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# Collaborative Engagement in Public Spaces

**Pamela Jennings, Ph.D.**

Assistant Professor

Art and Human Computer Interaction

Carnegie Mellon University

Pittsburgh, Pennsylvania 15213 USA

[pamelaj@andrew.cmu.edu](mailto:pamelaj@andrew.cmu.edu)

<http://studio416.cfa.smu.edu>

## Abstract

This paper introduces and develops an argument under which the theory of critical creative technology can mature and take on the role as an agent of negotiation and change by encouraging intersubjective communication in public spaces. Theoretical premises on the development of the public sphere; intersubjectivity and play are used to support the theory of critical creative technology. The *Constructed Narratives* project is presented as a research experiment in the development of interfaces designed for public spaces to encourage discourse among its occupants.

## Keywords

Tangible Social Interfaces, Public Sphere, Ubiquitous Computing, Computer Supported Collaborative Play

## ACM Classification Keywords

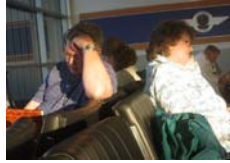
H.5.2 User Interfaces; J.5 Arts and Humanities

## Introduction

On February 26, 2007, I spent an afternoon in a cramped hospital waiting room that was filled with people who represented a variety of cultures, ethnicities, socio-economic status, life experiences, and concerns. One man in particular wore hunting fatigues and a baseball cap. His skin was weathered by age and life. The image he presented before me created great contrast to the middle aged upper middle class couple sitting next to him. I wondered about his life story, but didn't dare to ask. Surprisingly, he wanted to – or needed to talk. What followed was a fantastic story about his life working in the coal mines of West Virginia. This gentleman was able to break the social walls of silence to converse. Perhaps he was as curious about me and my family. Generally, boundaries between strangers are not challenged in such a setting. This experience illustrates the generating seed for my research. That is how to design can information technologies and human centered computing applications that facilitate dialogue between “familiar strangers”?

## Critical Creative Technology: an agent for negotiation and change

Research on Critical Creative Technology is based on the premise that public space can be a segregated environment where people tend to interact socially with others who are more similar than different from themselves. This common act of social engagement garners missed opportunities to exchange ideas and learn from people who do not fit the profile of one's



*Fig. 1 Typical airport waiting lounge.*

immediate familial or social network. The public sphere, whether it is realized in parks and plazas, the Internet, or other venues that support expression and discourse between individuals has been identified through history as a place to promote civic pluralism. [1] It is a place where differences can be discovered, arbitrated and transformed into productive resources for building common-ground and common-purpose two essential components for a peaceful and productive world. However, the development of information technologies and collaborative applications to facilitate the discovery of common ground through discourse lags behind the development of technologies for surveillance and segmenting such spaces into zones of detachment. Intel researchers Eric Paulos and Elizabeth Goodman borrowed Stanley Milgram's 1972 phrase "familiar strangers" to explain the relationship we have to people we see everyday in our daily activities with whom we do not interact. [2] The Intel research explores ways to use common personal digital assistant devices and projected video analysis to reveal patterns of occupancy and consumption in public spaces between people who remain familiar strangers. Their research brings to our attention the need and opportunity to develop creative technologies that make a public space more interactive, informative and engaging. However, it does not address issues of facilitating discourse in public spaces.

### **IT that Alienates**

Ubiquitous information technologies have had a profound effect on changing the way we engage each other in face-to-face synchronous communication. The instantaneity of pushing the "send" button becomes a convenience over walking down the hall or picking up

the phone to converse. [3,4] Technology-mediated distance is not determined by physical measurement of the proximity of bodies. Rather, it is bound by the affordances, access to and a limitation of information technologies.



*Fig. 2 Carolina Beach, North Carolina*

There is a need for us to understand "the new habits, routines, and behaviors we are confronted with that we may have to learn or unlearn" [5] as information technologies impact methods of communicating, doing business, and engaging in activities of leisure and work. There is an impending oxymoron of epic proportions as information technologies designed to enhance global connectivity are driving a wedge between people who co-inhabit physical locales. It is not uncommon to witness small groups of friends sitting in a social location, each on a mobile phone engaged in separate conversations. Whole generations of youth (and adult) cultures are growing up thinking its appropriate behavior to ignore friends and colleagues in their immediate physical presence while engaging others connected through the telecommunication pipeline. It has become a cultural norm to discuss personal matters in such a public manner to objectify others within earshot or allow ourselves to be objectified in our day to day real world encounters. This phenomenon has been called "temporary intimate zone" [6], a descriptive condition of the mobile generation that creates bubbles of pseudo privacy and detachment from others as they use electronic devices to connect to other spaces. This international condition of 24/7 connectivity alienates people from people, objects and potential discoveries in their physical environments.



