# Technology for building illusions

Wearable devices for playing new roles in everyday life.

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*everyday life*

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# Abstract

> *"As an artifact and amplifier of thought, technology is not exclusively about rationality; content is not exclusively about information."*

**Brenda Laurel**, *Computer as a Theatre*

Wearable technology is a fertile field for interaction designers willing to create the feeling of empowerment and involvement in a user. In this thesis I'm exploring the opportunity of psychological empowerment through wearables that, through evoking a role, can create a new context around the wearer. I'm addressing the possibility to create immersive experiences through wearables by investigating this potential and the possible model behind it. I'm delving into exploratory interfaces for women, open systems in which delight and engagement are the main functions; wearables that work as masks allowing an interaction with the identity, aimed to unfold different personal narratives, and to generate opportunities for new performances in everyday life.

> *All play presupposes the temporary acceptance, if not of an illusion (indeed this last word means nothing less than beginning a game: **in-lusio**), then at least of a closed, conventional, and, in certain respects, imaginary universe.*
>
> *Roger Caillos**, Man, Play and Games***

# Contents

# 1. Introduction

## 1.a. Motivation

> *"There is nothing between the audience and the stage but some good illusions"*
> Brenda Laurel*, "Computer as Theater"*

The question I'm addressing in this thesis is whether we can find exploratory models of the human-machine dialogue, able to support personal emotional conditions, and to provide rewarding experiences with digital media.

In other words**, how to create experiential interfaces for pleasurable interactions. How to build interactive artifacts able to be amplifiers of specific emotions and meaning.**

My research is focused on interfaces in which the power of digital technology can be used to re-describe experiences through augmented wearables, open ended systems that allow the perception of new personalized context, and that can build an hybrid space we can call mixed reality, in which a fiction takes place.

My interest is in looking for ways with witch we can embed in experiences, mediated by technology, the subtle human pleasure about the "what if"; the engagement triggered by suspension in an event.

The kind of pleasure I'm describing is the one embedded in immersive experiences, the one in which we feel the *"sensation of being surrounded by a completely other reality...that takes over all our attention, our whole perceptual apparatus[1]"*

I strongly believe we can induce behaviors addressing a specific, individual cultural knowledge, evoking shared myths and common sense, implying the experienced knowledge, the one that constitutes our categorization of the world, the one we build through senses in time and space.

Last year I had the chance to create something that seems to work in this way, the "Flight Dream project". This thesis tries to explain the interactive model behind that device, to gain more awareness an understanding of the different variables that take part in it, and to be able to build other examples with the same functioning.

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[1] Murray, J.H., *Hamlet on the Holodeck*, (Cambridge: MIT Press, 2000), 98.

## 1.b. Definition of the problem

In particular this exploration is aimed to understand the cultural nature of the interaction going on when a wearable is worn for self-expression, and consequentially the cultural nature of the messages (what kind of "mythology" we are evoking) as designers we convey through technology.

First of all I'll clarify on what model of interaction, proposed by the established HCI literature, I'm building on. And then, as this kind of interaction share in its functioning many aspects with narrative and other disciplines, I'll borrow from them (cultural studies, theory of narrative, theory of media and psychology) some interpretative hypothesis to explain specific aspects that still haven't an explanation.

### 1.b.i. Research questions

So going through this exploration, looking for the different cultural/human variables behind my "Flight Dream Project", I'm going to keep in mind this main question:

**Can we design interactive products able to be personalized and tailored to our imagination?**

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## 2. The "Flight Dream" project: A puzzling interaction model



*Figure 1. The Flying Cape at the BIG Torino exhibition*

This thesis exploration started as an attempt to explain the interactive model behind a project I developed last year in collaboration with Dianna Miller and Phyllis Mancino. The project took place in the course "Designing Desire: Wearables" held at Interaction Design Institute Ivrea[2].

We chose to address the desire to fly and designed a cape to simulate flight. The process we went through was very peculiar, spanning from an inquiry into the visual cultural imagery around the desire to fly (from Peter Pan to Leonardo da Vinci) to going through data about flight simulators. The result was the embodiment of a flight dream, its re-description through stimuli addressing different senses.
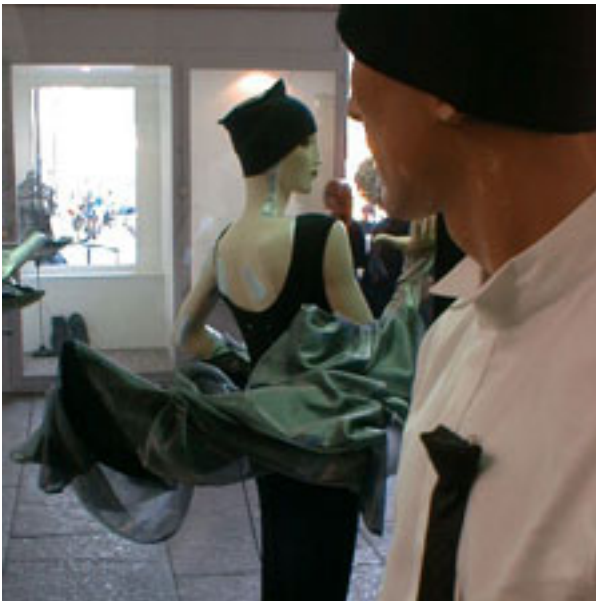


*Figure 2. The Flying Cape at the BIG Torino exhibition*

The visual clue of a wing in the shape of the cape, the auditory hint provided by the sound of a rushing wind, the haptic crispy sensation of the parachute material, combined with the sensation of being aloft by the pressure of the air, softly inflating the cape, were the key sensorial and mimetic elements able to re-describe in the mind of the wearer the flight dream, calling it up through the lived experience of being a child, running down a hill, pulling a kite.

The wearer could really embody the "flight dream", daydreaming of being a bird or simply achieving and drawing from the

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[2] A full description of the "Flight Dream Project" is available at the website http://www.flightdream.org.

transformation as much as needed to feel different and to estrange the onlookers.



*Figure 3. Phyllis Mancino wearing the first prototype*

Some people called it a poetic object, others a magic one, but everybody among those who loved the project felt that we were conceiving and using technology in an unusual way, addressing the problem of an 'interaction' and of a "mental model" on a different level.

I think that in one direction we were colliding with fashion, creating a new opportunity and a concept for "personal style" through dynamic behaviors in garments, but also I would stress that we were addressing a new and not less important playful dynamic function for a garment; the open-up possibility of an elegant transformation for adults.

