23 talented and diverse minds from around the world
Media Lab Europe

Media Lab Europe is the European Research Partner of the MIT Media Lab, which was founded in Cambridge, USA in 1985 by MIT Professor Nicholas Negroponte and the late Jerome Wiesner (former President of MIT and former Science Adviser to President John F. Kennedy). The MIT Media Lab is credited with the development of now-familiar areas such as digital video and multimedia, and for the initial research into the convergence of computing, publishing and broadcasting.

Media Lab Europe was founded in 2000, and has grown to a 100-strong Laboratory, housed in two 19th-century buildings that were previously part of the Guinness brewery. The laboratory is an emerging world-leader in research and innovation, in fields that will transform the way people live, work and communicate. Central to the Media Lab Europe philosophy is the belief that new possibilities and technologies are discovered at the boundaries of the sciences, humanities and the arts. This truly multi-disciplinary approach allows for a unique environment to explore advanced research and applications.

Media Lab Europe works in partnership with industry, and has developed a steadily-growing partner community that includes major players in the European telecommunications and applications/services sectors.
contents

introduction 006
alison wood usa story networks 008
andy brady ireland palpable machines 010
brendan donovan usa everyday learning 012
brian duffy ireland anthropos 014
catherine vaucelle france story networks 016
cian cullinan ireland human connectedness 018
david reitter (EU) germany adaptive speech interfaces 020
deirdre butler (HEA) ireland everyday learning 022
erin panttaja (EU) usa adaptive speech interfaces 024
ian oakley scotland palpable machines 026
james auger / jimmy loizeau united kingdom human connectedness 028
<table>
<thead>
<tr>
<th>Name</th>
<th>Country</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joëlle Bitton</td>
<td>France</td>
<td>Human Connectedness</td>
<td>030</td>
</tr>
<tr>
<td>Julian Moore</td>
<td>Ireland</td>
<td>Human Connectedness</td>
<td>032</td>
</tr>
<tr>
<td>Jussi Ängeslevä</td>
<td>Finland</td>
<td>Palpable Machines</td>
<td>034</td>
</tr>
<tr>
<td>Marije Kanis</td>
<td>Netherlands</td>
<td>Human Connectedness</td>
<td>036</td>
</tr>
<tr>
<td>Michael Cody (EU)</td>
<td>Ireland</td>
<td>Adaptive Speech Interfaces</td>
<td>038</td>
</tr>
<tr>
<td>Mike Ananny</td>
<td>Canada</td>
<td>Everyday Learning</td>
<td>040</td>
</tr>
<tr>
<td>Mike Bennett (HEA)</td>
<td>Ireland</td>
<td>Adaptive Speech Interfaces</td>
<td>042</td>
</tr>
<tr>
<td>Phil McDarby</td>
<td>Ireland</td>
<td>Mindgames</td>
<td>044</td>
</tr>
<tr>
<td>Robert Burke</td>
<td>Canada</td>
<td>Mindgames</td>
<td>046</td>
</tr>
<tr>
<td>Stephen Hughes</td>
<td>Ireland</td>
<td>Palpable Machines</td>
<td>048</td>
</tr>
<tr>
<td>Valentina Nisi</td>
<td>Italy</td>
<td>Story Networks</td>
<td>050</td>
</tr>
</tbody>
</table>
introduction

Media Lab Europe is an extraordinary place: a nascent, vibrant and thought-leading laboratory located in the heart of one of Europe’s most stimulating cities. Above all Media Lab Europe is the creation of the people who work in it, and this volume celebrates their successes and their role in building one of the newest and finest centres for innovation in Europe.

There is no finer advertisement for a research centre than the people who have worked there. My belief is these talented and inventive young men and women will go on to make a major impact on the European technological landscape.

Media Lab Europe offers our research associates a two-year stay in a supportive environment where they can shine brightly and explore and extend their creative powers. I hope you will agree with me that these talented and diverse minds have spent their time here well and that their achievements catalogued within these pages delight, surprise and astound you.

Simon Jones

Simon Jones
innovators// two thousand and four
I came to Media Lab Europe to be in Ireland and work with Glorianna Davenport in the Story Networks group. Glorianna's interactive cinema experience guided me to use computers, sensors and mobile devices to investigate useful connections between story & science.

