Redefining Digital Audience :: Models and Actions

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Abstract: This paper presents a new theoretical model for audience participation in the context of HCI. Such a model is necessary because, while a great amount of new interactive solutions are unveiled each year, the assumptions in regards to users' roles remain largely unchanged since the dawn of the computer era. This paper questions these roles and articulates a number of principles that interactive environments must employ to bring about *new audiences* – active communities based on the principles of non-idiomatic improvisation. This theoretical exercise is supplemented by a brief description of the Emonic Environment, our system for creation, modification, exchange, and performance of audiovisual media in an improvisational fashion. The paper concludes with a description of system's ongoing expansion into the domain of mobile multi-user collaboration.

1 Introduction

The users (referred to as *audience* throughout this paper) and the machines are locked in a no-win tandem: computers are regarded as deterministic boxes, blindly following the command of their masters; the users are incapable of changing the course of the program behavior. In the prevailing HCI paradigms the interaction between the two is thus usually limited to audience 'optimizing' the behavior of the machine, or just tagging along.

In this paper we set out to question the role played by the audience, proposing an alternative participatory model, that of the *new audience.* The new audience model (NAM) aims at bringing about a new type of computational interactivity, one with no clear boundaries between types of participation or the roles played by individual participants in the process of content production.

The NAM is rooted in non-idiomatic improvisation, an exploratory process unconfined by a particular stylistic idiom (Nemirovsky et al, 2003). Members of new audience are non-idiomatic improvisers; their performance is conceived as never-ending, going on at every moment of their lives, yet no continuous participation is expected; they are always free to step aside, unconstrained by the obligations of a traditional performer. Unlike a traditional audience, their role is subversion and creation of new meanings rather than mere consumption. Systems built for the new audience should encourage free exploration and continuous creation of travel paths throughout the media space.

The ideas presented here are not new; media theorists (Stafford, 1999), philosophers (Deleuze & Guattari, 1987), and artists (Cage, 1966) have been articulating similar concepts for the last 30 years. In NAM we try to connect the principles articulated in these works and our needs as an audience, bringing an alternative set of ideas to the world of HCI.

Let's begin by asking ourselves – what do we, the computer audience, lack in the digital world of today, and how can we fill these voids?

2 Roles and Models

2.1 Audience, not Users

Nowadays there is more disparity than ever between the de-facto treatment of the computer audience and the needs this audience has. Traditionally, *audience* used to mean a group of people, fixed in space and time, brought together by a shared interest in the subject of a performance.

Who is, however, the audience of the computer world? Is it the rich, the young, the black, or the Spanish-speaking? In an attempt to refer to all of them at once, the term 'users' has been devised. The connotations of this term are highly suspect; the computer 'users' are different and regarding them all as *users* denies the uniqueness of the individuals and

the communities behind it. Moreover, the term itself implies an act of consumption rather than production. Everything that is special about the participants and the performance (for what are our interactions with the computers if not a type of a highly ritualized performance), the minute details of participants' creativity, all these are gone.

Therefore, as a first step at restoring the creativity of the 'users', we will refer to them henceforth as 'audience', in its active, Happenings (Nyman, 1999) sense, thus highlighting the insufficiency of the 'user'-based approach to HCI.

2.2 What Do People Want?

Traditional approach to HCI views the audience of computer users as a type of traditional audience, capable of little more than providing an estimation of machine performance or performing tasks with a clear goal in mind, never deviating from a set objective. Equally, the computer is thought to be useful only insofar as its behavior is deterministic.

The tools available for interactive experiences reflect this problem, posing an obstacle even where a clearly expressed desire for communication exists (e.g. consider the so-far fledging attempts by Kodak, Sony, and many others to interest wide masses in net-based movie- and picture-sharing). Might it be that there is something fundamentally amiss in the principles of cooperation designed into our environments for the creation and exchange of media? Here are just a few missing links:

1. There is a working assumption that the masses wish to be entertained yet don't want to be creative in a way that would entail not following a particular script. In other words, the masses are assumed to be good at following and bad at inventing.