How that transformation works and which elements we have to take into consideration if we want to design these kinds of systems is the area of inquiry for this thesis.

# 3. Rationale

This research has had the aim of giving a better understanding and awareness in the process of designing Reverie Engines, a set of wearables that goes to make up the second part of this thesis, sharing the interactive model established by the Flying Cape.

My working hypothesis, trying to explain the interactive model behind the Flying Cape, is to trace and follow some of the thread woven in it, composing a tentative explanatory matrix, that could clarify, from the communication point of view, the different cultural /interpretative elements in it.

What's the Flying Cape from a communication/interpretative perspective?

It is a system that is:
- **Experiential**
- **Immersive**
- **Mimetic**
- **Based on personal narrative**
- **Open ended**
- **Playful**
- **Poetic**

Going through the different aspects I would also glide through other projects carried out in the frame of the wearables research that have a correlation with our wearable.

## 3.a. Interaction as an emotional and participative transaction with an object

First of all I need to make clear which definitions of interaction I'm building on. The peculiar interactivity of the Flying Cape involves a feedback loop between the mind and the object mostly on a psychological/emotional level. The activity is the key moment of the emotional involvement, where the artifact reveals its essential nature, its 'meaning'.

According to Mihaly Csikszentmihalyi and Eugene Rochberg-Halton in their book 'The Meaning of Things', objects are not only experienced physically, but also on a psychological and emotional level. They give reasons for cherished possessions relating to their achieved significance through psychic activities or transactions. A transaction in their words is defined as the interaction between the user and the object and **interaction is defined as physical or mental involvement with the performance of an object.**

Further clarifications about the different aspects involved come from Brenda Laurel's definition of interactivity. She underlines the role of participation, playfulness, and cultural conventions[3] underneath it. And also clarifies the difference between productive versus experiential interactions, defining the second as activities "undertaken purely for the experience afforded by the activity as you engage in it" whereas the first ones have outcomes that are beyond the activity in itself.[4]

The nature of interactivity of the Flying Cape is then **experiential** and it represents a key aspect in the definition of the meaning of the object through a mental/emotional involvement generated by a performance.

In the next section I'll clarify the quality of participation and of the experience needed in the performance.

### 3.a.i. Experiential interfaces: Engagement as a function

Following Brenda Laurel's considerations, if we face the problem of building experiences and interfaces for non-goal oriented activities like leisure, then we have to expect that the aspect of delight and engagement become the focus of the activity and not a complementary aspect of it. It becomes the primary functionality in itself.

Engagement has cognitive components, but is primarily understood as an emotion. It is similar to suspension of disbelief: it is the state of mind we must attain in order to enjoy the representation of an action by pretending that the action is real to get the benefit of the emotion from it[5]. It involves complicity, as we agree to think and feel in terms of both the content and the conventions of a mimetic[6] context. In return we have possibility for action and emotional guarantee. We rely on the system to maintain the representational context. Engagement also entails a kind of playfulness, to spin "what if" scenarios around what is going on.

### 3.a.ii. Mimesis and Connotation

As interaction designers we have to master the communication variables of an artifact, to tune all of them to recall a specific quality or range of qualities we want the user to experience, for his pleasure, for his understanding. Dealing with products that did not exist and that don't have the mechanical constraints we were used to, means building up new mental models for them. In other words we start a fiction, we pretend new

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[3] "Buried within us in our deepest playful instincts, and surrounding us in the cultural conventions of theater, film and narrative, are the most profound and intimate source of knowledge about interactive representation. A central task is to begin to use them in the design of interactive systems." See Laurel, B., *Computers as Theatre,* (MA: Addison-Wesley, 1993), 21.

[4] Laurel, *Computers as a Theatre*, 22.

[5] Laurel, *Computers as a Theatre*, 113.

[6] The reasons why the context should involve a mimetic aspect will be better explained in the next section.

things being similar to something else, and we play with lifelikeness, analogy, and comparison.

Recalling a mental model for things we can take two ways:

- Attributing a conventional meaning to different element of it (buttons and labels)
- Following the map of possible interpretation created by the representation, in other terms giving the thing a character, a life, a recognizable frame to interact with, to express through.

Choosing the second option, building the frame for an experience to happen, means thinking about a range of potentialities in the description of a system, taking care of all the possible interpretations and providing a space in which the user can participate with my his/her own identity, experience, story. A system that should engage adhesion, challenge a rewarding discovery passing through the built expectations generated by a recognizable representation, granted by a "*mimesis*", an imitation of an existing object/context.

In other words this process gives the object transcendence. As **John Rheinfrank** stated in his lecture '**Products and Their Transcendence**', the transcendence of referential objects helps the user to incorporate them into his or her life in a meaningful way. In other words, for technological products to be integrated into our lives, they have to somehow reference, where they want to be placed. A way of placing and familiarizing technology is to create a historical connection. For example, earlier objects with similar functions could be referenced, or archetypal forms could be recalled.

Connotation is then our "mechanical" constraint, to convey the immateriality of functions provided by digital devices. It's however a looser constraint, which addresses culture, and opens the possibility for a personal interpretation.

Designers can induce behaviors addressing, individual cultural knowledge, the experienced one, the one that constitutes our categorization of the world, the one we build through senses in time and space. The one that takes shape in our mind as metaphors, that makes us, not expert, approximate our own explanation, through analogies, when asked to explain about abstract concept like hate, love[7].

Relying on meaning and on emotional participation, on engagement, can be dangerous as meaning is therefore not so much the arrived-at *sense* of an object, but a plunge into *sense-making* and a discovery of the

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[7] "Metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature." with this words linguist George Lakoff and philosopher Mark Johnson cogently argue that metaphor is not only destined to flowery prose and figurative language but it is integral to language and understanding. See

Lakoff, G., Johnson, M., *Metaphors we live by*, (Chicago: University of Chicago Press, 1983), 3.

qualities of objects that collaborate to produce authentic, meaningful situations.

So as Rheinfrank points out: "When an object is placed in a situation, it is meaningful in ways that may or may not have been predicted by its designer. The object may also bring about changes in the situation, changes that are in some sense a part of its meaning. Finally, the meaning of a thing is reinvented by each individual who uses it, and evolves along with the situation of which it is part."[8]

The Flying Cape presents mimetic clues in its appearance (the wing shape, the sound of the rushing wind, the lofting sensation of the inflating fabric, the haptic feeling of the parachute material) that involve in the wearer the building of the possible context of the "Flight Dream" in which, through the movement of the arms, "flying" become an achievable action.

