

Fun: A Condition of Creative Research

Glorianna Davenport, Lars Erik Holmquist, Maureen Thomas, and Future of Fun Workshop Participants

There's something comic and otherworldly about being a media storyteller and doing research at MIT, where the temporal march of progress manifests itself in daily announcements of groundbreaking discoveries and inventions. While the scientist seeks to discover order, lawfulness, and generalizations for a reasonably sized portion of the universe, the storyteller transcodes descriptive observations into unique metaphoric experiences. Ironically, technology—the proverbial handmaiden to science—has become the handmaiden to art as well. Our enterprises, with their different sensibilities and objects, move forward in a common research mind-set.

Twenty years ago, I came to MIT in search of a technological solution: How could we best capture and communicate why people do what they do? At that time, Richard Leacock headed the Film Section, a superb documentary film school with a graduate program and a full complement of undergraduate courses in movie production. As students entered the program, they learned how to best garner the filmmaker's perception of what took place in the presence of the camera. Simultaneously, they became part of a remarkable society of passionate and experienced filmmakers who shared ideas and techniques with more novice artists. As a group, we constantly discussed how to develop our story, what film stock to use, how to walk with the camera, how to record quality sound, and how to edit our rushes into a meaningful story structure. Augmented by my own storytelling experience, these discussions helped me understand the value of a hunch.

The hunch applies to art and science in equal proportions. In journalism, the hunch directs our attention to a particular subject area—Cape Canaveral and the space program, the harvest of Maine's blueberry barons—and to the particular people who will tell our story—a research scien-

tist, a journalist, a farmer. As storytellers weave diverse elements into a meaningful whole, their own understanding of the world expands and is altered. In science, the hunch spurs us to ask questions, leads us to new information sources, directs us to novel or fruitful areas for exploration—image processing algorithms or printed circuit boards on paper—and provides us with the scope of a first experiment. In this way, the hunch leads to a hack, which shapes our first inquiry.

William Verplank's spiral

During a Digital Life Consortium meeting at the MIT Media Lab in May 1998, William Verplank of Interval Research, Palo Alto, California gave an invited talk about his perception of how advanced research parlay its way from hack to market. Verplank's experience as an industrial designer makes him a sage critic of the complex factors and stages that inform interface design. These stages can be articulated by the Verplank spiral in which engineers and designers balance practical development with theoretical understanding as they move from hunch to hack to idea to prototype to principles, and on to product, paradigm, and finally, if the design supports a human need, to a market.

The spiral seems logical enough when we think about objects—an iron or a Xerox machine. It also offers insight for the application developer—the word processor, the spreadsheet, the browser. What about the designer and the artist? Does their practice benefit from similar iteration? Given a problem, the designer typically generates some number of sample designs or hacks. Once a sufficient sample set has been generated, the quality designer pauses to reflect and articulate a set of principles based on what works and what doesn't. In a research community, the articulation of principles allows an idea to spread and generate a series of new hacks.

Sociable hacks

Given the rapidly expanding realm of digital applications and current trends in tangible user interfaces (see *Visions and Views*, January-March 1997 issue, pp. 8-11), technology research labs need to define testbeds in which a large number of human users can experience a digital-physical environment under fairly normal social conditions. Several labs have focused on the social issues of telecommunication but few have taken advantage of the social event as a “normal” condition.

Always on the lookout for challenging opportunities, the Media Lab has started using large sponsor meetings to experiment with a social ambience. Fun is a critical condition of these events. With that condition in mind, Pattie Maes, at the suggestion of Andy Lippman, pulled together a group of fun-loving and passionate hackers to rapidly prototype an agent-marketplace for a Digital Life consortium meeting in the fall of 1996 (see <http://ecommerce.media.mit.edu/amexperiment/index.html>). The environment was inspired by “Kasbah,” a system written by Maes’ student Anthony Chavez. Initially, Chavez developed Kasbah to let users build personalized agents that could buy and sell goods on their behalf on the World Wide Web. With the help of Henry Holtzman, who has a knack for creating installations that can spatially accommodate and process information from large numbers of real users, a marketplace came to life in the lower level of MIT’s Wiesner atrium and Cube. This event remains a benchmark for large integrated sociable experiments.