The research focused on linking live environmental data with audio visual story, and structuring and designing such stories. First demonstrations illustrated weather readings by morphing images and triggering cartoons. The work moved onto mobile devices. We wanted a system where audiences navigate an interactive story outdoors in remote places, in view of the chaos of Irish skies. Using GPS and weather sensors, scenes can link to place and atmosphere. The audience's changing surroundings become a real life setting to the narration.

Here were some engaging research issues. A collection of scenes was scripted and structured: the story needed to climax, though its scenes were spread piecemeal, and it would be unknown which scenes would be viewed, or in what order. The narration should refer to what is unique about the locality, since each scene is meant for a specific setting and weather. Sensors needed interpreting. We cracked these in our way, choosing media and interaction style to suit trekking audiences.

We tested the system in the southwest of Ireland on a remote island. Viable directions for the research were identified for future use of interested parties. Meanwhile, all the great crew at the lab were bound through Media Lab Europe's exit from the womb- something that won't be easily forgotten.
alison wood - digital stories for the wild - story networks

media lab europe - innovators// two thousand and four - www.medialabeurope.org
The work of the Palpable Machines group looks at our range of senses and how we use them to interact with the computers and other devices we build. My research over the last 3 years has focussed on toy design within this context.

Relay: I came up with the idea of bringing the sense of touch into the operation of a remote control car, enabling the operator to feel the movement of the car through the handset. Data is gathered from the moving car through accelerometers mounted on it. This information is sent back in real time to the handset.

To output this information I built the ‘squeeze box’ handset. It features a motorised plate on the underside, which moves forward/ back/ left, and right in sympathy with the movements of the car. The result is a feeling of greater connection to the vehicle. As well as being a nice toy, the work of this project raises interesting possibilities for designers of control interfaces for more serious remote controlled machines.

Reaction Figures: This project looks at the idea of a dynamic action figure that can grow or atrophy in muscle size based on how it is played with. If the doll gets a lot of exercise in the form of play its muscles will develop. If it is neglected the muscles will atrophy.

Sensors located at the doll's joints track the play pattern. This information is then used to control hydraulic pistons inflating or deflating the limbs. The doll is constructed from highly flexible silicone rubber fitted over a hard skeleton.
andy brady. exploring mechanics through play. palpable machines

media lab europe. innovators// two thousand and four. www.medialabeurope.org

011
learning with a twist of time

As a member of the Everyday Learning group I worked on a variety of projects. I helped create the physical interface to DinoStable, a construction kit for building dinosaurs and experimenting with the role of centre of mass in balance. I lent a hand to Birdcase, a set of stairs with sensors linked to bird songs and their reactions to human intruders.

Electro Jewels brought together children and parents to create jewellery pieces using traditional and electronic components around the theme of communication, and I had the privilege to contribute building blocks and work with the participants.

However, the main focus of my research grew around the use of mobile computational devices as a way to exploit time as a tool in decision making. Time and time-constraints play a role in many aspects of life and I am interested in how appropriate and personalized visualizations and time filtered information might support people in utilizing their time to the fullest. I explored this with a number of projects.

Amble Time takes an average walking speed and various time constraints and creates a ‘bubble’ on a map indicating everywhere that one can walk to in that time or less.

Wait Lifter explored how real-time transit information could provide a sense of when it’s time to head for the station.

Nature Trailer followed on from these projects linking elements of narrative and weather conditions with loose time constraints while hiking in remote locations.
Once domestic robots progress from the washing machine and start moving around our physical and social spaces, their role and our dealings with them will change significantly. It is in embracing a balance of anthropomorphic qualities and their inherent advantage as machines through an investigation of their function and form that will lead to their success. The anthropomorphic design of human-machine interfaces has been inevitable. The Anthropos project has aimed to explore system-environment and specifically system-human interaction within the field of intelligent robotic systems. This is facilitated through extending the current physical world interaction paradigm in robotics to the social interaction domain through a study of the role of anthropomorphism in robotics. In addition the project develops the synthesis between the real and the artificial through the breaking of conventional barriers in the transition between the physical and virtual (digital) information spaces through robotics and virtual reality.