2. Whenever an ordinary member of the audience has a desire to create, the available venues are extremely limited, all of them being completely deterministic (the point becomes clear if we look at all of the media software that comes with Windows or the major audio/visual design programs). These venues are also rarely real-time; a drawback that incidentally explains the overwhelming popularity of instant messaging, the only real-time interaction venue for most members of the computer audience.

3. The audience members are severely punished for any 'mistakes' they make while creating, be these mistakes technical, thematic, or else – the only salvation is usually the 'undo' function. Taking risks is never encouraged and is frequently discouraged.

4. The type of interaction within most computer programs encourages specificity of roles to be played by the audience members (participants as

experts). As a result, discrete actions rather than the processes are highlighted. The objective is always of completing a 'task', with the terminology alluding to an ever-present 'optimal solution': programs are to be operated by 'experts'; users are to be helped by rigidly dysfunctional 'wizards'.

As a result of these limitations, audience members do not have a proper framework to express themselves. Their creativity is considered illegitimate, not useful. Yet, that creativity of the 'everyday man' is powerful and easy to see; it does not however conform to the stereotypical creativity of the Western society, that of the lonely genius. It also does not conform to the economic objective of Western creativity, focusing on the fun of the invention process itself rather than creation of a marketable, "unique" product.

People always create – they sing songs, argue about politics, dream of traveling. Such natural expression however runs contrary to the accepted computer practices. In the computer world, with its rigidly defined scopes of 'usefulness', people's everyday creativity is denied, being filtered out or worse they are penalized for doing things "wrong".

Indeed, in their creative thinking people rarely if ever have a clearly specified set of objectives; they are notoriously bad in defining what they are after, yet are pretty successful in defining what they would like to avoid. They hate being corrected (try writing poetry in MSWord) yet don't mind being suggested (things that have more substance than the spelling check and are less repetitive and tiring than the Office Clip). Sometimes they also want to break free, subverting the system in every way possible with the maximum dramatic effect, yet want to remain capable of interacting within the system and letting the world know about their actions.

We believe that enabling such expressions must become one of the main objectives of HCI.

2.3 Missing Content or Audience?

These days the lack of media content for use with all the newly available bandwidth is a popular common place, mentioned by CEOs and technologists alike. If only, the saying goes, there would be enough high-bandwidth content, and a framework to use it in – the mystical "killer app" – our protagonists, the average Westerners, would be hooked, by every possible means, at every single moment of their lives, always demanding faster and better access. If only we would come up with that "killer app" and the content to populate it with.

This presumption is invalid, for it purports to operate on the net, a medium inherently different

from the TV, yet treats it in the traditional framework of passive consumption. The difference between the two is not in the amount of "interactivity"; it is not in the medium employed or in the interface; whether it is text or 3D is of little consequence. The interfaces might be interesting in their own right but the McLuhanesque focus on the medium rather than on the participant – the belief that it is the medium that determines behavior rather than the individual making the meaning out of using the medium – so far resulted in a failure to change the prevalent patterns of Internet use. That is, so far the most significant uses of the net by a bulk of its users have been (and remain) checking for email, porn, and mp3s, with the Internet largely regarded as a dysfunctional database or, at best, an inefficient sibling of the telephone.

The "medium is the message", coupled with technological positivism, led us nowhere interesting for it ignored who, why, and in what ways would want to change, subvert, and otherwise adapt the technology to their liking. In other words, it obfuscated the true meaning of 'interactive', taking it to mean a per-action response rather than a pro-active participation in the creation of the media and its structural associations. No wonder then that what was meant to be intelligent turned out to be rather annoying and unintuitive – people just don't think the way engineers do.