As sponsors arrived at the Media Lab to begin the day’s session, they were given a bag full of goodies—Media Lab watches, signed books by Marvin Minsky or Seymour Papert, bottles of wine, and some digital money. During breaks in the program presentations, sponsors raced to kiosks—conveniently distributed throughout the lobby—to instruct and launch personal agents to sell or buy goods on their behalf (see Figure 1). Market information was projected onto a large display in the Cube on the lower level. From an entertainment perspective, our visitors enjoyed manipulating their wealth and that of others. Since their personal risk was low, creating a market in which a Media Lab Swatch watch sold for \$76 intensified the fun. Our learning was proportionally high because we could discern the distributed environment’s many sociable heuristics at work in real time. The most striking of these heuristics had to do with the sociability of the environment into



Image courtesy of Alan Wexelblat

which the application was placed. Interestingly, sociability as a condition of fun became a central theme of the Future of Fun workshop, held in Gothenburg, Sweden in May 1998.

Fun and entertainment, workshop style

Often, a workshop will spawn a significant hunch or two. Once born, these hunches can play into a research environment. With this caveat, I enthusiastically agreed to co-lead the Future of Fun workshop with Lars Erik Holmquist of the Viktoria Institute in Gothenburg and my colleague and friend Maureen Thomas, head of Screen Studies at the National Film and Television School in Beaconsfield, England.

What follows are slightly edited accounts from the organizer of the workshop, Lars Erik Holmquist; its co-leader, Maureen Thomas; and representatives of the design groups.

Setting the stage for fun

Lars Erik Holmquist

To make an attractive workshop proposal, I wanted to find an unusual, interesting, and fun topic. Many workshops and seminars have addressed interactive cinema, multimedia, synthetic actors, interactive narrative, and so on. Interesting topics all, but they felt too limited. How could a workshop cover all this and still have a unique identity?

It soon became clear that fun was one vitally important common factor for many of the things that interested Glorianna, Maureen, and me. Too often humans overlook fun or hide from it despite its importance as an aspect of human activity. When we started thinking about the topic, we

Figure 1. A participant at the MIT marketplace scans information into the computer to instruct agents to buy or sell goods.

realized that it was far from uncomplicated—even coming up with a comprehensive definition of “fun” proved difficult.

Some may find it problematic to address such a topic in an academic workshop. Are researchers really supposed to think about fun? Shouldn't research be something important and serious, rather than frivolous? We didn't think so. In fact, we deliberately didn't claim to treat fun “seriously” at the workshop.

We chose to focus the workshop on the future of fun—the fun that new technologies will make possible. By structuring the workshop around any imagined technology, we gathered a diverse group of researchers and practitioners who work with some of today's most interesting and thought-provoking technologies.

In the workshop call for papers, we stressed the importance of submitting new ideas rather than relying on old projects. Instead of asking for formal papers or position statements, we requested “future of fun artifacts”—artifacts that don't exist, but would be fun to have.

The response to the call surpassed all expectations. We received a total of 40 complete submissions, plus a great number of incomplete submissions and expressions of interest. We were very encouraged by the diversity of the submissions, which came from all over Europe, the US, and Japan.

What is fun?
Maureen Thomas

How do you design a fruitful, useful—and fun—workshop for 30 international participants

from backgrounds varying from computer science through industrial design to the performing arts, at levels from enthusiastic undergraduate to experienced professional?

Before the workshop, we posed a question to all participants: What is the future of fun up to 2000 and up to 2005? How can we contribute to it? We asked each participant to write a short response and suggestion on e-mail, which provided food for thought for all and a shared pool of ideas and reflections from which to start. Seed topics included

- How can researchers from various disciplines help form the future of fun?
- What technologies and techniques will be important to tomorrow's entertainment—networks, agents, virtual reality, sensors, mobile devices?
- What is the role of interactive storytelling, and how can we integrate interactivity and stories?
- How will current formats like film, computer games, and Internet chat lines merge and mutate into new technologies? Will entirely new forms of entertainment exist with no resemblance to what we have today?

We also asked each participant to send a note of what they personally wanted to achieve from the workshop. Lars, Glorianna, and I took this wish-list into consideration when devising the format of this one-day workshop.

At the Viktoria Institute in Gothenburg—where everyone was impressed by what good design, air conditioning, equipment, and research ideas could achieve when coupled with goodwill, good cheer, and good weather—we started the workshop by asking the most hotly debated question, “What is fun?”

As a result of a roundtable brainstorming session (see Figure 2), we identified that fun, for us, involved

Figure 2. Maureen Thomas in a brainstorming session.



Image courtesy of Staffan Truvé

two major elements: actively designing fun things and actively enjoying fun things. All “designed” fun needs recipients or respondents.

For the remainder of the morning, we asked participants to work in groups to define some fundamental areas of “fun” based on the wide range of examples we had collected on our whiteboard. We also asked the working groups to design the fundamentals of a concrete artifact (anything from a gizmo to a game) and to identify the groups that would find these artifacts attractive.