The following research initiatives illustrate these objectives:

- **Emotion Robots**: Anthropomorphism & Intelligent Machines
- **Uncanny Language**: Language for Social Machines
- **Vicarious Adrenaline**: Augmented Observer Experiences
- **Embodiment**: Theory & Practice
- **Agent Chameleons**: Intelligent Digital Friends (HEA funded collaboration with Department of Computer Science, UCD)
- **Nexus**: Fusing Real & Virtual Spaces (HEA funded collaboration with Department of Computer Science, UCD)

This work is instantiated in 19 publications in journals and academic conferences, numerous media articles, interviews, and invited speaking at international events.

Further information is available at [http://anthropos.medialabeurope.org](http://anthropos.medialabeurope.org)
designing transformable interfaces

The challenge for me as researcher and visual media artist is to create transformable interfaces—physical objects, videos, interactive installations—that allow any creator to engage others in questioning their beliefs. My goal is to explore the specific functions of an interface that can empower people in the exploration of new ideas, and that can provoke them to challenge their assumptions about their surrounding environment. My exploration into what I now call transformable interfaces began in 1997 in Paris VIII in the Fine Arts and Technology graduate and postgraduate programs; I have continued to explore and extend this theme as a graduate student at the Media Lab in Boston and for the last 2 years as a Research Associate at Media Lab Europe. At MLE, I have created and developed Textable Movie, an open-ended interface that allows anyone to become "a video-jockey." In the framework of computational storytelling, Textable Movie promotes the idea of maker-controlled media and can be contrasted to automatic presentation systems. The power and flexibility of Textable Movie can be evaluated in part based on applications that I have created which I did not initially envision. For instance, Textable Game extends the concept to the realm of video games. This allows teenagers to build their own games, e.g. action games, exploration games, mystery games, using their own footage and sounds, and allows them to create their own rules and scenarios. I have also developed a method for running international workshops with teenagers using Textable Movie as a foundation tool. With the UMEA Institute of Design in Sweden, I am developing a tangible interface for the Textable Movie engine.

With Paul Nemirovsky, PhD candidate in the Interactive Cinema Group at the MIT Media Lab, I have created the Mixer-Subverter, an online system that allows children to integrate the activities of play and video editing into a never-ending process of mixing and ‘subversion’ of each other’s material.

With colleagues at Trinity College, Dublin, I have explored Passing Glances. Imagined for installation in an urban space, Passing Glances invites people to use SMS messaging on their cell phones to drive the selection of images.
Working in the Human Connectedness Group for the last few years has introduced me to a huge range of disciplines, ideas and technologies. I have had the chance to work in areas as diverse as computer vision, interface design, microelectronic prototyping, wireless communication, and network design and administration.

But the most important thing I've learned is the importance of "people-centric design"; the idea of putting people first in the design process and progressing from there, rather than beginning with the technology and trying to find uses for it.

My work has mostly centered around the ideas of ambient non-intrusive connectivity, the importance of physical objects and manifestations in creating a sense of intimacy, and tailoring technologies for specific situations rather than a one-size-fits-all approach.

Projects I've worked and collaborated on include Reflexion - a novel video communications system; Open Window - an ambient virtual window for long-term hospital patients; iBand - a wearable device to facilitate natural exchange of personal information in a social context; Computer-Assisted Schizophrenia - a multi-track video sampler for improvised theatre; and One2One - a toolkit for creating personalized ambient media links for conveying togetherness over a distance.

Reflexion

One2One

Reflexion
When talking to each other, we don’t just utter sentences. We use body posture, gestures, eye gaze to communicate - all at the same time, multimodally. Communication makes sense only when everything fits together, either in a dialogue among people or in a well-written piece of text. What is it that makes communication successful and, maybe, beautiful?

An answer to this question is coherence. My research is about ways to enable people to use computers with simultaneous multimodality methods to make the interaction coherent. The underlying theme of my work is a unified view of the structures that can be found in human communication: from pointing gestures to traffic signs, from body posture to natural language; they all represent hierarchical layers of signs in varying degrees of complexity. We can define simple operations that show how the meanings conveyed in different modes augment each other in coherent communication.

One of my approaches was a machine-learning technique to detect rhetorical structure in text. Another one, Multimodal Functional Unification Grammar, allows us to generate coherent multimodal output and predict how useful a particular interaction variant seems and how cognitively demanding it would be. This judgement depends on contextual factors as well: is the user in a noisy bar, or driving a car? UI on the Fly is a project that demonstrates the viability of the approach. It produces a graphical user interface with natural language elements on the screen as well as synthesized voice output tailored to the device and the usage situation.