## 3.b. Strategies for building participatory interactive structures

One of the critical features of the Flying Cape is the performance built into the experience of the object.
The interaction is the making meaning moment. The participatory nature is the key point through which the wearer gets to a "complete meaning", playing with and making sense of the expectations the artifact generated. In this section I'll make clear the different strategies used to generate participation.

3.b.i. Immersive experiences: a collaborative exercise of imagination

> *…and so deeply did he steep his imagination in the belief that all the fanciful stuff he read was true…*
> Miguel de Cervantes - ***Don Quixote de la Mancha***

The definition of immersion and immersive experience given by Janet Murray and Brenda Laurel in their landmark works, "Hamlet on the Holodeck" and "Computers as a Theater" respectively, is a cornerstone that elucidates another peculiar aspect of the interactivity designed in the Flying Cape.

Murray starts in her description of the nature of digital narrative from the power of narrative in itself as a primordial way to achieve a virtual reality. She points out that in any medium we experience a story, our brain is so deeply pre-programmed to tune into it that we can obliterate the world around us. This experience is often described in the literature about digital media as immersive.

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[8] Rheinfrank, J., Welker, K., "*Meaning*". In Michael Bierut et al. (eds.). *Looking Closer: Critical Writings on Graphic Design* (New York: Allworth, 1994), 44.

Immersion, as defined by Murray, is the experience of being transported to an elaborately simulated place, "…a sensation of being surrounded by a completely other reality…that takes over all of our attention, our whole perceptual apparatus"[9].

What digital media can bring as a specific and distinct feature to the world of immersive experiences is the **participatory nature of the medium**, that enables us to affect and learn how to influence the environment described by a narrative.

Laurel underlines this aspect too, putting "**participation** in the ongoing action of the representation" as **the very rudimentary and irreplaceable criterion to measure interactivity**, pointing out that one of the causes can be "sensory immersion and the tight coupling of kinesthetic input and visual response", as to say "action within a representation".[10]

The Flying Cape is not a screen based interface but a physical one, the space of the representation is directly on the body of the wearer and the tight coupling generating the immersive experience is played between the kinesthetic input and mainly, the auditory response.

This take care of the sensorial aspect; the correspondent process going on in the mind in the meanwhile can be traced in the frame of liminal experiences, that will be explained in the next section.


3.b.ii Liminal and transitional objects as triggers for imagination


Speaking about immersion, Murray underlines the key aspect of liminality[11] shared by both digital media as computers and narrative, as the kind of experiences they generate are located on the threshold between external reality and our own minds[12]

Liminal states are transitional or threshold experiences where unconscious elements become conscious, where boundaries are permeable. Through these experiences we are able to enact, through a performance, a transition from the real world to a fantasy. By putting our conscious belief in the power of a liminal object, we are able to trigger the transition because "the real thing is the thing that isn't there"[13].

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[9] See Murray, *Hamlet on the Holodeck*, 98.

10 Other criteria, set in a continuum, to measure the existence of interactivity are frequency (how often you can interact), range (how many choice are available), significance (how much the choices really affect matters). See Laurel, *Computers as a Theatre*, pp. 20-21.

[11] See Murray, *Hamlet on the Holodeck*, 99.

[12] Laurel too defines interactivity as a "thresholdy" phenomenon, highly context-dependent". See Laurel, *Computers as a Theatre*, 21.

[13] See Murray, *Hamlet on the Holodeck*, 100.

However what is more important is that through a liminal experience we're able to project our own interpretation, able to **enter an experience with our own subjectivity**.

Computers can be perceived as liminal objects because the filter through which they communicate to us are interfaces in which the representational aspect has a great place.

Every representation is in fact a pretense if compared to the reality of the physical artifacts that are represented (e.g. the manuscript we manipulate on screen). And the fact that the interface is a representation is the key aspect that enables our understanding of what we are doing, establishing the necessary mental model, term of comparison for every action we perform. The established model is not only functional but also emotional as in our expectations if something is made up and inspired from reality to a specific purpose it should avoid all the drawbacks of it and enable a more pleasurable experience[14]. Our assumption is that there is no threat of pain or harm drawn from the real world into the virtual one, that's why probably we often experience breakdowns.

The established model of the Flying Cape drawn through the representation and the aesthetic and functionality of the gesture, is the one of a bird, no matter what. The performed action, called up by the representation (a wing), is flying (the liminal experience, "the real thing that isn't there") and is based on the fiction we plunge into as soon as we experience the rewarding feeling of hearing the sound of the rushing wind coming out of the cape.

3.b.iii. Participation through a mask: a new view on embodiments

Ritual, parade, processions; celebrations like Carnival and Halloween all share a perfomative and spectacular nature, they are participatory event in which ordinary people can take part wearing a costume or a mask[15]. "Spectacle is used to create exultation, to move us to another order of perception, and to fix us in the moment"[16]

The simple gesture of covering the face or part of the body is actually a definition of the "boundary of the immersive reality and signals that we are role-playing rather than acting ourselves".[17]

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[14]See Murray, *Hamlet on the Holodeck*, 114.

[15] Murray mentions also two interesting experiments dealing with the potential of masks in virtual reality: *"Placeholder"* by Brenda Laurel and Rachel Strickland and *"Woggle"* by the Oz's group at Canergie Mellon. See Murray, *Hamlet on the Holodeck*, 114.

[16] See Murray, *Hamlet on the Holodeck*, 112.

[17] See Murray, *Hamlet on the Holodeck*, 113.

From a narrative point of view we evoke a specific rhetorical figure, **personification** or prosopopeia: embodiment of a representation. A metaphor in which inanimate objects or abstractions are endowed with human qualities or are represented as possessing human form.

## 3.b.iii.1. The trasformative power of enactment

From the telling of parables to the one of fairy tales storytelling has always played a role in our history as a powerful agent of personal inner transformation. Due to its peculiar aspect of participation, digital technology offers us now a new compelling possibility: the opportunity to not only listen but also enact, to **act out the transformation, be part of the story**.

Experiencing stories in this way can have a dramatic potential, never experienced before as through the acting we assimilate the ongoing events as personal experiences.[18]

Enactment is not far from our everyday experience, "one forgets that the "self control" demanded of a person in daily life, the control over the role one is playing, the ability to change and to dissemble, which is more or less enforced upon everyone by social intercourse and by one's profession, is directed by the player according to the picture which one to present to the spectator"[19]

## 3.b.iii.2. Players and Spectators: hybrid spaces as potential stages for a new genre of representation.

The self can be seen as an agent of playful performance and product of cultural codes. In a social context mimesis can be understood as imitation regulating the scripting of an actor within social roles and context, and as monstration manifesting itself in the process of enacting those roles and forming oneself as scripted **actors**.

