds at the site for the caller to hear is located in the central dish. The acoustic rims served the double purpose of steering the sound coming from the caller out to the people around the sculpture without letting it travel too much back into the microphone, and guiding the sounds of the people present at the site in towards the microphone. The second prototype minimized the concentric rims down to the main concave space presenting the audio of the remote caller as it comes out of the interior of the sculpture, and the center concave piece that evenly floats within the larger space and houses the microphone at its vortex. The second design seemed more straightforward and clean.

The sculpture is designed to appear to lean slightly forward in a gesture of reaching out, sincerity, action, listening, and earnestness of engagement. The outermost rim edge is shaped to fit nicely into the holding of one's hands to facilitate easy intuitive contact. The shape of the upper form encourages an arm to rest along its top in intimate conversations. Unplanned, but a very nice surprise, the bottom of the sculpture proved to invite hugging by children. The entire structure is waterproof and designed to protect the interior from water damage in the case of driving sideways rains.

The surface and color were built up through successive (over thirty) coats of epoxy, with condensed acrylic paint added in a ten-to-one ratio, and thorough sanding between each layer. The surface color went through several stages along the way and a few are worth noting. Having looked at the pink of the foam prototypes for so long, I had an itch to make the final piece pink. But I resisted in avoidance of giving it a gendered appearance, fleshy or sexual connotation, or Barbie association. I wanted a color that was akin to the urban yellows and oranges of, for example, street signs, warning signals, and construction vehicles. The first yellow looked sickly. Then it became

too red and it looked bloody. Because layers of pigmented epoxy are only millimeters thick, the change was very gradual over time. As I worked on it for hours at a time every day over the course of a couple of months, it sometimes seemed like a living body slowly morphing through different conditions. A fleshy color emerged which gave the piece a very body-like appeal which was a bit eerie but incredibly attractive. I temporarily installed it in this state for Muntadas and his class to visit on a rainy day in April. I wish I had a photograph of this. It was really beautiful, especially with its transport protection not yet removed - a gigantic translucent white plastic bag over its head, blowing violently in the wind and dripping with rivers of water. But was this color appropriate? Maybe it was just fine, but again with the sense that it was a good idea to avoid the fleshy and potentially sexual metaphors, I made the next layers more orange. From early on in the process, I really liked the areas of deeper sanding through layers -- fiberglass showing through parts, showing under the surface, revealing its innerness, its history. It reminds me of old ship parts washed up on the beach, or forgotten architectures eroded down to intimate layers. In a way that is how I let it retain its fleshiness. The concave areas where sound communication transpires were smoothed and colored with epoxy layers pigmented white and sanded in between. All of the surface was done together, white and colored, so that it would be continuous - the orange blends into white as the surface turns the smooth seventy-degree edge/corner into the white concavities. White was chosen because it is empty and light and able to be filled by the people using it, rather than adding a tone more complicated than plain. After the over-thirty coats, this piece did have a story to reveal. It would have been infinitely easier to have instead made a vacuum-formed plastic shell of a pre-ordered color and thereby bypass the process of struggle-to-become that AgoraPhone went through, but I wanted to avoid the look and feel of a plastic toy. I thought the voices of people would be better presented and better received through a complex experienced proxy.

TELEPHONE INTERFACE

Understanding what is needed by a remote caller choosing this form of communication, rather than face-to-face, is important in designing the audiospace. As the main sensory focus of the interface, the aural experience must be both captivating and able to carry meaning. Initial thoughts included importing extra sound scenery to compensate for the missing visual stimuli. The closeness of other people to the sculpture could be tracked using infrared sensors or sonar sensors and presented to the remote caller as fluctuating atmospheric sound, for example. For the first version of AgoraPhone the imported audio and digital signal processing has been kept to a minimum and clearly introduced when coming into play for someone interacting through AgoraPhone, as will be explained in this section.