My work is grounded on empirical knowledge about language. I collaborated on an experimental system to collect many hundred instances of coordinated interaction in three countries. I also worked on an evaluation methodology, where we ask ourselves the final, all-important question: does the research we do actually make sense?

(David Reitter gratefully acknowledges partial support from the European Commission, grant IST-2001-38685.)
Pointing and speaking make small devices easier to use.
Empowering Minds was a longitudinal study of teacher empowerment through Constructionist learning about computational technologies and learning about learning itself.

Teachers working as co-learners with their students explored the theme, "Story, Myth, and Legend" using the Programmable Brick, developed at MIT to extend a LEGO construction kit. This technology enabled participants to build models that interact with the physical world through sensors and motors.

The materials are "conversational," accommodating feedback and negotiation; "connective," enabling learners to develop personal relationships with powerful ideas; and "challenging," as learners construct personally meaningful, in-depth and probing projects.

These computational materials, combined with the open environment, "atelier" style of working, provide the spark and intense sustaining experience necessary for challenging teachers to question their assumptions and begin to think about thinking.

The teachers’ emerging self-reflective practice enables them to better understand the multifaceted structure of the learning situation and their own relations to its social, cognitive, and affective aspects. The "Empowering Minds" study also addresses how teachers can become critical judges of technologies, in order to define for themselves and suggest for others what being digital can mean in learning. These processes have the potential to change educational strategies on personal, community and national scales. How teachers understand learning and how we conceptualise teacher learning will directly affect future generations’ potentials.

The web-based Empowering Minds Learning Network (http://empoweringminds.mle.ie) now serves 13 Irish primary schools, 24 classrooms, 29 teachers, and more than 500 students. The project is extending to initiatives within Ireland, for example the Liberties Learning Initiative within Dublin’s Digital Hub, and related efforts are beginning more broadly in Europe.
Computers are becoming more complex. They present us with pictures, movies, text, and music, and these modalities need to be customized to each person's requirements and desires. As we move toward truly adaptive multimodal systems we need a way to codify design criteria so that even as a system adapts it remains usable, and, in some sense, designed.

My research in the UI on the Fly project has been focused on generative multimodal systems and how they can deliver appropriate, informative, and useful data to the user.

FASiL is an EU consortium project to build an adaptive multimodal personal digital assistant. At Media Lab Europe we have been working on the last stage of the user interface: the screen and voice that the user sees and hears. I worked primarily on the graphical display and the phrasing presented to the user, as well as contributing to the component architecture.

In Permanent Design, I use a generous generation algorithm, creating more variants than are needed, then score those variants to control for issues that are not apparent before generation. The first project using the Permanent Design architecture is Travelog, which allows a user to access a personalized version of an annotated travel diary. Future systems will escape from the webpage model to create more detailed interactions for a single user, or for a theater full of users, that is created for the occasion and designed, by the system, to fulfill the needs of the situation.

(erin panttaja gratefully acknowledges partial support from the European Commission, grant IST-2001-38685.)
erint panttaja. permanently integrating design. adaptive speech interfaces.

media lab europe. innovators/ two thousand and four. www.medialabeurope.org
The human sense of touch, our haptic sense, is a ubiquitous part of everyday life. Haptic cues are a continual and essential source of information during the performance of physical activities ranging from reading a book, where we almost subconsciously hold and turn the pages, to participating in a sport, where proficiency in haptic interaction is highly prized and honed to near perfection.

Despite its importance in the real world, and arguably due to the fact that it is technically challenging to study, haptics has been neglected in the interfaces to computational systems. My work attempts to address this omission and has focused on attempting to understand where and how haptics can add value to interactions in the digital domain.

During my time at the lab, I have been involved in developing the concepts behind a number of the projects within the Palpable Machines Research Group.

ContactIM examined whether the emotional content inherent in physical communication – such as that found in handshakes, hugs, or even a pat on the shoulder - can be transferred to a modern digital asynchronous communication medium, such as IM, or SMS.

Touching Tales extended ideas of touch as important in establishing a sense of presence or immersion in a displayed environment by including haptic cues in traditional linear audio-visual media in the form of enhanced cartoons.