Koza's ideas about the driving force of science – the strive for simplicity, convergence, conciseness (Koza, 1992) – can equally be applied to how the audience is typically viewed in the computer context: simplified (focus on only particular features, rarely time- or context-dependent), convergent (users as demographic groups, clustered and profiled), and concise (once the consumer profile is made, no tools are given to the consumer to break this profile or even explore / reflect on it (unless we count the attempts at 'personalization' which is largely about adapting the cosmetics of the delivery (what color should I make your fonts) or the crudely immutable thematic (would you like news about sports or sex))).

Realizing the need to complement the advancement in technological means with an accompanying change in our practices of use, we need to reconsider the very notion of Internet audience as it stands now. Without such change, we resort to merely stretching the fixed notions permeating the traditional entertainment model, with our protagonists, the Internet users, assumed to be more or less like the traditional TV audience, immutable in its principles of play, and desiring for

only a minor click-get interaction. To break free of this outlived model, we need the *new audience* as an alternative in terms of action and consumption, more relevant to the needs and desires of people in the upcoming über-connected era. As the new audience acquires better tools for expression, we might see formation of diverse improvisational communities, and as a result, emergence of new unforeseen behaviors and content.

2.4 Searching, Planning, Goal-making

People are naturally curious; they are always looking to experience/contribute something new, getting bored of repetition. Why then virtually no interfaces for improvisational exploration of media are available?

The reason might be partially rooted in the manner in which computational culture regards search; it is assumed that the objective of any search is always a given artifact. The search is thus linear, with a clear outcome as its immutable objective.

Existing audience models largely follow the ideas articulated by Barthes (1957) among many others – the audience is relegated to decoding whatever message the performer (producer of the message) happens to present for their consumption. The goal is therefore set through a fixed expectation and is either achieved (i.e. satisfied) or missed (if what is perceived conflicts with the goal (i.e. a fitness function) as defined in advance).

Barbara Stafford (1999) describes the process of making a visual analogy as an act of creating a third "mediating" image, one that is never finalized and is always in the process of change. We can think of shaping that image as the type of search to be performed by the new audience; a form of subversion of any originally intended meanings.

In the context of the NAM, audience-driven creation and exploration of paths connecting the media space constitute how the space is perceived; the goal is the process of connection itself, not a resultant artifact or an optimized path leading to such. Therefore, the NAM's notion of plan is not about following and adapting, but rather about circumventing and breaking the imaginary rules established by members of the audience at that point in time. The notion of plan as a continuous and fixed structure is nonexistent. Any resulting conflicts between the perceived and the expected can therefore be considered positive, creative ones.

2.5 Sequence

The new audience's view of sequence is improvisational as well. Here, sequence is defined not as a linear perception of events with well-placed

connecting links, but as an emergence of continuously new and unexpected juxtapositions of entities resulting from active perusal of the incoming perceptual stream as shaped by context and memory.

In other words, nothing is ever connected through the same route in the same way twice – for each use of a connecting route modifies that route (be it a recall from memory or observing a situation encountered before). To allow for the new audience, we thus need to enable exploration of multiple sequence paths at the same time, and institute a way for evolving the existing paths.

2.6 Notation

Western musical notation emerged as an attempt by musicians to keep a permanent record of their work, as the complexity of it grew. In the context of new audience however, there is no reason to try and develop a fixed recording of audience activities; instead, the notation should be about proposing alternatives rather than recording replicas; notation is to be utilized in creating new, rather than merely reproducing the old, acting as a type of an evolving suggestion mechanism. In the context of new audience, notation shall also allow visualization of the rapidly changing topologies of the improvisational landscape, and provide a way for description of processes rather than discrete events.

2.7 Environment

For the traditional audience, context is irrelevant; a Mozart's Sonata is Mozart's Sonata no matter what. If context manages to manifest itself, it is regarded as a failure to uphold the purity of the perception and interaction (in other words, noise is to be filtered out). Such paradigm is still prevalent in today's interfaces for HCI; an oddity given that it has been all but discarded in the art world of the last fifty years. Incorporation of the unforeseen by Cage and many others (Nyman, 1999) signaled a different treatment of contextual 'noise', its integration rather than filtering. In the computer world however, the audience still doesn't possess the tools that would allow its members to incorporate their personal differences (not those of the initial creator) into the art in real time. To complicate things further, unlike in the art experiments of the 1960s, the net audience is not static; it might consist of five people now and five hundred a minute later.

