

The End of Hearing

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Abstract. This science-fiction prototype comprises two stories discussing potential futures of human hearing. The stories focus on the potential consequences of two speculative factors affecting human behaviour and societies: 1) sound conditioning technology, and 2) the mass hearing impairment. The stories will also be presented in a gallery space by means of the communicating arts: a prototype, moving image and a performance. By confronting the science-fiction prototype with the public, a possibility of educating the audience and collecting feedback is identified. This feedback can be used to inform scientific research and product design in the future.

Keywords. Hearing, audience, feedback, hearing impairment, sound conditioning.

Introduction

“The End of Hearing” is an experimental science-fiction prototype (SFP) exploring the future of human hearing. It comprises two written stories, each focusing on a certain theme. Complemented by a series of narrative objects and short publicity films, the SFP will be staged as a performance in a gallery space. The main goal of the project is to generate audience responses to the issues discussed in the scenarios as addressed by the author. With the stories and objects presented in the art/design context, it may be possible to better engage the audience with the SFP scenarios.

Hearing is the central theme of this SFP. Although it explores future scenarios based on current scientific research and evidence, it does not aim at promoting any standpoint. On the contrary—its goal is to stage a narrated and unbiased discourse between conflicting points of view. The focus is on the critical inspection of the impact of new technologies and products on human hearing. Imagining potential consequences of current innovations and tendencies (shown in the selected evidence material) can reveal a lot about the nature of scientific development and product design. It can also inform our understanding of human societies and human behaviour in general.

The first story (“Artificial Silence”) explores the consequences of the recent popularity of personal music players. Provided that the prognoses about emerging health risks identified by the European Commission prove true [6], we are going to face a problem of mass hearing loss in the future. How can this impact our societies? Might it lead to redefining the concept of impairment? In the second story (“Blasting!”) the possibility of repurposing a new technology, i.e.: sound conditioning, is investigated [7]. Is it possible to anticipate, inspire or maybe even impel spin-offs from new research? How to decide whether a certain technology is put into good use or abuse?

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1. “The End of Hearing” project

1.1. *Towards the science-fiction prototype*

“The End of Hearing” was inspired by a number of recent design projects, which combine a futuristic approach with a vivid storytelling form [1, 2, 3]. It also directly stems from the body of work developed during my MA Communication Design course at Central Saint Martins College of Art and Design between 2009 and 2011 [4].

The concept of combining science fiction with science fact in an attempt to inform design practice became central in my MA dissertation [5]. In this paper, by referring to a selection of scientific and fictive attempts at communicating with extraterrestrial intelligence (e.g. NASA's Pioneer mission and the Arecibo message alongside Lem's “Solaris” and Spielberg's “Close Encounters of the Third Kind”), a possibility of elaborating on the seminal Drake's equation was identified. Thus, linking science with fiction became instrumental in expanding our understanding of CETI and informing not only the search for, but also a potential meaningful encounter with an alien civilisation.

The MA dissertation focused on researching into the blurry division between science fiction and science fact. A natural consequence of widening the scope of this investigation was to manipulate fact and fiction by myself, and to write an SFP that would explore the capacity of science fiction as a design tool. Capitalising on its ability to capture one's attention and kindle ideas, the SFP approach can be used to confront the audience with what may lay in store for us in the future.

Confronting “The End of Hearing” with the audience can be done by means of communication art and design, which have the capacity to visually engage the audience and introduce it to the critical discourse [1, 2, 3]. In practice this can mean staging a performance, creating an exhibition or an installation, a moving image, a prototype or a sound piece. This tactic can communicate a scenario to the audience in an accessible, informing and engaging way, being beneficial in two distinct ways discussed below.

1.2. *Harvesting feedback*

On one hand communicating the SFP can be beneficial to the public. By presenting potential futures of human hearing, the prototype helps to build general awareness and understanding of the issues of hearing protection, noise reduction, hearing impairment, etc. The SFP addresses critical cultural issues concerning our evolving relationship with sound, not only in terms of what might be used in the future, but also how it might enter and impact our lives. Thereby, the SFP translates specialist scientific knowledge into understandable, engaging scenarios. This makes science more democratic and enables the general audience to relate and respond to scientific work.