Finally, within the wider framework of the MESH project, I have been involved in developing mobile visualisation and interaction techniques that rely as much on moving and feeling as they do they on looking and seeing.
The Iso-phone is a telecommunications concept providing a service that can be described simply as a meeting of the telephone and the floatation tank. By blocking out peripheral sensory stimulation and distraction, the Iso-phone creates a telephonic space of heightened purity and focus.

The recent boom in mobile telephone usage has led to telecommunication being practiced in an efficient rather than a qualitative manner. Wireless technologies have brought about profound changes in the way we interact. The cultural assimilation of the mobile is now at a point where its ubiquity permits function with little contextual discrimination and its portable nature has led to a blurring of the real world with the telephonic. This technoschizophrenic existence conflicts with the very distinctions that make communication necessary and expressive. The telecommunications industry invests much of its time in developing extra features for telephones such as cameras and net access, with little time being spent actually developing products that enable us to talk better.

Only a couple of decades ago our primary means of telecommunication was the telephone box - essentially a designated piece of architecture providing a contextually neutral space for remote conversation, removed from the hubbub of the outside world. The Iso-phone takes these notions of context neutrality and environmental dislocation to their sensory extremes.

The Iso-phone creates a new kind of immersive telephonic space by removing the peripheral physicality of the world effectively celebrating the technology of telecommunications by considering the whole user experience not just the product facilitating that experience.
My research explores our perception of the world. How does it affect our life and understanding of others? By confronting people with intriguing or disorienting experiences, I want to challenge our assumptions and habits of urban, social and intimate environments. The projects RAW and Passages invite people to embrace possibilities of a shifted awareness in familiar or unfamiliar contexts.

People sometimes perceive other cultures as stereotypes. False perceptions are commonly fed by media images at times of extreme events. RAW aims to change this by showing moments of everyday life: when the banal reveal much about the reality of societies.

23 users tested the tool in Mali. Each participant would reflect on their activities, interview people on the streets, show friends at work, etc. This content is presented in the RAW installation.

In Passages, random passers-by experience a different kind of relationship with the city that they didn’t foresee in their journey. A public space installation puts them suddenly in contact with strangers from another city. The project is inspired by the urban poetry with which the stroller embraces the city, re-interpreting places and the surrounding architecture. The private sphere invests the public sphere that, at its turn, affects our intimate interactions.

As we wander with feelings of love, with memories, glancing at strangers, we leave traces of our passage in the urban landscape, just like vibrations distorting themselves in space.

Visual sample of the RAW installation

RAW poster
tunA is a peer-to-peer wireless application that allows users to share their music locally through handheld devices. Users can "tune in" to other nearby tunA music players and listen to what someone else is listening to; the application displays a list of people using tunA that are in range, gives access to their profile and playlist information, and enables synchronized peer-to-peer audio streaming.

With the tunA project we are investigating a way to use music in order to connect people at a local scale, through the creation of dynamic and ad-hoc wireless networks. tunA allows users to listen to what other people in physical proximity are listening to, synchronized to enable the feeling of a shared experience.

Ideally tunA is meant to work for any kind of wireless handheld device, as we see it as a possible evolution of traditional portable music players. The experience that tunA provides to users is the opportunity to feel connected to people around while listening to music and moving in a physical environment. The application is mainly targeted to teenagers and designed for social dynamics happening in urban environments, but it can accommodate a number of different usages and scenarios.

We are interested in the social effects that an application like tunA can foster, and we are considering various issues theoretically relevant for the project. Among those we want to explore are the overlap between the virtual and the real world, and the evolution of the concept of radio broadcasting and music distribution.
julian moore  .  tunA  .  human connectedness

media lab europe  .  innovators//two thousand and four  .  www.medialabeurope.org
embodied interaction design

The foundations of my work lie in embodied interaction; looking critically at existing objects in our everyday life, and attempting to see the essential in them, improving the actual function or experience they give us and not the technological legacy they manifest. The socio-cultural context and the personality of the object (or rather the experience), is then negotiated with the technological feasibility today or in the near future.

My higher level aim is to create systems, devices and objects that inspire and provoke us, are meaningful to use and exist in a very real sense of the word.

"Body Mnemonics" turns the body of the user into a three dimensional kinaesthetic desktop for portable devices, where the cultural understanding of the body is leveraged as a mnemonic aid in quickly accessing information on the move. Relating to this, our studies in hand grounded haptics provide a framework for designing multimodal interfaces for mobile context.