Environmental sounds and voices at the site of the sculpture are heard by the caller unprocessed, as they are picked up by the microphone. As with a person's own ear, the voices of people talking nearby to the sculpture are heard louder and more clearly the closer they are to it. Testing of microphones resulted in choosing one that is designed to be especially

suited for voice applications but that, through quick assessment tests in the area where the installation was planned, was found to be well suited for picking up ambient sounds quite well also. Rain is clearly distinguishable, as are birdsongs, nearby traffic and construction, footsteps, and trees moving in the wind. These sounds travel through to the caller to interpret as well, along with the voices.

Predicting that some people would call in knowing very little about what the project entailed and what their options were, combined with a desire to set an easing tone for the experience, a voice greeting was designed to meet the callers initially, rather than directly opening the full duplex audio link. In fact, the audio link is opened by the caller having listened to the voice greeting which, among other information, tells the caller that they may press "#" at any time to connect through to the public space. The voice greeting is designed to be welcoming and neutral, encouraging without being pandering. Flow chart of voice greeting:

Remote callers are offered the ability to disguise their voices. As the voice greeting explains, they may at anytime press "2" to turn voice altering on, and "1" to return to their unprocessed voice. At any time a caller can "try on" their chosen voice by pressing "4", speaking for a few seconds, and then listening to hear their voice presented back to them as it would be heard by people near the sculpture.

By constructing the interaction architecture such that the caller can choose the voice they wish to project and choose when they are ready to connect to the remote public space, a sense of control, of voice, and of self-controlled volition is hopefully facilitated.

A full-duplex connection is important, necessary really, for the caller and people present to have an easy open connection without having to make a strained effort to avoid interrupting each other.

For the first installation on the M.I.T. campus, a local phone number is used as AgoraPhone's number: (617) 253-6237.

INFRASTRUCTURE

AgoraPhone looks like a simple device but actually there are some technical subtleties that need to be addressed. An analog telephone line is two wires, one being ground and the other being the signal line carrying both incoming and outgoing audio signals. Normally a telephone has its speaker and microphone aurally isolated from each other in physical design to prevent crosstalk. Speaker phones are only half-duplex, allowing only incoming or outgoing signals on the line at any moment in time, thereby protecting themselves from audio feedback loops. Because AgoraPhone requires a full-duplex connection, a digital telephone hybrid (a device which intelligently manages the state of the phone line) is part of the hardware requirements.

The system hardware consists of one computer equipped with two sound cards, a digital telephone hybrid, powered speakers, a 900 Megahertz transceiver pair, a UHF wireless microphone, and a circuit designed and built for this project specifically to detect when someone is on the line and to send this state to the computer vis a serial port connection, . The digital telephone hybrid , Telos ONE, manufactured by Telos Systems [25], converts the analog phone signal into input and output channels, performs echo cancellation, and performs high-pass and low-pass filtering to clean up the sound before interfacing to the first sound card. The computer receives the caller's input as a mono channel from this first sound card, processes the touch-tones of the caller's interaction, and processes the caller's voice (if the caller desires to have their voice masked via pitch shifting) before sending the voice out via the second sound card. The second sound card interfaces the computer to the sculpture via a set of wireless 900 Megahertz transceivers positioned in line-of-sight between my office window on the fourth floor of the Media Lab and the AgoraPhone sculpture outside. The sounds of the caller are sent through this setup, and the transceiver at the sculpture end connects directly to a pair of powered speakers in the sculpture. These speakers then amplify and project the audio signal of the caller's sounds out into the public space of the installation.

The computer therefore is performing signal processing on the voice when needed, and decoding and translating touch-tone requests. It is continuously receiving aural data from the public sculpture via the second sound card and transmitting it back out the first sound card, through the digital telephone hybrid, to the caller. The internal software runs on the Linux platform, and interfaces with the two sound cards through the Advanced Linux Sound Architecture(ALSA). All signal processing done on the sound (filtering, masking, pitch-shifting, etc.) has been programmed in C++.