On the other hand, confronting the audience with the SFP can help scientists and designers receive feedback. The feedback on “The End of Hearing” can be a valuable asset to the process of creating new technologies, products and services around our aural faculty. Discussing future developments and learning about the expectations of prospective users/consumers might provide researchers with answers that are otherwise impossible to find in the laboratory. “Are we committed enough to fight the noise?”; “How do we value our hearing?”; “Is civilisational development our ally, or our enemy?”. The answers to these questions can be key in informing innovation in product design, scientific research, as well as the development of new technologies. Therefore,

confronting the SFP with the audience can be treated as a sort of democratic science experiment, prompting unique feedback from the outside of the scientific context.

1.3. Scientific evidence

The stories in “The End of Hearing” SFP are set in a non-distant future. The following scientific evidence and background materials were used as an inspiration and the basis for the envisaged scenarios:

- “Potential health risks of exposure to noise from personal music players and mobile phones including a music playing function” published by the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) [6];
- The concept of “toughened” hearing and sound conditioning effect [7, 8];
- “Ototoxic Medications (Medication Effects)” by B. Cone, P. Dorn et al. for the American Speech-Language-Hearing Association [9];
- “Stories from Deaf Kids and Adults” published by the Deafness and Family Communication Center at the Children's Hospital of Philadelphia [10];

Scientific developments cited in this SFP are either already available, or reaching a substantial stage of development. Aminoglycoside antibiotics (mentioned in the first story: “Artificial Silence”) are widely used in contemporary pharmacology [9]. Health risks identified in the SCENIHR report are expected to have an impact on our lives throughout the coming decades [6]. The sound conditioning effect (the main theme of the second story: “Blasting!”) has not been progressed beyond the phase of tests on lab mammals yet, but nevertheless seems promising for humans in the future [7].

1.4. Hearing

Human hearing is a very powerful sense. We live immersed in air—a ubiquitous medium, which propagates acoustic information and noise. Our hearing is holistic and omnidirectional. With ears we perceive our whole environment at once. Hearing is also ever-active, because there is no such thing as ear lids—“it is impossible to ‘listen away,’ as we might ‘look away.’” [11] Our acoustic perception spans from 20 to 20,000 Hz and covers the range of up to ten octaves. Hearing provides many unique and exciting opportunities for interaction or user experience solutions, which cannot be supported by other human faculties. It is thus difficult to understand the disproportion in the focus of Intel's research projects—most of them centre on those user interface solutions, in which vision/visual medium dominates man-machine interaction [12]. Our hearing would greatly benefit from better exploration of its role in communication.

But sound is something more than just a means to transmit acoustic signals. As a soundscape, it defines space and environment, and builds local identities [13]. The technological progress has influenced the soundscapes in a significant way, leading to replacing some sounds with other ones. “As travel by horse gave way to mechanized transport, the sounds of shod horsehooves, reins, sleighbells, and wagonwheels disappeared, but so did the sound of the blacksmith and wheelwright.” [14] In their place the sound of motorways and buses appeared. The electroacoustic process (“signal transfer from electrical to acoustic form or vice versa” [14]) revolutionised the way sounds are produced and used. As a result, sound became accessible—but at the expense of its fidelity, genuineness, variety and the change in listening habits.

2. Story #1: Artificial Silence

2.1. Near future

It was around the time, when we started to understand the real meaning of this change. And the understanding came slowly. No one ever imagined anything of this scale. We thought: *“Well, it can affect some but not me...”* But the change impacted everyone.

The authorities reacted when it was already at least twenty years too late. The World Health Organisation advised the governments on what sort of legal changes to introduce, in order to stop this global epidemic of hearing damage. But those idiots could not see that there was hardly anyone left to save. Paragraphs should have been in place when the first automobile drove into the City, when the first Underground station was opened, when the first mp3 player was sold... years ago!

It was certain that at some point in time every one of us will experience hearing damage. *“When?”* and *“how bad?”* were the only unknowns left.

2.2. Lucy

We were sitting in my lab, when we heard the news about a whole family becoming completely deaf. They had tinnitus diagnosed before moving into a new house near South Circular in London. After a year living in constant traffic noise, their hearing loss became irreversible. I asked Lucy how this situation made her feel.

“I am not too sure” she replied.

I looked at her in silence. She was sitting in the corner of my laboratory, staring through the window. Lucy used to visit me in my lab every Friday afternoon.

“I really don't know what to think, Ron” she continued after a while. *“It's terrible on one hand, but quite understandable on the other.”*

“You mean it's the risk that everyone living in London needs to accept?”