"Dyno - intelligent wall climbing holds" resonate my design ideology in embodying the functionality in the world. The system consists of touch sensitive wall climbing holds that can be illuminated and controlled with a computer. Instead of attempting to mimic real rock, the project attempts to look at the idiosyncrasies of indoor climbing; games, dynamic route layouts and the building of a history of the wall.

Online works like "the Album", "emoteMail" and "Imagetype" look into the privacy issues emerging from the sensor and the search technologies today, redefining what we are used to think as photo album, email client and text editor.
Body Mnemonics enables personal arrangement of information around one’s body.

The shortcuts are accessed by moving the device to different locations.
In the course of my research and as an interaction designer I have been working on connected experiences. With this I mean experiences in which you can always find and contribute a piece of yourself and which present themselves in such a natural way that the human being can see a new experience, perspective and the other human being instead of just pure technology.

In creating connected experiences, I have focused on designing interfaces that play an important role in developing an immersive and socially aware method of interaction. At Media Lab Europe these ideas were externalized through the creation of the WANDerful Alcove and more recently, the iBand.

The Wonderful Alcove is an interactive play space in which participants wield magic wands and practice wizardry. Just as a real wizard would, the participant has to learn what kind of movements to make, what kind of rhythm to use and what spells to say (e.g. abracadabra) in order to create the right magic. In addition to exploring the technology needed to build a magic wand interface, the WANDerful Alcove focuses on role-immersion scenarios in which these interfaces can have a socially transforming effect on their users, serving as a catalyst for ad-hoc interaction and constructive collaboration in a story experience. We developed the notion of a socially transforming interface with the WANDerful Alcove as a potential example.

The iBand is a social bonding device and an attempt to build an improved method of establishing new relationships. It is a wearable, context-aware bracelet that can store, receive and transmit information about you and your relationships through a handshake. I furthered my interests in the human connectedness theme and all kinds (social transforming, natural, human and intimate) of interfaces. I also continued wondering about new different digital worlds. Can technology bring us new experiences instead of just copied, digital ones?
Marije Kanis - Connected Experiences: Human Connectedness

WANDerful Alcove

iBand
WOzOS
- wizard of oz operating system

In coming to Media Lab Europe I was looking for something that combined my interest in Cognitive Science and my past vocational background in engineering. As part of the Adaptive Speech Interfaces group I found this balance in an exciting, innovative research environment.

My primary role was the development and experimental use of the Wizard of Oz Operating System (WOzOS). Wizard of Oz is an experimental evaluation method. As the name suggests there is something going on behind the scenes. It allows us to observe a user operating an apparently fully functioning, novel multimodal system whose missing services are supplied by hidden wizards. This allows the system great flexibility while maintaining the pretence that it is non-human.

All the features of the user’s interaction are captured for later analysis. This information can provide data to be used in the development of guidelines for choosing system behaviours that will optimise performance. Simulation based research paradigms like WOzOS can help researchers to evaluate critical performance and make decisions about a system’s design early on. This aids the creation of usable interfaces and systems that have valuable and viable functionality.

WOzOS comprises two parallel Wizard interfaces, which can be used to quickly assemble multimodal output appropriate to user requests. The initial experiments centred on an e-mail paradigm but the system can be extended to deal with other multimodal applications.

My work has brought our system to a stage where it has been used in a large Multimodal Interaction study being conducted in three European countries in three different languages (EU FASiL project), that is: wizardry on an international scale.

(Michael Cody gratefully acknowledges partial support from the European Commission, grant IST-2001-38685.)
michael cody. WOzOS - wizard of oz operating system. 

adoptive speech interfaces

media lab europe. innovators//two thousand and four. www.medialabeurope.org
My research has focused on understanding how public opinions develop by creating with people new forms and forums for civic discourse.

My main project has been TexTales, a public installation designed to understand how personal perspectives, when aggregated and iterated upon in public spaces, might represent public opinions and become starting points for civic discourse. TexTales displays a 3-by-3 grid of images for which people create captions by sending SMS text messages from their mobile phones. For each image, TexTales anonymously displays the 3 most recent captions such that, over time, people can see how captions interplay and how a kind of informal archive emerges.