The issue that proved crucial to all our definitions of what really constitutes fun—and what fascinated everybody—was the borderline between unpredictability and security, between destiny and chance, and the relationship among risk, achievement, and penalty. Everyone agreed that fun that can be predicted totally is no fun. But then neither is fun that absolutely mystifies. Ability and tolerance thresholds are vital in distinguishing between fun and suffering—we all recognized that what some consider fun may be painful for others and that the parameters of enjoyment groups were as important as the artifacts’ design parameters.

As the session continued, each of the four working groups articulated and was inspired by a single question, respectively:

- When is the unpredictable fun?
- How can we keep a game unpredictable, tailoring risk, penalty, and reward?
- How do you use risk and team identity to add fun to every day life?
- How do you add something to the natural function of an existing device to make it more fun?

As each group answered the question its members had formulated, the participants began sketching an artifact. The process of working on an idea with a group of people who came from different disciplines, fields, and levels of knowledge—all of whom were committed to finding a fun and worthwhile solution to the challenge—generated excitement, trust, mutual help, inspiration, and fruitful labor in an enjoyable atmosphere.

No doubt our shared interest in interactivity influenced the workshop’s design—it started from an exploration, not a blueprint, and proceeded through group sessions where input was harmo-

nized by consensus into a concrete outcome. It was a risky format, and its success depended on the commitment and generosity of all participants. Perhaps the risk element contributed to the fun and to the reward.

Knomads

Staffan Bjork, Ella Tallyn, Amanda Oldroyd, Paul de Boer, Ann-Sophie Axelsson, Ralph Schroeder, and Fredrik Ljungberg

Knomads is a new portable game device enabling cooperative and competitive games. The games, which vary from card games to long-term strategic games to shoot-‘em-ups, relate to the physical locations in which participants play. For example, a cafe might host cards and chess, while paint ball might be played in a tunnel at night. Some games will rely on the game device for actual game play, while others may only use the device for communicating results or scores.

We established different types of games via radio from servers. By registering on the servers, you can join one or several game teams or clans and participate in an ongoing series both locally and globally. These servers keep track of the outcome and statistics from the games and distribute them to the World Wide Web, making local and global high-score lists possible. Players receive game information through a portable device. Individuals or clans “win” information about the locations and nature of new games.

Many of the game sites have extra peripherals. Huge screens, virtual reality equipment, and surround-sound systems increase the game experience and enhance the audience’s perception of the game.

The Knomads—physically attractive and ergonomically constructed game platforms—have plug-in slots offering various kinds of upgrades and power-ups. Players acquire the plug-ins from stores (in the same way as trading cards), but they must win selected matches to obtain special-issue cartridges with unique game modifiers. These prizes are sent via ordinary mail.

All plug-ins and modifiers have a limited life span, enhancing the strategic planning required for traveling to play the games that feature specific plug-ins with a special advantage. This limited life span also increases interaction with other players to quickly trade for the cartridges needed for the good of a whole clan.

Knomads is about strategic teamwork while providing a multitude of different games within one. It

Figure 3. A pre-hack transmogrified reality viewing device.



Image courtesy of Staffan Truvé

also aims to integrate digital worlds into the physical world. The idea of giving information as a prize helps create a sense of excitement at receiving rare information and attending exclusive events.

Not So Boring Anymore

Henrik Gater, Cat Hebert, Per Persson, Johan Renström, Lena Stintzing, and Thomas Watson

Our group, Not So Boring Anymore (NotsBam), created the following two projects.

VacFun

VacFun is a detection and projection system added to a vacuum cleaner. Areas that are dirty or clean either go into a game system (teenagers have multiple player possibilities) or collect surprises or pieces to make a puzzle. The audience for this artifact is a family in the home.

Screamer Dreamer

Screamer Dreamer is a roller coaster that senses the screaming level, seat use, and amount of vomit, and directs the car along different routes depending on the person's perceived level of fear or boredom.

Trap

Annika Olsson, Bo Beckeström, Andreas Lindblom, Ralph Schroeder, Kai Simon, Staffan Truvé, and Erik Wistrand

Trap means transmogrified reality (TR) for active pleasure. It's a product for people in boring

situations such as driving a car, waiting for the dentist, waiting in line, sitting in meetings, riding in an elevator, and so on. TR consists of reality and scripts (traps). Real reality (RR) is fed into the transmograph, enhanced with scripts, and becomes TR. This wireless product uses matchmakers to choose the right scripts for a person and/or situation. Consider the following examples:

- *Dentist scenario:* You're afraid of going to the dentist. Imagine putting on a pair of goggles (see Figure 3) the next time you sit in the dentist's reception area. The room turns into a beach, and the participants in the room turn into sunbathers, birds, dolphins, and so on. You might be a seagull or anything else you could imagine. In the end, the dentist appears as an ice cream vendor.