INSTALLATION / INTERVENTION

As I have looked out my office window over the past two years I have seen a beautiful site -- an empty space with people passing through. Beautiful like Wings of Desire without the angels, like the plastic bag of American Beauty without what's-his-name noticing it. Here are some web cam images from my window. People are hypnotized with productivity -- efficient, moving fast, walking head-first.

The situationists liked Giorgio de Chirico's paintings for their potential of space and place, for he seemed to be painting arcades with clear awareness and expression of the possibilities of architecture's influence on society. [7,18]

William H. Whyte and his collaborators found that pedestrians walking along the street, who then meet and enter into a conversation with someone, tend to remain in the main flow of people, blocking pedestrian traffic and being jostled by it. These researchers, at first puzzled by this, soon had a revelation.

This relates to AgoraPhone – I have placed it so that people who stop to talk with it will themselves block traffic, though the sculpture itself is just off the pavement.

MIT is a specific community with certain characteristics such as above average knowledge of, and perhaps bias around, technology. There is a strong hacker culture and curiosity about how things work. There are also expectations about what things might be related to when something suddenly sprouts onto the campus landscape as in AgoraPhone. I expect the reception of AgoraPhone to be noticeably effected by the specific characteristics of the community.

PROPAGANDA / PERSUASION

Like most things in capitalist societies, the propaganda announcing this piece will guide the perception and use of the project. As I have mentioned, I began this thesis with some lofty goals of revolution, of freedom of expression in public without fear of retaliation, and of making possible an easily accessible forum facilitating vital critical dialogues. In the design of the sculpture, the design of the telephone interface, and in the choice of site for the installation, I have chosen to be open to multiple uses rather than didactically steer the inception. Likewise, although I could advertise the project as something akin to hotlines, or as a place to confess, or as a place to start the overthrow of whatever one wants to overthrow, I instead designed print material and a website that simply presents the basic structure and hints at possibilities of the project and leaves the rest up to each person. This layer of the design, like the others, simply welcomes and encourages open use without guidelines.

Postcards were designed to explain the two sides of interaction through AgoraPhone. What goes on at the site of the installation is explained on one side, and that one can call from anywhere is illustrated on the other side. I took care to make the cards attractive enough that people might keep the card because they liked the card, and then try AgoraPhone out at a later time because its number is right there with them. Drawings on the card are meant to elicit feelings of recognition, "hey I know how that feels." I placed a box of these cards in front of the installation every day. A few hundred were also put in places throughout the M.I.T. campus and in and around Cambridge.

The website url address is printed on the cards. At this online site a little more about the project is presented and an anonymous place for posting comments is linked.

The more AgoraPhone is used, the more widely accessible it will demonstrate itself to be and therefore the more it will be used. Therefore, performances using AgoraPhone presenting some possibilities were enacted on the first few days to inspire, encourage, and catalyze use by others. If the effortlessness of calling and speaking without fear is widely apparent, potential callers may more easily pick up the phone and dial and speak about whatever they wish to.

When callers connect through to the public place, they may find many talkative people there. They may find no one. Someone may be there, but only listening. Placement, propaganda, design, time of day, and chance all contribute to how the caller will be met.

AgoraPhone connects callers to the passing public. There is a conversation sculpture located in a public place, activated when someone calls: (617) 253-6237.

I AM SOOOO BORED I NEED TO TALK WITH SOMEONE ANYONE...
I AM VERY CONCERNED ABOUT THE STATE OF THE WORLD....
I AM SO PSYCHED! BECAUSE I JUST GRADUATED!!
I AM SO ANGRY AT MY GOLDFISH!!! I NEED TO TALK TO SOMEBODY BEFORE I...
Call AgoraPhone!
from any phone anywhere
(617)253-6237

OBSERVATION/EVALUATION

TECHNICAL / OPERATIONAL

Overall, it works! People are able to call in and make sense of the interface and make it through to talk into the space. Some people experiment with the voice modulating option. People walk near and are able to hear the callers, and when they respond by talking, the callers are able to hear them.