The most rewarding aspect of this work has been designing and learning with different communities. I've led installations with Fatima Mansions (a low-income flat complex close to the lab currently undergoing a major architectural and social renewal); The Ark (Dublin's children's culture centre where we worked with young people and adults to represent attitudes on second-hand smoking); the Amsterdam Computer Clubhouse (an informal learning centre where we worked with young people to create an installation for a local train station on public attitudes towards smoking); and with BBC Northern Ireland, Young @ Art and the Bridge Youth Project (where we created an installation on young people's lives in rural Northern Ireland and their views on the sectarian conflicts).

What I loved about each of these collaborations was being able to understand better how people think about and relate to public issues, and to reflect with them on how digital technologies might help create more active and engaged publics. I think that some of the deepest insights into human nature and technological progress come from understanding everyday events, seemingly ordinary people & the places in which they live.

In September 2004, I start a PhD with Stanford University where I'll continue to investigate these ideas that incubated at Media Lab Europe.
image 1
A Dubliner sends an SMS text caption to "The Big Smoke", Meeting House Square, Dublin, October 2003.

image 2
Kids of Fatima Mansions gather around TexTales ground projection, Fatima Mansions, Dublin, May 2003.
During my time in Media Lab Europe my research was centered around the theme of "How can we augment human capabilities with user interfaces and tools?" This led me to focus in on a few core areas in Human-Computer Interaction. Specifically I've had fun working within the domains of Information Visualization, Gestural Interfaces and Auditory Displays.

Multimodal Zoomable User Interfaces (ZUIs) played an important role in the interfaces I developed. ZUIs utilise a 2D spatial metaphor coupled with the ability to zoom in and out of the 2D space. The viewport into the 2D space can pan along the X and Y axis, and move in and out along the Z axis, but the viewport cannot be rotated.

I created a range of projects loosely based around ZUIs: Nutmeg (a rapid prototyping framework and tool for creating high-fidelity multimodal Zoomable User Interfaces), Mediadive (a zoomable interface for exploring large audio spaces), and Gestural Hearing (a novel interaction technique for querying audio sources). Some other projects I implemented or was involved with include Bumplist (examine the culture and rules of email lists), Symbolify (play with converting between semiotic systems) and Rhythm Bilk (explore dissonance in body movement).
mike bennett . zoomable user interfaces . adaptive speech interfaces

media lab europe . innovators// two thousand and four . www.medialabeurope.org
I worked with the MindGames group, led by Gary McDarby, for 3 years. The group adopts a broad, multidisciplinary approach, and working with such talented people proved very creatively rewarding for me. My responsibilities involved the 3D design, modelling, texturing and animation of virtual characters and environments for biometrically controlled video games. In addition to this, I provided sound effects (including silly voices!), and composed the soundtracks for all the games.

I would have to say Relax to Win was a big highlight of my time at MLE, a game which Daragh McDonnell and myself designed - it has been wonderful over the last couple of years to see people from 7 to 70 getting a kick out of playing it, as well as seeing the success of its clinical trial at the Mater Hospital.

Working on Mind Balance with Rob Burke on the engine side was a brilliant experience, and creating Peace Composed, a multi-layered orchestral piece which deepens with relaxation, was fantastic fun. Overall, working with Gary was the clincher - his passion and enthusiasm never failed to inspire me.

Cheers to everyone who made the 3 years such an amazing experience.
phil mcdarby · 3D game design / music composition · mind games

image reference

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mind Balance</td>
</tr>
<tr>
<td>2</td>
<td>Heart of the Glade</td>
</tr>
<tr>
<td>3</td>
<td>Relax to Win</td>
</tr>
</tbody>
</table>

media lab europe · innovators // two thousand and four · www.medialabeurope.org
symphony in C# - a framework for real-time biomedical signal processing and visualisation

My technical contributions to the lab have grown out of the design and development of the Symphony framework for signal processing and visualization. The MindGames group has worked together, with Symphony and great camaraderie, to build projects that have found application in fields as diverse as physiotherapy and the performing arts.

Mind Balance uses Symphony to acquire and process electroencephalogram signals from the surface of the head, for the purpose of turning those signals into a brain-computer control interface. This control is used to help a character called Mawg make his way across a cosmic tightrope wire. Our work with Dublin’s Central Remedial Clinic led to Still Life, the magic mirror application that integrates elements of the real world with motion glitter, colour tracking and virtual worlds with interactive characters. Although originally intended for physiotherapeutic purposes, our colleagues (including the graceful Counterbalance dancers and the untiring Smartlab crew) made us see how Still Life also applies to the performing arts. So it came to be that I operated Still Life as the interactive component of the Féileacán and Anima Obscura modern dance shows, winding up at the 2003 World Summit on the Information Society at the UN in Geneva.