In his classic work "The Presentation of the Self in Everyday life" sociologist Erwin Goffman proposed a dramaturgical model of social interaction that shed much light on the underlying rules, obligations, and demands of our everyday routine interaction. For Goffman, "within the

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[18] The emotional impact of enactment within immersive environment is so strong that virtual reality installations have found to be effective for psychotherapy. Another phenomenon observed looking at some MUD participants is that their usage of "imaginary personas is a way to practice their social skill the are trying to cultivate in the "real" world".  See Murray, *Hamlet on the Holodeck*, 170-171.

[19] Eckhardt, K., *"Concepts of Mimesis in French and German Philosophical and Antropological Theory"* in *The Play of the Self* ed. by R.Bogue and M. Spariosu. (Albany: State University of New York Press, 1994), 78.

walls of a social establishment we find a team of performers who cooperate to present to an audience a given definition of the situation"[20].

Situations, selves, and all facets of social life are framed in a dramatic scene, a stage, in which human actors play their repertoires drawing from an array of roles, striving to project an image consistent with the identity that he or she (and others, and the situation itself) claims to be his own.

We can understand this **invisible big stage** as the place in which we play our own narrative, in which we, actors, must always fashion our own lines and shape **our own plots**, and hence create ourselves, within these broadly determined constraints of collective action.

Within this established context of social **narrative,** playful applications of digital technology can bring new interactive masks that can enable transformations and the acting out of new roles.

3.b.iv. Mimicry: a playful game for adults

> *All play presupposes the temporary acceptance, if not of an illusion (indeed this last word means nothing less than beginning a game: in-lusio), then at least of a closed, conventional, and, in certain respects, imaginary universe.*
> *Roger Caillos, **Man, Play and Games***

What I consider the key feature of the Flying Cape is the playful, for adults, dynamic function added to the garment: the open-up possibility for an elegant transformation.

Roger Caillos, in his now classic anthropological study "Man, Play and Games", dedicates a long section to this category of play he calls "Mimicry". *Mimicry* comes in when we plays Nero, a pirate or Hamlet, when we disguise ourselves, wearing a mask, playing a part, feigning another personality. This kind of game tends to cross the border between childhood and adulthood, being the pleasure the very simple one of being or passing for another, embracing in one category masks, travesty and theatrical interpretations.

"With one exception, *mimicry* exhibits all the characteristics of play: liberty, convention, suspension of reality, and delimitation of space and time. However, the continuous submission to imperative and precise rules cannot be observed- rules for the dissimulation of reality and the substitution of a second reality."[21] It consists in a deliberate

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[20] Goffman, E, *The Presentation of the Self in Everyday Life*, (Garden City, New York: Anchor-Doubleday, 1959), 238.

[21] Caillos, R., *Man, Play and Games*, (Chicago: University of Illinois Press, 2001), 22.

impersonation, in the desire to assume a different personality. If played with too much intensity can lead to fatal deviations like alienation or split personality.

"*Mimicry* is incessant invention. The rule of the game is unique: it consists in the actor's fascinating the spectator, while avoiding an error that might lead the spectator to break the spell. The spectator must lend himself to the illusion."[22]

## 3.c. A Poetic model: evocation versus denotation

In this section I give evidence of the poetic, magic aspects people often evoked referring to the Flying Cape. I'll close the section mentioning Umberto Eco's "Open Work" theory about the model behind an evoking object, specifically an artistic one.

3.c.i. Fragments: a poetic model for condensing an experience

> ***Verses*** *are not, as people imagine, simply feelings, they **are experiences**. For the sake of one single verse, one must see many cities, men and things, **one must know** the animals, one must feel how the birds fly and know **the gesture with which little flower open in the morning…**(all these experiences) they have turned to blood within us.*
>
> *Rainer Maria Rilke*

Many people defined the Flying Cape as a poetic object. I thought there was more in this comment than an allusion to a romantic or gracefully expressive quality of the object. I'm persuaded to believe that the poetic aspect people perceived was also due to the form of expressiveness and model of communication we chose.

The allusion to poetry wasn't accidental because from a poetic perspective the Flying Cape can be compared to a verse and in particular to a fragment. Fragments by definition are part of a lost whole, they have specific qualities of evocation, because they imply and refer to a system that must be inferred; they are open systems, they ask for completion.

In the case of the cape, the completion is the performance and the interaction with the personal narrative. The cape has to be worn with playful or performative intentions, to fulfill a desire of feeling like a bird or of astonishing an audience.

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[22] Caillos, R., *Man, Play and Games*, 23.

If fragments are connoted enough for our recognition and understanding abilities they are able to recall the system that generated them, their origin, and the story they bring with them.

We could call this quality condensation because the very fact of being detached from a whole does nothing but increase the already evocative nature of a verse. Verses can really be described as **condensed experiences evoked through the very precise mimesis of the memory that a phenomenon left into the senses and from that in our mind**.

The process we went through was exactly similar to this one, the re-description through a mimesis of the memory of the sensorial aspect of the Flight Dream experience (made similar to the shared one of pulling a kite), and from that the generation of the liminal experience of flying.

## 3.c.ii. "Open Work" and procedural authorship: creation within open structure

Semiotician Umberto Eco in his landmark work "Open Work" notes that all forms of understanding are by their nature tentative acts of inference. Taking examples from mid to late twentieth century western aesthetic practices, Eco describes the phenomenon of the "Open Work", the work "in movement", in which there's not a single prescribed point of view but a possibility of numerous different personal interventions[23]. He points out how the invitation to participation offers the performer the opportunity for an oriented insertion into something, which always remains the world intended by the author.

"In other words, the author offers the interpreter, the performer, the addressee a work to be completed. He does not know the exact fashion in which his work will be concluded, but he is aware that once completed the work in question will still be his own…The author is the one who proposed a number of possibilities which had already been rationally organized, oriented, and endowed with specifications for proper development."[24]

Every performance offers then a complete and satisfying version of the work, but at the same time makes it incomplete because it cannot simultaneously give all the other artistic solutions.