LATENCY

There is near to zero latency in the transmissions from the microphone in the sculpture to the phone line. The small delay that is present is due to ALSA having to patch between the sound cards, as it patches via a buffer so doing real time patching is, well, really hard.

There are about 500 milliseconds of latency from the phone line to the speakers of the sculpture. This delay is due to a combination of ALSA having to patch from one sound card, through the computer for some time expensive digital signal processing as described in section 8.3(DTMF decoding and voice modulation), and then to the other sound card. As a result of this substantial delay, combined with the fact that the microphone is not completely aurally isolated from the speakers in the sculpture, the caller hears their own voice back with a delay of just over 500 milliseconds. This only occurs once (i.e. no feedback loop) because the digital telephone hybrid separates the incoming and outgoing phone line signals.

This one-time feedback with delay, though distracting until adapted to, was also commented on as being a means of reassurance that the system was working and that one's own voice, as the caller, was being projected at the site as expected (masked or not).

SOUND QUALITY

Some people found the volume of the sculpture's speakers to be too low. This puzzled me because I had set the volume to be about that at which the caller would sound had they been simply standing right there rather than calling in. "Shouldn't this be perfect?" I thought. "It is just like talking to

the person." I reluctantly turned the volume up a little bit after many people asked me to, but they still wanted more. I was quite confused indeed. No one articulated why they wanted it louder, other than saying that they could not hear it well, which was just not factual as far as I could tell. I thought, "What is wrong with you people!" (Just kidding, I never thought that.) I adjusted it to be just a little louder than a person standing there, and hoped the compromise would be enough. As I thought about it after the fact, what I realized, finally, was that most people do not expect the voice to be that of a person standing there. The sculpture is not the body of a real person; it is not the shape of a real person; it is closer to the shape of a horn or loudspeaker, in fact. So, people expect the voice to be more than human in sound, a louder voice. And because the voice was quieter than they expected, they thought it was too quiet. And maybe it was. This is a design choice that will affect the perception of the relationship to the person behind the tele-presence sculpture and it is therefore a matter of balancing expectations and perceptions to reach either balance or the level and direction of imbalance desired. It is certainly a fascinating question I believe, and one that I will be thinking about as I begin the next version and as I work on other tele-presence projects.

DTMF DECODING

The touch-tones are successfully decoded for all callers.

VOICE MASKING

We have successfully offered the masking of callers' voices in real-time as we set out to.

INTERFERENCE

One considerable annoyance is interference in the 900 Megahertz band range. The power (battery charge) of the transmitter/receiver pair, the amount of traffic sharing the 900 band at any given moment, and the weather all seem to effect the likelihood that the caller's signal will get smoothly through without static or cut-outs. Usually the reception is fine, but when it is not it is really frustrating. I would be hesitant to use the 900 Megahertz band around here again, even if I did use wireless, because I would need to use a transmitter so powerful that it might interfere with other people's projects. I am so considerate. Yes, so, I guess I would simply use an illegal frequency band. Heh.

INTERFACE

At the sculpture, people tended to speak to behind the microphone dish, although it was so nicely shaped to bring their sounds into the microphone at its center. Even though it would have been more comfortable to speak towards the center where the microphone is, people still craned there heads a bit to speak into the place where they heard the remote caller's voice coming from. I wonder if this would still be the case if the remote caller's voice were presented louder and less localizable as coming from behind the microphone dish.