“Well... yes” she hesitated for a moment. *“But maybe it's also a part of our urban evolution? We transformed the world around us, we created the technology to serve us. Why shouldn't we adapt to this world ourselves now? I mean... maybe it won't be that bad? Maybe we can coexist with noise”* asked Lucy rhetorically.

“Coexist with something that destroys us?”

“You know—what doesn't kill you...”

“...can only make you stronger” I finished for her. I thought she's just teasing me, as she always used to do... And as always, I fell for it: *“Yes, but the numbers make all the difference here. Just imagine: at some point more than half of the population would become hard of hearing. Every one in two with hearing loss. On such scale you can't be possibly talking about evolution or natural selection. It's more like mass extinction.”*

“Mass extinction is progress too” replied Lucy. *“With more radical results, but...”*

“Oh please! Now you're being silly” I stopped her. She was silent. I felt I might have reacted to violently, so I tried to calm down and explain. *“How can it be positive in any possible way? This would result in whole human population being disabled and in need of specialist help. Pandemonium! You just can't have everyone impaired.”*

“That's the point! You should know what I mean better than anyone else” she shot a disapproving glance at me, as if I was one of her naughty pupils. *“Maybe now, when so many people is becoming impaired, our point of reference should change”* she asked. I started to understand what she had in mind, but couldn't believe she was serious... However reasonable this might've sounded. *“Should we, hard of hearing,”*

Lucy carried on, *“still be regarded impaired when we become the majority? Personally, I find it unfair and unlikely. Maybe soon it's not me who'll be considered impaired but you?”*

I knew where she was heading. This was what Lucy was writing about in “The Listener” after taking over their daily column for the hearing impaired. *“I see your point,”* I replied calmly, *“but impairment isn't something we decide about in voting. It's a matter of being fully functional in terms set by nature. And that's beyond our...”*

“Nature?!” she bursted out. *“Show me the last time nature really mattered!”* Lucy took off her hearing aid and continued talking with her changed voice showing me the device. *“This leaves nature with absolutely no influence at all. This is technology, Ron! I should not stand here talking to you, if it really was about nature's terms.”*

I was struck by her emotional argument.

Was she right saying that impairment is not the matter of what is or what is not natural? It seemed ridiculous at first. But what is natural anyway? Is it what the body or an organ is designed for? Or is it perhaps what we get used to over hundreds of years? Eating butchered meat was regarded normal and even ethical before the invention of labmeat... Does “normality” change with time and evolve with us? Would evolution be possible at all, if we didn't accept small abnormalities to happen? Like it or not, evolution is in fact about making good use of faulty anomalies.

2.3. Vaccination

Lucy invited me to a dinner in my favourite Maltese restaurant in Holborn. I arrived too early, sat down and waited for her. To kill time, I started to browse the menu. There, a colourful article praising a new noise-cancellation offer caught my attention. Because it had finally become a legal requirement for all public premises to provide noise cancelling solutions, everyone tried to impress the customers. Usually, I would choose a pair of ear plugs or the traditional noise-cancellation system—a chain of translucent membrane screens set around a table. But the Maltese had something new this time.

The new solution was an active noise-cancellation system. It comprised a ring of microphones encircling the table, which recorded all noises from around. A set of speakers arranged in a smaller ring played inverted sounds outside, which cancelled all noises detected by the microphones. Ironically, this simple concept required very sophisticated electronics and incredibly high precision in terms of setting up the elements of the system. It was created by my college friend and a well known soundscape engineer—dr Edwin Oldway.

In college we never worked together, but always took inspiration from each other. Later our paths went apart. He focused on improving the old and proven ways of noise control and become an important figure in the Soundscape Regulation Authority. I focused on my own research into new strategies for noise control, slowly fading into anonymity over the years. But I was sure my moment would come at some point...

I wanted to test Edwin's invention and asked for the noise-cancellation service. Two waiters brought thirty poles with mics and speakers and installed them in special sockets in the floor. Soon, I found myself surrounded by a forest of devices, entangling the space to the degree when it was difficult to move around it. But it did work really well. I could barely hear the noise of the traffic from outside and above the restaurant.

“Are you deaf or what” I suddenly heard from behind. Lucy managed to slip inside the noise-cancellation ring, knocking one of the mics out of its place. I could hear some faint noises from the kitchen now. “I said sorry for being late.”

“Oh! It's this new noise-cancellation service they have here” I pointed at the poles. “You can't hear anything from outside this ring of speakers. It's amazing! I could not hear you coming” I explained. “I'm glad you're here.”