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[23] "The possibilities which the work's openness makes available always work within a given field of relations. As in the Einsteinian universe, in the "work in movement" we may well deny that there is a single prescribed point of view. But this does not mean complete chaos in its internal relations. What is does imply is an organizing rule which governs these relations. Therefore, to sum up, we can say that the "work in movement" is the possibility of numerous different personal interventions, but it is not an amorphous invitation to indiscriminate participation. The invitation offers the performer the opportunity for an oriented insertion into something which always remains the world intended by the author." Eco, U., *The open work*, (Cambridge: Harvard University Press, 1989), 19.

[24] Eco, U. *The open work*, 19.

These considerations couple with the debate around the dilemma of authorship in digital media. Author and we could say designers, are defined as "procedural" as their role is to write the "text" in itself and the rules for the interactor's involvement (conditions under which things will happen in response to the participant's actions). In other words the author defines properties and relation of object within an established environment (narrative possibilities). From this perspective then the interactor has a derivative (already defined and established) authorship, we can call agency, is the "author of a particular performance" or the "architect of part of world"[25] in which the story takes place.

Playing with references and open-ended structures in artifacts, designers can allow the arousal of different working hypothesis about the function of an object, opening up different access points, not relying on a linear learning process of a manual, or of a sequence of instructions.

The Flying Cape is then an open-ended artifact designed for an open performance in a social context. The object relies on a desire/personal narrative to get to a completion through an interaction, whose rules are established by the designer.

### 3.d. The cyborg: the emerging mask in Wearable Reserch

Wearable computers[26] are mostly intended in the world of research as functional devices, meant to be worn as smart objects or intelligent assistants, in the frame of communication and context aware tools[27]

Looking at the history of wearable computers traced at the MIT Wearable Group and at many of the experiments carried out in the last 20 years we can realize how science fiction has affected our imagination, the results have shown us what a technology driven exploration by male scientists

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[25] See Murray, *Hamlet in the Holodeck*, 153.

[26] Definition from the page of the "Wearable Computing Group" at MIT: "To date, personal computers have not lived up to their name. Most machines sit on the desk and interact with their owners for only a small fraction of the day. Smaller and faster notebook computers have made mobility less of an issue, but the same staid user paradigm persists. Wearable computing hopes to shatter this myth of how a computer should be used. A person's computer should be worn, much as eyeglasses or clothing are worn, and interact with the user based on the context of the situation. With heads-up displays, unobtrusive input devices, personal wireless local area networks, and a host of other context sensing and communication tools, the wearable computer can act as an intelligent assistant, whether it be through a Remembrance Agent, augmented reality, or intellectual collectives." http://www.media.mit.edu/wearables/

[27] See the website of Mit Wearable Group for an overview on the subject and a complete list of the current researches, http://www.media.mit.edu/wearables/lizzy/context.html

can relive as an imagery for empowerment in the field of wearables: the cyborg[28].

Empowerment is often intended as prosthetics, implants or as a dream about high effective and productive techno-gadgets.
The machine looks like the focus; its power to affect and physically augment the possibilities of the wearer is the core of the attention and of the design.

3.d.i. Steve Mann experience: a living Cyborg

A particularly influential experiment seen in the cyborg dream, but with a declared different aim from an augmented functionality or efficiency, is the one carried out by Steve Mann. The perspective from which he looks at himself is that of a living experiment of what he calls "existential computing". The declared goal of his `existential computing' is not to increase productivity but "rather, to reclaim the personal space (prosthetic territory) lost by invasive technology".[29]

In this way Mann is deconstructing the established vision of CHI by eliminating "the artificial (unnecessary) boundary by 'becoming' the computer, rather than merely interfacing to it." He literally often defined himself as an embodiment of his Wearable Wireless Webcam apparatus.[30]

Steve Mann is a cyborg in the sense that he sees the entire world, including himself, through a video lens, his WearCam. He can control what he sees, liberating his visual space from an undesired overwhelming visual stimuli. Thanks to "WearComp," Mann is perpetually in contact with the Internet, communicating when he wants to by tapping messages on a pocket device and better by projecting the view from his eye-level camera onto the web. His senses of sight and hearing are thus mediated and enhanced.

While recognizing the danger that human beings could be controlled by technology, Mann is also fascinated by the vast possibilities presented by the wearable computer. In an increasingly Orwellian world, his cyborg philosophy, described in his book "Cyborg: Digital Destiny and Human

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[28] Cyborg: Cybernetic Organism, A human who has certain physiological processes aided or controlled by mechanical or electronic devices. The dream about this kind of organism can be traced back in the history of culture in many instances from Mary Shelley's "Frankenstein" to the legend of Rabbi Loew's Golem, from Japanese Anime's "Kiashian" to the recent Star Trek New Generation creation of "Borg" race. Check out the latest debate around the myth and its meaning in the website http://www.cyborgmanifesto.org/.

[29] See http://eyetap.org/wearcomp/chi97/node2.html#SECTION00010000000000000000.

[30] See his declaration at the website http://telematic.walkerart.org/telereal/mann_mann2.html: "Now since I wear (or, in the more existential sense, "am") an embodiment of my Wearable Wireless Webcam apparatus, one of the Web pages I show to the audience is my "Put yourself in my shoes and see the world from my perspective" page."

Possibility in the Age of the Wearable Computer", is that the individual's only hope is to fight technology with technology.
In "Cyborg", Mann describes his vision foreseeing a future in which humanity is freer, safer, and smarter thanks to wearable technology, thanks to the augmentation of "human intelligence" prosthetics can generate, allowing also a distributed and two way control surveillance, no more monopolized by the State or by corporations.


3.d.ii. Donna Haraway Manifesto: a feminist view of the Cyborg

'Socialist-feminist' theoretician Donna Haraway, gives us a completely different view about the figure of the cyborg in her 'Cyborg Manifesto '[31]

She sees the information revolution as the material foundation of the new order and theorizes, or rather, 'plays' with its consequences for women. The new material reality of the information revolution brings from her point of view new oppressions and new radical possibilities, suggesting also both the need for and possibility of deploying new methodologies for the feminist project.

This reality figures for Haraway in her notion of the 'cyborg'. The cyborg is a 'cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction'. It's an 'ironical' figure as a model both for a way of being as individuals and a way of politics.

Cyborgs are both the potentially radical grouping of the new international working class — especially the women of the new 'homework economy' — whose identities are fractured, shifting, part of the great network of world-wide information; and those cultural radicals who actively embrace the cyborg form where it liberates us from the subject form of modernity, dispensing with all essentialisms, all myths of lineage and genesis.

But for Haraway, feminists have a choice. They may counter the current power frame of the information revolution by "coding" the cyborg self according to their ends.