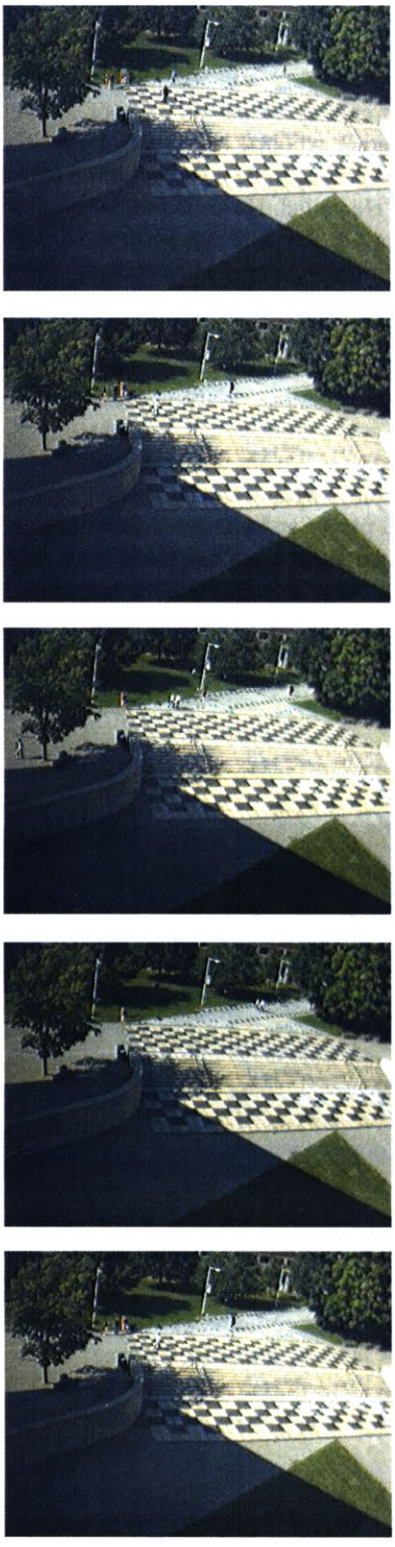


Figure 11 View of activity at the site of the AgoraPhone sculpture.

SOCIAL / ARCHITECTURAL

THE MACRO VIEW

Facing out of my office window overlooking the AgoraPhone installation, I installed a webcam taking low resolution (to retain anonymity of the people) photographs. I captured still frames every few seconds for periods of time before, during, and after the project's installation and reception. This documentation is helpful in evaluating macro level changes in the behavior of people in the physical space as the installation becomes part of the space. It begins to reveal physical aspects of the structure of the interactions of people at the site of the installation. In order to evaluate the effect of the installation on the social space, it is useful to look for, for example, how many people are in conversation groups; how large are those groups and how long do they last; what body language is used; and, with the tele-presence sculpture, are the conversations mostly one-to-one or do more people gather at the interface and if so do they converse with each other as well as the remote caller.

There occurred two distinct changes in the space, and these are illustrated in the photos. The frequency of the first one, people gathering at the sculpture itself, is much lower than expected. The frequency of the other effect, pairs or groups of people hanging out nearby and calling from cell phones while watching people at the sculpture, is much higher that foreseen. That conversation groups would become to seem more normal or expected in the space in general and therefore would occur even completely apart from the sculpture more frequently than before, has not really occurred yet. This is predictable, however, if it is kept in mind that the early stages of incorporation have not been passed yet.

PERFORMANCE HUMOR

Remember the wacky story of Bell and Watson demonstrating the telephone in its early days? Well, my Dad is not too far from Watson in his first use of AgoraPhone...

I had set it up outside for the first time, and everything was technically working! So, all I needed was for people to start calling. Because I had not given the number to anyone yet, I called my father whom I knew was at home and I told him to call AgoraPhone and talk to the people nearby, "you know Dad, to help me get the project going...." He called. He yelled out to people and managed to gather a crowd. (The fact that I was standing there, red with embarrassment and fear of what he might say, probably added some drama and draw to the scenario for people as well.) Then things got a little crazy. My father, who at first would every once in a while address me as Kelvin or Kelly or tell me something cute about my nephew as if there were not all of these other people gathered, started getting pretty into the whole scene. "Hey, you people wait right there just a minute. I'll be right back. Let me just go get my guitar and my harmonica. We are going to sing some Bob." (Now, just between you and me, he plays neither the guitar nor the harmonica.) He came back with a portable cd player and a Dylan cd and began playing that and singing along. My Dad, ten yards from my place of work and school, was singing right out of AgoraPhone with all the abandon of someone singing along by themselves in a car with the windows rolled up on the highway where no one else can hear! Okay, it was hilarious actually. I am still laughing.