Interactive environments of tomorrow need to address the fluidity of new audience and the multiplicity of contexts it brings. NAM-based systems for media creation should make it possible for members of the new audience to incorporate and experience such time-and-space specific contexts, underscoring the role of context in shaping the meaning of the performance as well as the improvisational nature of meaning-making.

What are then the units of meaning that we can think of when designing systems for the use by the new audience?

2.8 Audience and Units of Meaning

Our understanding of units of meaning (UOM) shapes our appreciation of the audience. The word audience, as it is traditionally used, implies a monolithic category where meanings are absorbed and not constructed. We propose to de-essentialize the concept of audience, making it less monolithic and decentralizing meaning from object, thus also making away with the notion of a UOM fixed along the social, structural, or other axes. Such alternative UOM is created and distributed not along any ideological or social lines, but rather is a much more complex phenomena not being fully explained by its relationship to a particular structural or social code and only understandable as such in certain moments of its existence (limited to what Varela (1991) would call the non-mindful, conscious moments).

Thinking about UOMs is thinking about how the audience perceives, analyzes, and acts. The *new audience* is conceived as a conglomerate of humans exploring the media space and computerized perceiving/cognizing agents continuously providing new structural and perceptual components for that space. The new audience is not present in one time or space, similarly to how the true audience of any performance is not the people sitting in the hall and watching the stage but rather those that find themselves influenced by the performance, be it through a recording, a hearsay, or else. For members of the new audience, being a part of it becomes just one of their social functions, performed in parallel with many others. The performance goes on with and without particular members; for most of the time a given member of its audience might be busy with activities other than the performance itself, present only when he has a desire to create.

2.9 How to Make Almost Any Narrative

Presuming that a given knowledge system constructs a narrative, we suggest that the development of a narrative is guided by a process of continuous change and shifting of meaning. According to the traditional view, a narrative is a collection of events, scheduled somewhat sequentially and purporting to guide us from point A to point B, in a most optimized of ways. In other words, this assumes the existence of a single meaning or narrative, thus

denying the possibility of the existence of multiple meanings and multiple narratives.

This is essentially Barthes' idea of a single ruling narrative as expressed in his explanation of mass-culture myths. It is also the sort of idea of narrative assumed most recently worldwide by multiple agenda groups professing anti-globalization, technological determinism, environmentalism, etc. That is, these groups assume the existence of one single narrative of globalization, one single narrative of environmentalism, etc. This idea of the "single narrative" is not only unethical for its silencing of alternative voices but it can be further thought as highly harmful to the social fabric. By silencing the voices of the myriad of alternative narratives it limits the natural evolution of ideas and kills the potential of divergent narratives to effect change in the main social structure. That is, the idea of the single narrative (no matter whether it is the single narrative of the Left or the single narrative of the Right) becomes one of the main enemies of emergent forms of resistance. That, however, is a topic for a different article. It is suffice to say that such view of narrative doesn't take us very far.

The more sophisticated, but also traditional view of UOMs is that proposed by Minsky (1985) – with each UOM being an agent with some limited autonomy but ultimately respondent to a quasi-hierarchical meta-structures of control. This view, holding its premise of validity in the notion that it is the common sense (which for Minsky can be universally and a-historically defined) and therefore is real, is more convincing than the former. Minsky offers some brilliant insights into how some of the structures of the narrative of the world around us might look like (e.g. pronomes).

The problematic part of such view of common sense has however been articulated a long time ago by Sapir (1921) who believed that common sense is a set of ideas that we agreed upon a long time ago and so they became common sense, while in reality it is just a matter of agreement (also articulated by Foucault (1973) as the episteme). Both Foucault and Sapir suggest that there is not a universal a-historical idea of common sense, and that the common sense is a self-contained system of meaning.