*Fig. 3 through 6 : Methods to facilitate dialogue, discovery of common ground, fun, argument and negotiation exist in activities from table top puzzles (HCIC and Family Reunion), LEGO design play (Serious Fun) and community activist theater (Boal TOP Theater).*

This is an opportunity for creative practitioners (e.g. artists, designers, and architects), critical theorists, community workers and technologists to work together in transdisciplinary research efforts to develop information technologies and new applications that facilitate discourse, argument and negotiation. The goal is to enable people to become visible, present and active in the public sphere. The theory of critical creative technology is founded on a confluence of theoretical models that promote engagement of others in the public sphere. This social cartography [15] includes philosophical inquiries in pragmatism, communicative acts, critical theories of technology and creative digital media practices. Particularly, creative digital media practices that explore the repurposing of common ubiquitous technologies for novel social networking projects.

For example, the New London Group's theory of multiliteracies supports the juxtaposition of different languages, discourses, styles, and approaches by incorporating design thinking as an integral process in the development of meta-cognitive and meta-linguistic abilities. [7] This concept is also supported by theories of design including wicked problems in design, design-ability, the reflective practitioner, and metadesign. [8,9,10,11] *Re-design*, the most transformative of the design processes, as identified in the theory of multiliteracies, involves the making of new meaning, knowledge and understanding from current discourse. To transform meaning is to transform relationships among people and to transform the individual through the process of examining, deconstructing and negotiating a new common ground for discourse and learning. Tools developed to support the process of re-design support the concept of the individual as constructor of new designs that become the building blocks for new realities. These tools empower the individual to transform meaning and catalyze change in the relationships between self and others. To re-design is to not only think outside of the box, but to get out of the box, disregard the box, change the form of the box, or destroy it, in order to build a more encompassing and inclusive shell that supports the task of finding or inventing new solutions to solve wicked problems.

### **Critical Creative Technologies**

The theory of critical creative technology is founded on three premises:

(1) **place as connected space** The public sphere, both physical and virtual provides fertile ground for the design of critical creative technologies that catalyze and facilitate discourse, negotiation and discovery among its occupants. This premise is supported by theories

that define space as a logistical construct and place as a contextual construct. Edward Hall notes that “space perception is not only a matter of what can be perceived but what can be screened out.” [12];

(2) **intersubjectivity and experience** Critical creative technologies provide tools that enable people to excavate intersubjective experiences that may be acknowledged but most likely remain unexplored. This premise takes its lead from Thompson’s theory of enactive cognition and Dourish’s embodied interaction. It seeks to make visible the constructs used to support empathetic experiences. [13]; and

(3) **Encouraging Discourse through Constructive Play.** Play as an agent of negotiation and change can be used as a tool to make stronger lived connections between people and communities that are weak and/or unrealized. The concept of play is global to all cultures past and present, even though method, technique and value proposition of play have differed from Kant’s view of play as a distracter from rational thought to Schiller’s *spieltrieb* (play drive) as a catalyst for dialogue, reconciliation and healing. [14,16]

By observing the three premises of critical creative technologies tangible *social interfaces* are designed to fulfill the following five goals:

**Observe** human interactions in public spaces, not as a means of surveillance, but to publicly display, illuminate and reflect upon social interaction patterns, to reveal the *language games* and strategies of interaction in public spaces. **Integrate** advanced IT technologies (e.g. computer networking, multimodal and agent software, local and global logistical identification methods) with practices in the interactive arts, interaction design, contemporary critical theories and project-based learning theories as a means to

celebrate, critique and provoke current practices in human computer interaction, new media art and interaction design. **Engage** by designing activities using tangible social interfaces that are both reactive and receptive based upon participant’s interactions with each other and the tangible interface as a means to engage the public sphere into being visible, present and active. **Aggregate and Analyze** information input into the system by participants directly and through their interactions with the interface to generate inferences about the relationships, differences, synergies and dissonances inferred using the *semantic engine* – a rule-based “inference” engine that for the development of speculative software. **Give** an enhanced reflection back to the participants that picture them simultaneously as individuals and members of a collaborative effort. Thus leverage the interactive patterns in the space as a means for supporting the participant as designer and participant as re-designed by the discovery of broader communities of interest.

### Constructed Narratives Project



Fig. 7. Demo of Constructed Narratives at the Kiasma Museum of Contemporary Art, Helsinki, Finland, (2004).

The *Constructed Narratives* project prototype is an experiment in the research and design of tangible social interfaces for general public spaces where people gather (e.g. coffee houses, hospital waiting rooms, and airport waiting lounges). To construct is to creatively invent one’s world by engaging in creative decision-making, problem solving and acts

of negotiation. The metaphor of construction is used to demonstrate how a simple artifact – a building block – can provide an interactive platform to support discourse between collaborating participants. The builders' action of arranging and rearranging the physical blocks artifacts supports a process of empowerment. The builder negotiates structural solutions simultaneously with her collaborator(s) and the topic of discussion as revealed through the semantic layer in the virtual replication of the built structure. The builders are co-constructing a social architecture in which they have ultimate design authority. This is a world in which they are the material from which that richly contextualized intersubjective world is made. [17]

*Constructed Narratives* is a construction kit of connectable blocks that form a mesh network. This tangible social interface is designed to respond to each builder based upon his/her profile and interactions, with the blocks, as they collaboratively build abstract structures with other builders at the game table.

*Constructed Narratives* is not simply a smart construction kit connected to a computer for tracking component configurations. Rather it is a system that follows a philosophical premise of designing interactive technologies to serve as public discourse mediators or discourse wranglers.

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