CALLING FROM LINE OF SIGHT

One thing people do when they can watch the sculpture as they are talking through it is call out when they know someone is passing, or just as someone arrives. Being able to see the activity at and near the sculpture allows callers to plan their interactions to maximize response, to surprise people with their awareness of them, or a bit of both.

Figure 12 Calling from a nearby office window while watching the interaction.

One researcher in the medical building with a window view of the installation told me that, "AgoraPhone has changed my life." He went on to explain that he calls several times day, both to talk with strangers and with people he knows. If someone is coming to meet him he tells them to meet at the orange phone sculpture in the courtyard, and then when he sees them from his window he calls AgoraPhone and speaks through it surprising them by saying hello and that he will be right out to meet them.

Vicente Guallart, a Spanish architect who uses new media in his projects came to my office on a July afternoon and I introduced him to AgoraPhone. I dialed the number and handed him the phone. He watched the installation site from my window, smiling. Whenever someone came within hearing range he asked, "Do you want to be rich?" with his Barcelonan accent, it was so great! I was laughing so hard. People turned their heads to the

AgoraPhone but kept on walking. "I guess they do not want to be rich," Vicente deduced. Very good humored. He did this about a dozen times. He said he thought this was great.

GROUP HUMOR

A few office groups in the Media Lab have certainly had a lot of fun with it.

One grad student told me, "I call from where I can see it and call out just as someone is walking by, so I know I will get someone. I tried calling once from a phone from which I could not see the sculpture, when I first got the number, but I did not get anyone – it did not work."..."I always take on another persona, because, especially with my accent, people around here might know who I am. ... I do not use it for anything rude or mean spirited. Just humor – I really use it always for humor. And, oh, this is really interesting actually, I only use it when there is a group of people in the room with me, for performance humor, otherwise it is not so fun. Yes, this is true, I would not call if I were the only one in the room. It would not be as much fun. It is like candid camera. That's what it is. We call it all the time. Lunchtime is the best time because people are milling about and not really wanting to go back to work so they will take the extra time to talk. The end of the day is not so good, people just want to go home. Straight away."

One scenario this same student has tried out, both from his office window view with all of his officemates as the audience, and also while sociably sitting in the grass near the sculpture with a group of friends listening and watching the action at the sculpture while he called through on his cell phone with his back turned to the sculpture so people at the sculpture could not see and discover him as the caller talking on his cell phone from nearby.

Caller: "Hello, how are you. Is this the Microsoft helpline? I am actually trying to call the Microsoft help line."

Respondent: "Oh, well this is MIT."

Caller: "MIT. What? you mean the school?"

Respondent: "Yes that's right. You are talking out of the AgoraPhone sculpture here."

Caller: "What?! You mean like I am talking out in some place there... and everyone can hear me?"

Respondent: "Yes, that's right."

Caller: "Well jeeze, I was just trying to call Microsoft help line because I am having some trouble."

Respondent: "Well maybe we can help you out here?"

Caller: "Oh yeah? Well I have been having some trouble with Microsoft word...."

Another person called one morning while the sculpture was laying on the grass before being installed and asked for help. "Hello, miss, could you, um, help me out here? I seem to have fallen down... Could anyone give me a hand here? Oh, sir, yes, could you help me out? I seem to have fallen out of my hole. Could you just pick me up and put me back, please? Sir? Please, somebody..." A few people stopped and moved the sculpture a bit, but no one picked it up. Probably at least partially because they did not know exactly how to help it. Hmmm...