Haraway offers also a project for the body in the late twentieth century, more radically open to reinterpretation than any body before it. Once bodies come to be seen as information, as interactions between them and between their parts come to be seen as a matter of coding or as texts, the relative opacity they enjoyed under modernity is circumvented.

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[31]  Haraway, D. J., "A Cyborg Manifesto: Science, Technology and Socialist-Feminism in the Late Twentieth Century." In *Simians, Cyborgs, and Women: The Reinvention of Nature*. (New York: Routledge, 1991), pp.149-181.

"A cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints"[32]

The cyborg features then a radical transgression of the old boundaries, it's a 'heterogeneity without a norm' achieved by the information technologies, a 'deconstruction' of masculine-feminine dichotomy. A body of fictional limits, a surface upon which new fictions may be written, the manifestation of the codes we manipulate. It is the body over which we may effect a new kind of 'autonomous' control.

So the cyborg is many things in Haraway's essay but it's above all a metaphor of the constructed reality we must comprehend, a form of knowledge that can only ever be partial, as much as the 'situation' allows. Feminism too is a form of 'situated knowledge' that may guide scientific and other kinds of access to the real.

## 3.e. Wearables for performances: collision with fashion

The history of wearable computing presents also few experiments that take a different perspective and look for an alternative aim for this kind of technology.

### 3.e.i. MIT fashion wearable explorations

In 1995 MIT Media Laboratory, through the initiative of professor Alex Pentland, started collaboration with four of the world's greatest design schools (Bunka Fashion College in Tokyo, Creapole in Paris, Domus in Milan, Parsons School of Design in New York) to investigate the possible collision between fashion and wearable technology, to make functional technology fashionable. During summer 1997, selected students from the fashion schools were invited to work with engineers at MIT. Of the overall almost 100 submitted rederings some became working prototypes and others were only fanciful ideas. The work culminated in a fashion show held in Paris.
The results of this collaboration are showcased in The Beauty and the Bits website.[33]

Along a similar line of exploration but this time investigating the impact of wearable technology on performance arts, in February 1998, at the Networked Entertainment World conference in Hollywood, Prof. Alex Pentland, together with students and faculty from the California Institute

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[32] Haraway, D., *A Cyborg Manifesto*, 180.

[33] See: http://www.media.mit.edu/wearables/lizzy/out-in-the-world/beauty/intro.html

for the Arts, presented a series of dance and performace pieces entitled `The Body Electric'.[34]


### 3.e.ii. "Social functionality" and wearables

Particularly inspiring is the take on the problem of designing personal technologies Despina Papadopoulos and Ion Costas from 5050Ltd New York have in their work. They underline the role of what they define as "Social Functionality", in the creation of wearables.

The term ''social functionality'' they introduced refers to those aspects of a device that are specifically designed to elicit sociability and serendipity. It also refers to those aspects that enable users to communicate or represent individuating characteristics through the use of their device. They focus their approach for designing personal devices around the tied link between identity and social spaces; fused by the presence of modern technology, underling the new needs for expression of one's identity and definition of one's space.

Facing these new challenges, and being conscious that nothing about identity can be prescribed, their aim becomes to "design favorable conditions for certain experiences to occur and to accommodate or promote certain lifestyles".

Social functionality is defined not as an external gratuitous embellishment for a device designed to generate emotional appeal, but as a real addition to the "device's core functionality that enables the device to be used as an agent of sociability and serendipity. Sociability is defined as ''the inclination to seek or enjoy companionship'', serendipity as ''the faculty or phenomenon of finding valuable or agreeable things not sought for''."[35]

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[34] See: http://www.media.mit.edu/wearables/lizzy/out-in-the-world/cia/oohlalamm.mpg

[35] Papadopoulos, D., Constas, I., *Interface-Me: Pursuing Sociability Through Personal Devices*, Personal and Ubiquitous Computing, Vol. 5. (Springer-Verlag, London 2001), 195-200.

# 4. Reverie engines

Reverie Engines explore a specific **instance of immersion** in the field of wearable devices. I chose to explore this particular application of technology because it allows an intimate relation with the body and the identity through the creation of augmented garments and accessories.

Wearables bring interactive behaviors to garments. We open up the possibility for an altered perception of ourselves, through an empowerment of our identity caused by the devices we wear. Wearable computing represents a fertile opportunity for interaction designers willing to create the feeling of empowerment and involvement in a user, through designing interactions that can lead to a new perception of the self, of the moment and of the place. A simple **behavior** can become a **potential narrative element** interacting with a personal narrative and with a potential audience.

Going through this exploration my main question has been the following:

**Is it possible to create wearables that support personal narratives?**

More specifically my idea deals with the hypothesis that wearable devices can create the possibility for a liminal experience that enables a transformation in the user, allowing her to unfold a personal narrative interacting with a device that recalls a particular identity or role about the performer.

An additional outcome of this transformation, if performed in public, can be the alteration of the context introducing non-diegetic[36] events in a space and time, which induce a new estranged perception of the performer in onlookers.

Based on interviews and studies of women and their desires for empowerment in various aspects of their lives, "Reverie Engines" are prototypes for interactive fashion products that allow women to fulfill such desires. **"Reverie engines" are exploratory interfaces** in which delight and engagement are the main functions. They take the form of stylish shoes or gloves, and recall the woman's desire for more power and control over situations in her life.
By evoking fantasies of goddesses and heroines, they are wearables that **work as masks** allowing us to interact with our identities **unfolding**

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[36] "Diegesis" is a Greek word for "recounted story". The diegesis is the total world of the story. A non-diegetic element is something that cannot be explained as deriving from the fictional world of the story. In film sound theory the distinction between diegetic or non-diegetic sound depends on our understanding of the conventions of film viewing and listening:  we know that certain sounds are represented as coming from the story world (noises, voices, sound of the story), while others are represented as coming from outside the space of the story events (voice over, soundtrack).

**different personal narratives**, generating opportunities for new performances in everyday life.

Three concepts have been generated within the following constraints. Reverie engines are devices:

- Enabling a transformation in the perception of the self
- Working as exploratory interfaces
- For delight and engagement

They will be explained one by one in the following paragraphs. Every description is comprehensive of a "persona" delineating the profiled user of the device and of a scenario showing a context of use.

## 4.a. The Beauty and the Beast



*Figure 4. Final working model for The Beauty and the Beast*

Drawing from the character of Selina Kyle and of her alter ego Catwoman, pictured in the movie "Batman II" and in Batman's comics book, a pair of earrings coupled with a pair of elegant shoes disguise an expected feature: when clicking on the heel a whiplash sound rings out. Designed for an emotive woman who no longer wants to be a victim or without words. For her a special "word" to be kept for the right moment when she's no longer altruist or willing to accept compromises and she suit her own whims…
This device is created to help self-motivating when she feels down or when she wants to dramatically re-establish her place in the world with a whiplash.