This makes the possibility of a common-sense based system problematic for two reasons. The first one is that since common sense might be defined as historical and contextual, it seems hard to build a system whose common sense knowledge would be valid anytime anywhere. Second, if common sense is a self-contained system of meanings then how can we find a vantage point from which to collect common sense knowledge, that is, how can we become aware of the common sense or in Foucault's terms how can we represent the representation. On the other hand if we think of common sense not as a coherent set of knowledge but a set of knowledge that contains potentially contradictory fragments, we have to face a different set of problems in the construction of our system (e.g. we would have to choose whose accounts of common sense knowledge we consider legitimate). In any case we need to accept the fact that such system won't be able to make universally 'right' decisions.

The problems of common sense knowledge can be easily further illustrated by exposing two contradictory notions of common sense: most people in the West would look at a picture of a person in a landscape and agree that the image of the person constitutes the foreground and the landscape the background; that is for us the "common sense." However, if we ask an aboriginal Australian who does not share our individualistic fascination with the self he might answer that for him the landscape is the foreground and the person the background; that is for him the "common sense."

Dunne (2000), coming from a completely different standpoint (that of design) makes a compelling argument that is probably one of the most powerful in the context of this discussion; that is the notion of a post-optimal object. The notion of the post-optimal object is rather simple yet contradictory to our notion of technological progress; Dunne himself sums it up beautifully, saying "If user-friendliness characterizes the relationship between people and the optimal electronic object, then user-unfriendliness, a form of gentle provocation, could characterize the post-optimal object."

This idea of the post-optimal can also be found in Mitsuko Ito's work on the SimCity (Ito, 1996). In that work, Ito writes about how the makers of SimCity market not only the game itself (which is constructive, and rule-based) but also secret subversive codes (distributed over the net) that allow breaking the game; her point being that while for the SimCity's company it is a market strategy, it may well go out of their hands and become a way of subverting the commodity and the meanings of the game. Thus for her the narrative comes through the users building their own narratives around a commodity, thus subverting the mainstream singular narrative offered with the commodity with their own (the example she offers describes how children subvert the narrative of SimCity from a narrative of progress to a narrative of violence and destruction).

From a time-based point of view, it seems that interesting timing of the requests for change can alone guide the optimization process that shapes the meaning of the narrative. In this context, post-optimal objects are seen not as obstacles to the progress but as the pinnacles of the process of narrative construction – any object is incomplete without human input, and is always on its way to be dissolved into nothing over time, saved from its fate only by a continuing human attention.

Perhaps, in creating a standardized economical UOM (a feat attempted by economists and philosophers alike) the problem has not been a culturally - politically - historically non-optimized nature of the proposed UOMs, but rather the fact that the UOMs were some*things* – that is, immutable from today to tomorrow, from place to place, from sunrise to sundown, from person to person. If this assumption is correct then whether or not a UOM is emergent does not matter; an emergent quality might help but it will not have the desired effect if it is only emergent as a property of optimization. For it to be representative, the UOM should be continuously malleable, its unique value defined at every given point in the course of exchange between it and other UOMs. This reasoning is based on the premise that a UOM is only shaped in the moment of its use, but its use is continuous and its value is not at a point but at a continuum of interesting evolutions it undergoes in the course of the exchange (similar to the 'value' of an old passport with many countries' stamps or a guitar that used to belong to a dead rock star or any other similar fetishized agent, 'alive' and never in its final state). In the context of anthropology of art, some objets d'art are regarded as parts of a narrative of social exchange and become locations of social relationships. As such they have a history of their own, always changing yet always unique.