NOT BEING ABLE TO SEE IF THERE IS ANYBODY AT THE SITE WHEN CALLING

Many people tried to call and received no response from people in the physical space. This is partially because everyone in this space tends to be walking through on their way someplace else. Therefore, if the caller is not speaking for the few seconds a passer-by is within earshot, then the caller misses the chance of catching that person's attention. This is a problem of placement and also of what is offered to the caller by the interface. This lack of response could be made less likely by giving all callers a better sense of when someone is about to be in earshot, as the people who call from overlooking windows have found very useful. Also, installing the sculpture in a place where people tend to pause anyway, such as at a crosswalk or bus stop, could increase the time the caller has to catch the attention of a person in the space.

On another rainy night I listened to this monologue from a caller who was not aware that I was right there listening. He could not see me and I did not respond to his attempts at attracting a passer-by.:

"Get out of the rain!"

"Watch out! The pavement is slippery!"

"You know the AgoraPhone won't protect you from lightning."

"Hey come ovah here!"

"Hey, I gatta deal for you!"

"Hey buddy can you spare some change?"

"Oh it's no fun if no one plays along..."

EXPERIENCES OF BEING AT THE SITE OF THE SCULPTURE

Another graduate student in the lab told me of her experience at the sculpture. "I used your phone yesterday. I was just walking by and someone said, 'Hey, anybody there?' so I said 'hello,' and they asked me how my day was going... But I felt kind of weird. ... Yeah, kind of self conscious,

because I am talking to this person and I do not even know who they are and people are walking by seeing me talking to this thing... It is like talking to yourself in public if people do not know what it is... It is kind of like when you are talking on a cell phone in public only this is really big and out loud like your conversation is on speaker phone! I think if it were well known what it was, you know, if it was socially acceptable, then it would feel less weird.

One night I went to take the sculpture down and bring it inside and as I was pulling it out of the ground and all of a sudden it spoke to me, "Put me down. I like it where I am. Where are you taking me? Hello?" A caller clearly could see me from a nearby window. I found myself looking around, trying to locate and make eye contact with whomever was calling, I tried to see them, to somehow close the circuit. I wanted to smile at them to show that I enjoyed their playing and that I knew what they were up to even.

Figure 13 People interacting through the AgoraPhone installation. July 2002.

Another time I was at the sculpture someone called up saying, "Hellooo. I can seeee you." Then they went on to tell me what I was wearing to prove that they could see me. But they must have been quite far away because they got a few things wrong. But I found it interesting that, even in spite of the fact that they could barely see me, they wanted me to know that they could see me, that this is what they were talking about of all possible topics. And again, being told that the caller could see me, I looked around, even as if to look in building windows which only appeared black due to the bright sun outside where I was, trying to locate the caller. Also, through this mime behavior, I was trying to show the caller that I wanted to see them. I wanted it to be more equal. Feeling watched did not make me want to stay and pursue a serious conversation, or even a light one for very long.

SOME PEOPLE IGNORE THE INSTALLATION, WHILE OTHERS THINK IT IS THE "GREATEST THING EVER."

One woman was very excited to find me outside tweaking the hardware one day. "Is this yours?! I just want to tell you that it is really so wonderful. I was just over visiting my daughter. She works over there (pointing) on the other side of campus so she can not see the sculpture but she sometimes calls me here anyway. My son, he works right in that window(pointing to the biology building across Ames Street). He calls me and he can see me and it is just so funny. We have the greatest time. It is just so fun. But my daughter can't see me when she calls, so we were talking about it and I was thinking maybe it could have some sort of camera so everyone can see who is at the phone here?"

I asked what she would think of a webcam image being broadcast on a website for this purpose, explaining that I was thinking about this but wanted to keep the anonymity of the people here so it would have to be a very far away image without facial expression details. This she thought was enough. "Yes! Just so people can see over here even if they are not nearby. Because my daughter can't see me." I said that I would probably experiment with this in the next version. And I thanked her for her wise advice. And I thanked her again and told her I was glad she enjoyed it. We talked a bit more and she confessed that she was not sure if I would approve of her use of the project. She talked as if she were somewhat confessing to me about how she misuses it, but that it is so fun she can't help it, and that she hopes it is okay. I assured her that it was fine, that it was great, that I hope everyone will use it however they want, and that I was really happy to hear about how she and her son and daughter are enjoying it. This was a bit of a relief to her. She then told me that her son calls it all the time and talks to people. She said that her daughter calls it too, but not as much. Throughout our whole conversation this woman was really happy and excited, occasionally squeezing my shoulders and telling me how wonderful and fun the project is. It really made me feel like something good was happening with this project and people.