### 4.a.i Persona: Lizzy

Lizzy is a nice and cheerful woman in her early thirties. She is the assistant of the curator of the local Natural History museum.

She is married to Richie. Their love was at first sight, they met on a flight to Madrid and they got married three months after.

As she appears to be a balanced person, she is well liked by everybody for her kindness and joyful character. She is also very sensitive and romantic and goes into raptures every time they broadcast "Pride and Prejudice" on American Movie Classics Channel. She loves to read novels and never misses a premiere of the latest James Ivory's movie.

*Figure 5. The sketch of Lizzy*

Due to her sensibility she often gets upset when people treat her with rude manners and she always hopes to find the energy to answer back in the same way.

You'd often hear her saying: **"Sometimes I'd love to be able to remind myself how good I am".**

### 4.a.ii Interaction

The **sound of the whiplash is activated by stamping the heel**. There are two modes. A switch is hidden in the earphones-earrings to shift from one mode to the other. In the private mode the wearer is the only one who can hear the sound through the earring when she stamps on the heel, shifting to the public mode the sound can be heard by people around the wearer.

### 4.a.iii. Scenario

**(The Private Use is "ON")**

Lizzy woke up this morning with a strange sense of uneasiness. Her messy hair framed her face as she looked herself up in the mirror.
"Not a good day" she thought.
Her mind was going back to the night before when at dinner Richie had told her off quite bluntly.

"You can't do anything right, can you?? I can never rely on you! I'd asked you to make that booking 5 days ago and what happens? You wake up this morning and think about it!!"

Lizzy had answered without hiding her disappointment too well: "I'm sorry, it totally slipped my mind, you know I'm nervous these days for the interview…and also I really didn't think we'd have any problems booking today!"

"Yeah great! Cost me twice…" had been the laconic reply.

"The interview, the job interview", was all she could think about.
Today was the day: the last step between her and that damned job she'd been dreaming of so long. A face-to-face meeting with the director of National Museum, who would have ever thought…"

"Okay, a hot bath, ready-to-kill make-up, he just won't be able to resist me…" she whispered to herself in her head.
…
 Aahhh! This is what I needed – now I'm at peace with the whole world…
… Lipstick, eye-liner, brand new dress – okay it cost me a fortune but God I look good in it! – Shoes?..hmmm, sure, *Those*! - the final touch….Excited, she thought.

She was ready. She hit the floor with her heel: the sharp sound of a whiplash rang in her ears.
Lizzy smiled at her own reflection in the mirror.
"Okay World, here I come!"

*Figure 6. Sample frame from the movie scenario*

**(The Public Use is "ON")**

The usual boss tantrum. The delivery for that morning had been delayed three days, and she couldn't do a single thing about it.

"It's got to be here tomorrow, that's it! Period. I've got nothing else to say to this!" he barked as always, then he turned around and strutted down the corridor.

Rage was burning inside her; Lizzy was stock still with tight fists. "NO!" she thought, "not this time, NO WAY!". She brushed her right earring with one finger and stamped the floor with her foot. Suddenly a harsh whiplash filled the office. John turned around, baffled.

"Did you say something?" he said with a mocking smile on his face.
"Yes, John, in fact I did. It was my last word" she started walking over to him.

"I'm leaving, John".
"Uh yeah? And where the hell do you think you are going?"
"I've got a new job at the National Museum. See you there, John."
She said walking by with a victorious smile on her face.
She was now free.

## 4.a.iv. Prototype

The appearance of the shoes must not suggest anything different from a normal pair of shoes, to preserve the surprise feature of the transformation, so the shape model is just a pair of elegant black shoes with a visual clue of where the loudspeaker should be placed.

The working prototype developed is a Plexiglas shoe. Under the removable heel is placed a FSR sensor able to detect the stamp of the foot. Inside the heel is hidden a circuit board with a BasicX24 micro controller connected to a ISD 2569 integrated sound chip. The sound chip is connected to an 8 ohms loudspeaker through an amplifier. Two 9 volts batteries power the circuit through a switch placed on the side of the heel.

## 4.b. A touch of a siren



*Figure 7. The final shape model of the glove*

Drawing from the myth Sirens, icons of female sensuality, creatures able to produce sensual enchanting sounds, a pair of gloves that transforms the massaging touch into a sensual relaxing sound.

Fingers are webbed to create an immersive space around the head while massaging; palm internal tips are decorated with small slippery stones to allow a level of artificiality in the touch. The activity that is performed shouldn't recall straightway a masseuse, it should be filtered by a displacement due to the not natural, unknown quality of the touch. The primitive, echoing and sensual sound emitted by the palm of the gloves should project you in a dimension of relaxation and of oblivion.

*Figure 8. The sketch of Lorie*

### 4.b.i. Persona: Lorie

Lorie is in her early thirties and has been dreaming about being a singer since she was 5 and she saw her first concert of Joan Baez. Every On Saturday nights she sings in the local popular pub. She has reached popularity due to her voice that people consider particularly evocative and touching.

In her everyday life she is a nurse, the head of the ward in a private clinic, where she takes care of elderly people. Due to her job she has a lot of physical contact with people so she has a constant filter on, not to be too much involved. People consider her a real professional; she is always firm and calm.

She lives with Scott, her boyfriend. Their relationship is quite steady, he is a very sweet guy but Lorie feels she would love to surprise him by being less icy and stiff as she is sometimes.