- *Car scenario:* Imagine driving a car on the Autobahn through boring industrial districts in Germany at night. If you turn on the Trap mode the road changes to a zoo. The car behind you might be an elephant or a dinosaur, and the night might turn into day. Different degrees of transmogrification exist, so you can add nonreal characters and events such as games and surprises.

We think that with TR, daily repetitive tasks can be amazing. In addition, we believe that TR will be possible in a couple of years—the dentist scenario with goggles or in a Cave Automatic Virtual Environment (CAVE) in three years and the car scenario in ten years.

The color of fun

Michael Nitsche, Kim Binsted, Christoph Rodatz, Björn Thuresson, and Åke Walldius

Playing basketball is fun both in your backyard and at an Olympic stadium. Join a team, play for yourself, and for your team against other teams. More important than the competition, however, is the playing community meeting on the field. Friend and foe play together, having fun together. The future of fun should not be dominated by lonely bit addicts plugged into their computers and out of their natural social network. Instead, we need more playing communities.

The future of fun remains a social event: people meeting people and playing games together. Only now, computers unite them. They offer an endless supply of possible games and fun for indi-

viduals and teams, embedded in a giant playing community. We're talking about a global metagame knitted together by computers.

Anybody can purchase a "Talisman," which works like an individually customizable pager. The Talisman identifies you as member of a particular global team—not defined by race, culture, skills, religion, or gender—just by any color of the rainbow. We call the game Colors.

Colors gamers can challenge each other to a game—any game, anywhere, at any time. Whenever two members of different teams meet, their Talismans register the presence of another gamer. Both gamers might agree on playing a game—chess, arm wrestling, telling jokes, and so on—and register a challenge instantly with the "Team Coordinator," a server that tracks global wins and losses. After the game, players confirm the results using their Talismans. Although you can add points to your team's score in the global gaming competition, Colors is not about rivalry. It converts competition to cooperation through playing. Colors establishes spontaneous playing communities in everyday life, thus improving real human-to-human interaction. Colors doesn't replace reality; instead, it engages us in friendly competition, adding playfulness to our daily lives.

Juggling, Sex, and Puzzles

Paul Rankin, Marie-Louise Rinman, Claire Dormann, Christopher Hales, and Magnus Helander

The JSP product concept is a comic state of flow and passion through juggling, sex, and puzzle solving. It helps develop problem-solving skills and dexterity through familiar elements.

Flow and passion

These days we see a demand for more pleasure and excitement. More fun, better sex, and so on. But why do we want fun and what does it mean? Having fun connects closely to the states of flow and passion. Optimal flow results from a fine balance between challenge and ability, leading to a feeling of total harmony and living in the moment. Passion means having an emotionally enthusiastic attitude toward everything you do. Comedy often results from an unexpected juxtaposition of unrelated or opposing elements. By participating in our family of intriguing games you can have a lot of fun experiencing all of these simultaneously.

A balancing act

Juggling demands concentration and skill, sex a passionate response, and puzzles brainwork. Each of the three elements has its own type of risks and rewards: physical, intellectual, social, or financial. Each can be expressed in different literal or metaphorical forms. Our games challenge participants to simultaneously balance achievement in all three activities, while our technology mediates the conflicts and interactions between juggling, sex, and puzzles in unusual and amusing ways. When is the unpredictable fun, and what is the threshold to fear? We tune the intricate balance of three-way conflicts to the players' chosen level—for example, increasing the stakes with an audience (remote or present). Our family of connected JSP games provide a spiral of escalating risk and reward. Performance in a more private context can qualify you for more public contests: from solitary play with remote networked participants, through a parlor game to a public market place or gladiatorial TV and Internet game show.

In its simplest form, anonymous JSP players may talk seductively with each other via Internet telephony while juggling cones, which flash commands via puzzling color patterns. Accelerometers in the cones signal a local detector for the remote server control program, which mediates cross-connections in the chat box switchboard. Dropping a cone may forfeit a blind date, but continuing may offer a new date. Alternatively, a date can be connected with physical risks, but that's another story.

Beyond the future

As you can see, the Future of Fun workshop generated a plethora of fun and entertaining hunches. Only time will tell whether any of these will evolve into hacks, then prototypes, and eventually products. But no matter, the workshop's conditions proved a fertile breeding ground for creative research. And that in itself was a success. MM

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