PEOPLE FEELING UNSURE IF HOW THEY ARE USING IT IS "OK"

Being unsure about whether or not how one uses the project is going to be okay with me, or whether it was too socially deviant in general, was something I found over and over as I asked people in the area of the installation if they had interacted through AgoraPhone and how. Even professors have made funny calls through it, but they only admitted this to me after I told them that lots of people had been calling from overlooking windows and playing jokes on passers-by. "Oh good, so I am not the only one. I was not sure if it was okay so I wasn't going to say anything, but..."

FACILITATIVE / THERAPEUTIC

The project has not yet reached a stage of socially critical therapeutic use in the sense that I initially was hoping to elicit. However, people like talking through it and the project has helped some people think about some things in new ways. I even actually believe that given a long time and the help of some more propaganda, people would start using AgoraPhone for more uses that have yet been witnessed, including critical dialogue. People have been a bit timid, due to all of their socialization, about what might be considered inappropriate, as I found out when interviewing callers. People standing at the sculpture have felt too exposed and this is an issue that needs to be taken up in future designs. It is a very hard challenge – how to design the physical installation such that it is open-air public but at the same time giving people at the sculpture a safe sense while participating, thus facilitating free, open, public participation.

The object, as a facilitative transitional object, has passed the best test of friendly comforting approachableness. Children walking by, more often

than not, will put wrap their arms fully around AgoraPhone and give it a big bear hug. The first day it was out a four-year-old played with it for about fifteen minutes while his Mom and baby sister talked through it, hugging it about fifty times.

People do feel free to express and to take over the project, which is also a sign of a good transitional object. At least one person called up and played his own music show through the sculpture. He called several days and asked passers-by for requests, but often just played whatever he liked.

One rainy night I went to check on AgoraPhone and someone was on the line singing away, "...singing in the rain, just singing in the rain, what a glorious feeling...!"

As I was wondering how comfortably people would be able to carry on a conversation with a remote caller through the AgoraPhone sculpture, one of my technology perception questions was at what point would people at the site of the sculpture understand that there is a real person speaking through the sculpture in real-time. I felt a bit like a crazy version of ELIZA-gone-real (ELIZA being the interactive computer system that mimicked a Rogerian psychotherapist) as I found some people coming upon the sculpture while I was on the other end talking (not at all like ELIZA, by the way), and they would think that I was a computer. They thought that the interactions they were having with me were all produced by clever computer software. I heard them trying to figure me out, theorizing that sensors knew they were there and told the software to speak, and that language processing created the words and sounds of the voice coming out of the sculpture based on what they said and did near the sculpture. I was acting like a total goofball and it was still very hard to convince some people that I was real!

FUTURE WORK

Continued work combining physical and mediated spaces and expressive possibilities may facilitate insights into fascinating human behavior that is emerging already.

Sound and space work playing with the suggestive power of sound and the portrayal of space through aural abstraction may offer the callers more information about the passers-by, and vice versa.

At the very beginning of this investigation involving public voice, the main motivating goals were to enable people to speak aloud to others without fear and to offer everyday citizens a very casual easy way to be responsive. Early concept sketches were bouncing back and forth between somewhat enclosed mini-environments and urban elements more akin to street lamps, fire boxes, and blue light emergency phones. Many architectures can be made for different activities. Similarly, having the choice of calling different places, each with its distinct tone and feeling, may be an interesting way to think about future versions. How an AgoraPhone in New York City is received and used compared to one on a beach in northern California could inform design of a single universal structure or reveal a preference for individual designs for each distinct place.

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