“Well, yes... but I tripped over one of those cables and almost killed myself. You'd need a footbridge or a lift to help you go around all these wires.”

“That's a detail. Listen how it works” I replied.

“Yeah, right... a detail” she kept going. “It may work, but it's ridiculous. I mean—look at it! It also seems to me like fighting rabies with fencing in all the places we don't want it to spread into. But in the end of the day it's just piling obstacles up, solving one problem with another” Lucy continued. “And what really worked with rabies was simple and smart. It changed the reason for which it was dangerous. Why can't we have a vaccination against noise too?”

“This is great” I shouted suddenly. She looked at me in astonishment. “You're my treasure! Sorry, I need to go” I kissed her and run out to my lab. I had a brilliant idea...

2.4.

Statistics were grim. The 10 millionth hearing aid was soon implanted in the UK. Nine out of ten Londoners were classified as prospective noise victims. Thousands were in need of specialist help but refused to receive it—we were all afraid to accept the inevitability of becoming impaired. Mass media helped things go only from bad to worse. Instead of building an atmosphere of acceptance and support, they fuelled the anxiety by using the rhetoric of apocalypse and “normal” versus “disabled”. There was too little compassion in people and too much angst and helplessness.

Hearing damage affected everyone's lives now. Lucy was doing some voluntary work with recently impaired, helping them to accept and understand their condition. She knew how to talk to people and they trusted her—she was hard of hearing herself.

I spent most of the time in my lab working on a new solution to this madness.

2.5. *The otomixer*

“I called it the otomixer,” I explained pointing at the prototype standing on the table, “because it mixes special ototoxic antibiotics, which cause temporary hearing damage. It gives you full control over the duration and the qualities of your hearing loss, which you can easily induce whenever you wish to have a rest from noise pollution.”

Lucy looked confused but said nothing. She gave me a strange look.

“How does it work?” she asked. The apparatus was prepared for the first round of tests. I had a list of volunteers but I intended to be the first one to use my invention.

“Oh, it's very easy.” I turned the otomixer on and five glass vials containing primary antibiotics rattled. “Put these headphones on. Can you hear me? They are connected here—to the main part. They receive the sounds from this microphone.”

“I can hear you.” Lucy started to play with the controls.

“This is the equaliser.” I pointed to the panel with a large knob and five sliders. “By adjusting these levels you can define the quality of sound. This is also how your hearing will ‘sound’ like after the vaccination.”

“What vaccination?” she asked.

"You'll see in a second. The quieter the sound you set, the stronger the ototoxic dosage will be," I explained. *"Reducing the volume in each frequency band of the equaliser adds appropriate ototoxins to the final compound. So, by turning down the high-frequency slider and leaving others at zero you'll receive an injection of pure gentamycin. It'll cause hearing loss only above 2kHz."*

"Only?" she laughed. *"And what if I set the sound to this—complete silence"* she asked turning the duration knob from "2 hours" to "Lifetime".

"Then the compound will consist of all ototoxins. Without diluting them" was my answer. *"And you'd hear nothing but silence for the rest of your life."*

"So when I'm done setting the sound..."

"...you press this button and the compound will be mixed in this flask," I finished for her, *"and ready to take in an injection or in a pill. This is the vaccination you asked about"* I handed her a flask with purest ototoxins.

2.6. Lucy

There was a moment of silence. Lucy was looking deep into my eyes. I felt uneasy.

"Take it then," she said.

"...What?"

"The injection. Take it" she ordered.

"...but... me?"

"Yes—you. You said you'll be the first one to use it."

"Well... I did, of course..." I explained, *"but the testing did not start yet and..."*

"Do it!"

"Okay, stop right now, wait a moment. You can't just..."

"Do it—or you'll never see me again. I adjusted the equaliser levels for you" she said. *"Take it, if you believe your invention will help at least one person in the world."*

I hesitated for a while. *"What on earth happened to her"* I thought. *"Is she serious? I've never seen her like this before. Suddenly so threatening and aggressive"* After a moment of silence her face started to relax, but her eyes were still restless.

"You can't do it," laughed Lucy. *"You hypocrite! At least I'm glad you are not stupid enough to actually use this idiotic machine."*

She approached the otomixer and with a sudden strike she threw the apparatus down from the table. I jumped and tried to catch it, but tripped over the headphones and hit my face against the table edge. The otomixer broke into pieces. The vials snapped all at once, spilling the antibiotics. The circuits sparked and smouldered.