Another creative application of Symphony is Peace Composed, where the depth and complexity of a piece of Phil McDarby’s orchestral music is affected in real-time by a participant’s level of relaxation, as measured by their galvanic skin response.

As I depart, development continues on Aura Lingua, which uses a tongue-controlled bi-directional wireless interface, and Symphony for signal processing and presentation. It’s been unforgettable craic, and I extend my most sincere thanks to everyone who made it possible, and made it fun.
robert burke, symphony in C - a framework for real-time biomedical signal processing and visualisation. mind games

media lab europe. innovators//two thousand and four. www.medialabeurope.org

image reference

image 1 Mind Balance
image 2 Féileacán Project
I have had the opportunity to collaborate on many projects during the last 18 months in the Palpable Machines group. For the most part, my role has been electronic hardware design, and I have completed several such designs during my time here at Media Lab Europe. In particular, most of my work has been in developing inertial sensing circuits, haptic feedback systems and novel controllers for musical expression for projects including ‘Relay’, ‘Epipe’ and ‘MESH’.

The ‘Relay’ Project is a remote controlled electric car with acceleration sensors inbuilt. It is controlled using a custom designed hand-controller that is augmented with force feedback actuators. The force applied to the operator’s hands is derived from the accelerometers output signals, thus giving an increased sense of connectivity to the car. The system is based around a purpose-designed three-way radio link, allowing the acceleration and control signals to be monitored and modified in real-time using a personal computer.

Shortly after, I designed the electronics for the ‘Epipe’ project – a MIDI musical controller that is based on a traditional open-hole woodwind instrument. This design is unique in that it is the first such interface that senses the degree of tonehole coverage, which affords the performer vastly superior expressive control such as the ability to slide between notes.

‘MESH’ stands for Modality Enhancing Sensor-Pack for Handhelds. It is a base hardware platform that ergonomically attaches to an IPAQ pocket computer, allowing us to experiment with new and novel forms of mobile human computer interaction (HCI), including gesture recognition with tightly coupled vibrotactile feedback. The latest rendition of this platform includes 6-Degree of Freedom inertial sensing, magnetic compass sensing, GPS, and a triple channel vibrotactile display, all of which fits neatly within a PCMCIA expansion jacket of an IPAQ.
Can we design place-based cinematic narratives in ways that support participation and discovery from local as well as transient audiences? As a StoryNetworks researcher and PhD candidate at TCD, I have been collaborating in the design of "narratives of place" using sensor technologies and ad-hoc wireless network configurations.

I began my exploration at MLE creating an informative and responsive visualization about the social activity of a space: a digital apple getting bitten away. Next was the historically-inspired HopStory, that mediated our understanding of the HopStore building where MLE is located. We developed a time-based story about a day in the HopStore from the perspective of four characters and a local cat. Visitors collected story fragments from cats sculptures distributed around the space. In HopStory II the story was redesigned to fit a broader space and the audience was encouraged to follow one character at a time throughout the building. Fascinated by the Liberties neighborhood outside the lab, and inspired from a previous work, Weirdview, I have designed a distributed collection of short stories inspired by Mairin Johnston's book "Around the Banks of Pimlico". Geographically encoded stories are viewed in relation to their setting, thus forming a story map of the Liberties neighborhood. The stories will be available over WAND, an ad-hoc wireless network, or integrated into local venues. As they become inspired, community members can use methods framed by the project to create and contribute their own stories to the storybase.

Hopstory:
- "Hopstory, an interactive location based narrative distributed in space and time".
Presented at Tisde 04, 2nd International Conference on Technologies for Interactive Digital Storytelling and Entertainment.

Hopstory II:
Presented at Isea 04, 12th International Symposium of Electronic Arts, The networked experience.

Media Portrait of the Liberties:
Presented at the New Media for Common Good Forum part of the Convergence Festival 2003, in Dublin.
Presented at Spark! Design and Locality Conference, 5-6 may 2003 in Oslo.

Media Portrait of the Liberties

HopStory

Media Lab Europe. Innovators// Two Thousand and Four. www.medialabeurope.org
23 talented and diverse minds from around the world