2.10 Things That Think (but Do Not Desire)?

Let's consider one more example of thinking about UOM; that is the one where the UOM is neither integral to the object, nor to its social/cultural context but to the change of the emotional dynamic, a UOM that connects between our self, an object, and a memory, is recreated every time, sometimes with and sometimes without our own volition (an idea tangential to Varela's idea of mindfulness and Stafford's analogical UOMs). An example? How about an old (yet functioning) computer or a drum machine? Anyone who has played with an old machine knows that it is akin to playing with memories – the UOMs are not in a particular knob

or a switch, they are not linked to particular predetermined functional or social construct. Instead, these UOMs overcome our "narratives of progress" that traditionally hold that an obsolete machine is to be vilified (Auner, 2000) and let us go right past the social constructs considered dogmatic just a moment ago, thus reterritorializing (Deleuze & Guattari, 1987) our notion of socially or functionally accepted (e.g. today an old drum machine can command a higher price than a new one; a fact that has to do with many factors but what I would call the possibility of a progress of Varelesque "mindful states" being one of its selling points).

Smith and Murphy (2001), while thinking about what constitutes a viable theory of contemporary music come up with a simple definition: such theory must be "descriptive of existing musics, and enabling of future musics. Deleuze and Guattari's theory meets this criterion." And indeed, D&G's theory of the rhizome fits well with the ideas of new audience described in this paper. The rhizome does not start in the beginning but in the middle, allowing for assessing elements on the move and evaluating the entities comprising the system not as fixed blocks but as changes in connection and juxtaposition. As Smith & Murphy put it: "music can be said to be made up of mobile or "floating" blocks of sound that enter into composition with each other on the smooth space-time of a cosmic plane, outside of points, coordinates, and localized connections, in a "non-pulsed" time (non-tempo) made up of nothing but modifications of speed and differences in dynamic. There is no longer a predetermined "plan of organization" to be recovered or inferred, but only a "plane of consistency" on which these blocks of sound or "percepts" enter into various connections, convergences, and divergences. In Deleuze and Guattari's terms, these blocks form a rhizome." Presenting the new audience with a rhizomatic interface might be instrumental in liberating its members from the constraints of the traditional, passive, approach.

3 Implementation

3.1 Inspirations

The last few years have seen a sharp increase in the amount of tools available for various types of improvisational performance and human computer interaction. Among the inspirations for our work are Marceli Antunez's interactive performances (Jorda, 2002), Chris Janney's (2001) public installations,

Sommerer & Mignonneau's (1998) networked art, Vasulkas' (1998) video installations, and countless others. Among recent projects worth mentioning is Amsterdam Realtime (2002), an exploration how mental maps of Amsterdam kept in the heads of its residents can be visualized through examining their mobile behavior. Finally, an entire crop of media systems that employ improvisational / evolutionary principles has emerged; two examples of such are Voyager (Lewis, 1999) and ChaOs (Miranda, 2001).

3.2 Emonic Environment

The Emonic Environment (EE) is our framework for creation, modification, exchange and performance of audiovisual media in an improvisational non-idiomatic fashion. What follows is a brief description of the EE's architecture and operation.

The EE has three core layers: Input (interfaces for sampling), Structural (a neural network providing structural control), and Perceptual (direct media modification). Let's take a look at each layer:

The Input layer consists of tangible and software interfaces that sample information from the outside world (e.g. microphone, video camera, custom gestural controller called the Emonator). The aim of the Input layer is to integrate the world surrounding the audience into the ongoing improvisation. The input received from each interface is used to control functional elements of the three layers.

The Structural layer is a recurrent neural network, populated with nodes and weighted connections (or 'associations'). The network and its nodes / associations have properties that can be modified in real time. These properties define the axes along which the network is seen and evaluated, either explicitly by the human or implicitly by a built-in evolutionary process. In other words, every network defines a set of available properties $\{P_{1..n}\}$; each of these is assigned a discrete value V at time t. Thus, $S_{\{t\}} = \{V_1, V_2, ..., V_n\}$ where V_i is the value of property i at time t in the Structural layer network S. By designing the Structural layer into the EE, it might be possible to evaluate improvisational behavior within the context of network's activity, aiming for a deeper understanding of media patterns in terms of their underlying structural antecedents. Such evaluation will allow the EE to offer new non-random paths of exploration of media landscape.