I sat on the floor, wiping blood from my forehead.

I never saw Lucy again.

3. Story #2: Blasting!

3.1. Show: part 1

"Ready?"

"All set and ready to roll... at least according to the manual."

"Sure? We really need to be two hundred percent sure. One hertz too little or one decibel too much and we'd blow their brains out."

"Sure. Check it yourself, if you're so worried... I did my bit."

“Everything seems to be in order. Okay, we can start the show!”

3.2. *Interview: part 1*

“Tonight on 'The Extreme' our guest is the father of blasting: Matt First, who agreed to come to our studio to tell us about his work. He requested to protect his identity—that is why his voice will be distorted. Welcome to the studio, Matt. We are very happy to have you with us today. Can you tell us why it is that you want to remain anonymous?”

“Sally... may I call you that?... so, Sally, it's because of what I'm doing. Blasting hasn't been officially legalised yet, so I need to keep all doors open.”

“Matt has not started talking about his work yet, and it sounds rather extreme already. Can you tell us what it is that you do? Blasting...”

“Blasting is an extreme sport. In fact, it is so extreme that to give justice to other extreme sport, such as free-diving or strobo-racing, I prefer to call it a severe sport...”

“Oh, this sounds rather dangerous!”

“...heh! It's dangerous, but absolutely safe when done cautiously. Anyway, the fact that it always results in a temporary loss of human hearing, makes it stand out from other sports, which push human capabilities to the extreme. Blasting does more. It goes far beyond the extreme, as it's all about reversible deafening. But I want to stress that no one has ever been permanently deafened.”

3.3. *Email*

From: Sally Robins [mailto:sally.robins@bbc.co.uk]
 To: Dr Bernard Guttenohr [mailto:bguttenohr1@leeds.ac.uk]
 Subject: About “blasting”

Dear Ms Robins,

Thank you for your interest in sound conditioning.

Sound conditioning is a revolutionary treatment, which eliminated the risk of occupational noise-induced hearing damage. By exposing one's hearing to a non-damaging sound stimulus, a resistance to a damaging stimulus is attained. It is true to say that sound conditioning indirectly saves peoples' lives.

With increasing disquiet I hear all the recent information about sound conditioning instruments being used for dubious entertainment. Sound conditioning has been developed with the sole intention of preventing hearing loss. Hence, any “blasting” involving intentional damage to hearing should be deemed unethical and wrongful.

I would like to take this opportunity of writing to a journalist to make an appeal for a campaign against “blasting”, which has been recently gaining popularity among young people and, most worryingly, among and which constitutes a substantial risk to human health and even life.

Yours sincerely, dr Bernard Guttenohr

3.4. *Interview: part 2*

“From what I learned, blasting involves paralysing of one's hearing... is this true?”

“Not really... I'd rather call it losing of one's hearing. It's a very strong physical and emotional experience, when people really lose all audio for a second. But this short moment of anxiety, hesitation and curiosity means everything. Some people come to me after blasting and say it was the best thrill they had in their lives”

“Is this some sort of a chemical reaction in the brain that makes it so attractive?”

“Yes, in a way... I don't want to bore you with scientific details, Sally. Let me just say that blasting makes you feel like daydreaming, which is caused by the numbing of your cochlear nerve. At the same time your organism reacts to a potential threat with a strong adrenaline rush. For this short moment of blasting you're in between those two extremes: relaxation and excitement—and that's why it's so pleasurable.”

3.5. *Show: part 2*

“...have you done this before?”

“No, it's my first one. My sister did it and she loved it! That's why I came here today. What about you?”

“The same—I heard it's a really intense thing...”

“Oh yeah! I heard it makes you appreciate what you'd normally take for granted...”

“Yeah. You know, I've done some bungee jumping with my friends before... but it was far away from being as exciting as this one here. Hey, would you like a drink...”

3.6.

A revolutionary technology. A controversial sport. A promise of reviving a dying town. The Blasting House is hoped to change the face of this area near the Heathrow airport.

Rupert Gamble, one of UK's best known venture businessmen, believes this is his most challenging project ever. Should everything go according to his plan, the Blasting House is hoped to host at least 100,000 visitors annually. But there are still some, who are openly fighting the project—and they do seem to have a point.