The Perceptual layer is populated with emons – constructs that receive outside data and map it onto directives guiding creation, modification, and presentation of media. Each emon has one function that has a few mutable properties (e.g. amplitude). The emon modulates the properties by receiving an array of data points (generated dynamically or stored in memory) and processing them according to internal rules. Emons currently operate on sample-based Audio and Video. The samples come in one of the three forms: (1) Prerecorded (from local and remote EE databases), (2) as a real time input (from a microphone / video camera) and (3) streaming (from a URL). The first crop of emons that perform audio synthesis is in development and should be available soon. Emons that operate on text (sampling and generation) are currently being planned.

Running an evolutionary process within the Input layer is aimed at controlling the mapping between an input interface and the layers' properties that interface controls, shaping the way external input affects the overall system.

In the Perceptual layer, the planned evolutionary process will affect how an emon responds to various forms of input as well as its connectivity to other emons and Structural layer's nodes.

Elements in the Structural layer are possibly the prime target of the evolutionary process. Through evolution the connectivity of the network as well as the properties of individual nodes ripens, developing a complexity as a whole which may never be found manually. Just as the brain of an animal evolves over time to suit its environment, the brain of the EE evolves to suit a performer in a given context. Snapshots of the Structural layer taken at any given time $S_{\{t\}}$ can be used as a type of *magnets* guiding the evolutionary process. The magnets either attract or repel the current state of the network toward or away from the magnet, thus producing interesting phase trajectories in a performance.

While the functionality of the EE is still far from addressing the needs of the new audience, the system is already capable of offering interesting audiovisual sequences / patterns. These patterns can be modified, followed, or subverted in a manner compliant with the NAM. The EE doesn't assume any predefined notion of UOM; rather the high dimensionality of the information is preserved. The audience is encouraged to seek meaning in the connections rather than in the elements, leading to a different type of media exploration: loading up an array of choral voices yields a satisfying series of choir music arrangements; combining string orchestra recordings with the political orations of Fidel Castro produces an unexpected combination of comedy and drama. The EE has been met with enthusiastic reactions by an initial testbed of non-professional performers, who have been spending hours playing with the system, commenting on how it reminds them of one band or another.

3.3 Mobile Implementation

We have recently started working on a mobile component for the Emonic Environment. The goal is creation of a mobile platform allowing people to create content on the fly, sampling it on the go, sharing without specifying how and with whom, always being a part of a process of exchange, trading media snippets as well as their connections in a fluid and instantaneous manner. One could think of it as a distributed real-time audiovisual weblog.

Beyond the obvious technological challenge in designing a system allowing rapid contribution of materials from around the city, our interest is in inducing Happenings-like behavior, according to the NAM's objectives. The Happenings of the 1960s were premised on the idea of providing a predictable output for an unpredictable input (e.g. 'raise your right hand slightly every time you see a red car driving by'). With the system capable of providing both disjoint media artifacts and instructions such as the one above, we hope to bring about an entire range of improvisational games based on the context and specifics of the artifacts being gathered.

To this extent we are working on two different mobile configurations. In the first, with Compaq iPAQ serving as our platform, we can record audio and text messages, as well as play back short video snippets. The iPAQ communicates over an 802.11b network. In the trials (still a few months away) we plan to ask the audience members to use the iPAQs for real-time data gathering and exchange.

Just recently we started developing a second, cell phone based configuration. The objective is to convert a Nokia video-enabled cell phone into a media gathering and sharing device, making use of ongoing audio conversations as well as pictures taken with the built-in camera, bringing both streams into a continuous collaborative net performance.

4 Conclusion

This paper presents a work in progress; we outlined our proposal for audience participation, compared it to non-improvisational participatory models and briefly described the ongoing development of the Emonic Environment, a distributed system for media creation and exchange that puts the idea of the new audience into practice.

It is our hope that the usefulness of the proposed model will go beyond creation of art, leading to improvisational interaction between people and machines, particularly in the domains of entertainment and learning.

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