The pioneer in sound conditioning for humans, dr Bernard Guttenohr from Leeds University, advocates against legalising blasting by the Games and Entertainment Registry Authority. He argues that because sound conditioning saves lives, it should not be used for amusement. GERA still hesitates, but knowing their bias towards market benefits rather than scientific responsibility, they should give it a green light soon.

Yet, there are even darker clouds looming over Gamble's enterprise. Matt Phirst, the so-called “father of blasting”, started to occupy Gamble's venue last week and plans to organise an open blasting festival there. Phirst argues he had invented blasting and released it to the open domain—available for everyone to use it freely. Phirst aims his protest at Gamble's attempt to privatise and commercialise the blasting technology, which Phirst likes to call “the public goods”. Money is on Gamble's side, but as the guru of the blasting community, Phirst seems to have a big say.

How the conflict will impact the investment? No one knows, but Cranford already seems to benefit from it—never before did this small town receive so much media coverage as today, owing to Gamble, Phirst and Guttenohr.

Sally Robins, BBC Radio 5, Cranford.

3.7. *Interview: part 3*

“...any plans to reach out to a bigger audience?”

“We're currently preparing for a big gig in London. We plan to use an abandoned residence near Heathrow. After the third runway had opened it's been left empty. A perfect venue for blasting: we won't disturb anyone around and we don't mind the noise

of air traffic ourselves. It'll also be a citizen protest against the commercialisation of knowledge and common goods. I don't want to hide the fact that it's thought against Mr Rupert Gamble, who wishes thinks he may privatise everything he wishes, regardless ”

“Sounds good. We have a comment from one of our listeners. ‘Bernie’ from Leeds wrote: ‘Sound conditioning was initially meant for preventing hearing loss. It seems to me that your so-called <blasting> contradicts its original use.’ Over to you, Matt...”

“To me there's no conflict, but progress. When a technology's created, it's usually with a certain purpose. But life reinvents it and finds new, unexpected applications. It happened many times in the past. Let's take the parachute. Initially it was meant to save pilots' lives. And it still does its job. But once someone realised that falling can be a great experience, a lot of fun—and he started a new sport. I find it really exciting!”

3.8. *Show: part 3*

“Ladies and gentlemen, it is my privilege to welcome you today to the Blasting House. Our House is the first venue in the world exclusively dedicated to the blasting sports.

I would like to take this opportunity to express my gratitude to the man, who made this possible—Mr Rupert Gamble. Thank you for believing in our town of Cranford.

Ladies and gentlemen! I hereby open the Blasting House!”

4. Conclusions

4.1. *Critical view*

The SFP investigates a number of issues emerging from our changing relationship with sound and hearing in terms of human culture and society. This is particularly important today—when new scientific evidence contributes to a better understanding of our aural faculty, and to an increased awareness of the impact of noise pollution on our hearing.

The “Artificial Silence” story explores the notion of impairment. It questions the unconditionality and appropriateness of the division into the “normal” and the “impaired”. Extrapolating from now, the hearing deemed healthy today may become a handicap in the future, requiring specialist help in the noise-abundant world. The “Blasting!” scenario discusses the idea of the technological spin-offs, and asks self-referential questions about the ethical evaluation of scientific innovation. It also spots the blatant discrepancy between the scientist's motivation of progressing knowledge and the motivation behind applying these findings to commercial or hazardous use.

4.2. *Feedback sessions*

To date, two sessions of audience feedback on “The End of Hearing” SFP were conducted. An exhibition at the Shoreditch Town Hall gallery in London was one of them. It staged four scenarios presented in writing and played as voice-over recordings. The audience was encouraged to respond to the scenarios in writing or drawing, as well as to share their own beliefs and expectations regarding the future of hearing. Collected feedback was used to evaluate, improve and further develop the SFP [4]. Informed changes included i.a.: rewriting the stories; replacing voice-over recordings with short

films; designing a series of narrative objects complementing the scenarios; and adopting new strategies for strengthening the impact of the SFP on the audience.

In June 2011 a new version of “The End of Hearing” will be presented to the public at the Rochelle School gallery in London. In a quasi-performative event written stories, narrative objects and short films will communicate the SFP. Volunteering viewers will be interviewed during this audience versus prototype encounter, and their comments will be collected. The feedback on “The End of Hearing” will later be summarised in a presentation and published online as the SFP results report. It will document the outcomes of this democratic science experiment.



Figure 1. “The End of Hearing” exhibited at the Shoreditch Town Hall gallery in London, (8-11 February 2011). The two lower rows of writing is the feedback received from the audience.

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