She once confessed to her girlfriend Anna: **"I'd love to know how to touch and cure Scott with my fingers."**

### 4.b.ii. Interaction

Massaging the head the palm of the gloves after a few seconds a sound fades in, a white noise (recalling the sound of a shell placed near your ear), whose pitch is mapped to the pressure applied by the fingers. After a while an echoing voice of a woman is added to the white noise to suggest the singing of a siren. The sound fades out when the pressure of the fingers is over.
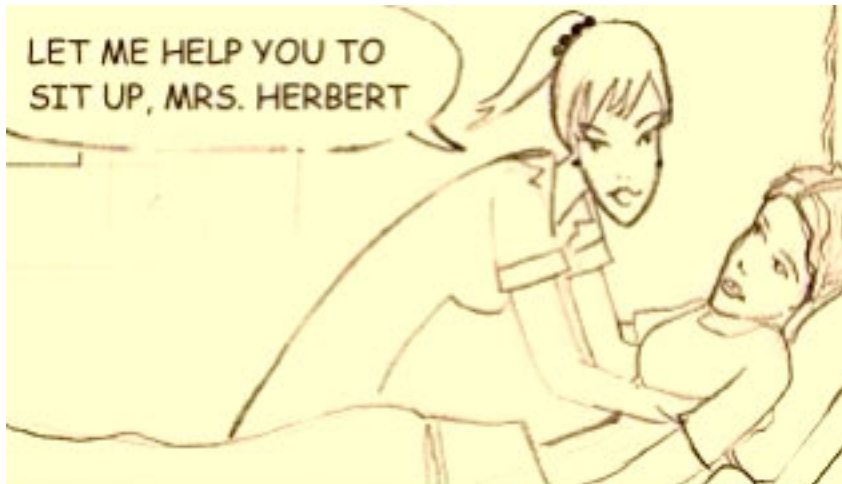
### 4.b.iii. Scenario

Figure 9. Sample frame from the movie scenario for Lorie

Late evening of another usual tough day at S. Martin Hospital. Lorie's shift is about to end. She had lots of calls from the patients today, but luckily it's almost time to go home.

"Let me help you sit up, Mrs. Herbert"
"Oh thank you Lorie" whispers the old lady.

" I'd like you to turn around now Mr.Warner, it's time for the injection"
"The usual chilly bed side manner, eh?" comments Mr. Warner sadly.

At last alone in the changing room, Lorie slumps in the old armchair with a deep sigh. "But tonight Scott comes back from New York" she smiles in her mind.

An hour later she's finally home. The light is on in the living room. All of a sudden the long trip in the tube is just memory. "Hi my love, welcome back" she smiles "I have a surprise for you!" she claims with mystery in her voice.

She walks over to him opening her shopping bag and pulls out a pair of brand new fancy gloves –"close your eyes please..."

She puts the gloves on with a thrill of excitement and enters the living room. She sees his familiar back, and before Scott can do anything she walks over to him and puts her hands gently on his head: "Don't turn around now, close your eyes..."
Her hands start massaging his head.
"Oh wow...YOU're massaging ME..." – his voice is really baffled.

After a few seconds, a quiet yet penetrating sound, like a white noise, pervades Scott's ears. Then an ethereal female voice floods in. Lorie smiles as she feels Scott's head relaxing under her touch.
"oooh...baby...this is music for my ears..." – he is ecstatic.

Within a few minutes, Scott's tiring long journey is just a memory. He turns around to Lorie, mesmerized, happy: "my goddess, you're my Siren!"

## 4.b.iv. Prototype
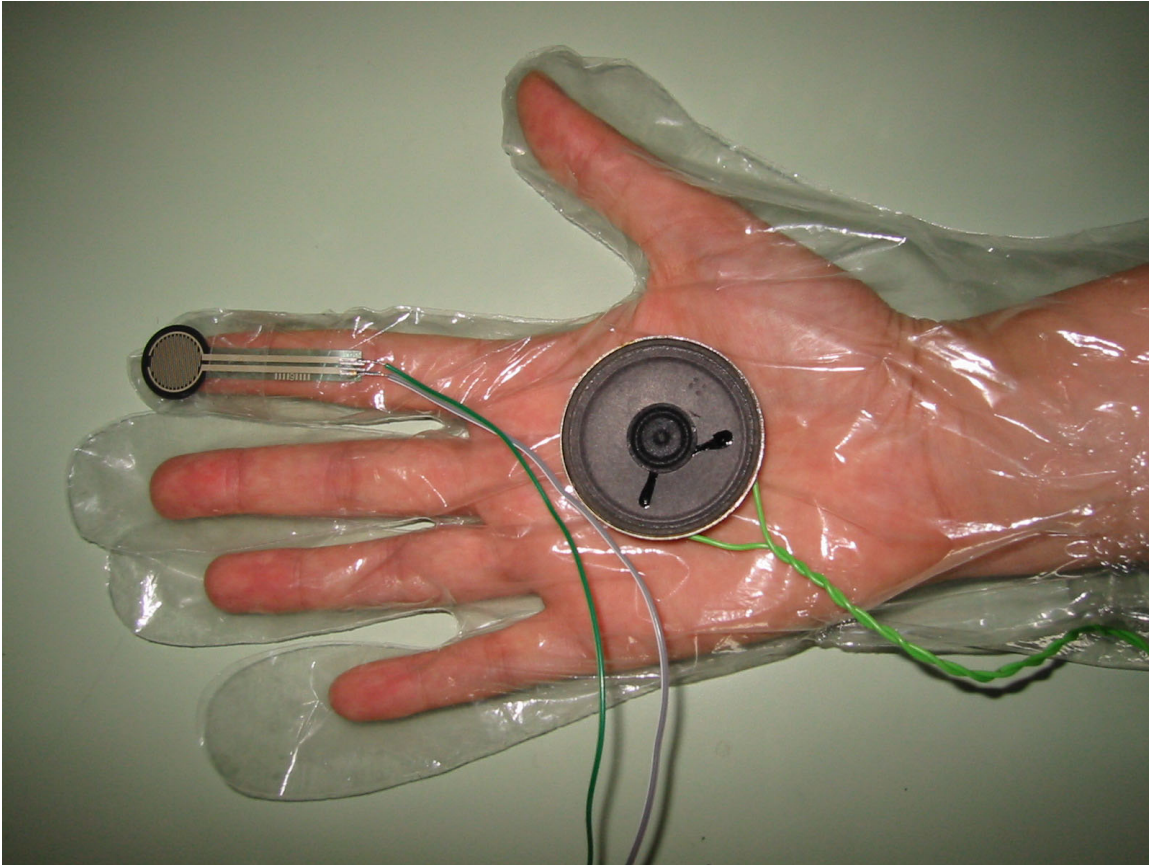


*Figure 10. Final working model for A Touch of a Siren*

Two prototypes have been developed. The first (fig. 7) shows a proposal for the appearance of the webbed glove. The second (fig.10) is a functional working prototype to test the mapping between pressure and sound. It's a transparent plastic glove with an embedded loudspeaker and FSR sensors on the tips connected to a basicX24 micro controller driving the sound stored on an ISD 2569 integrated sound chip.

## 4.c. Electric Cinderella



*Figure 11. Working model for the Electric Cinderella shoes*

Drawing from the myth of Cinderella a pair of elegant sexy shoes with a crystal toe but with a new power inside: a stun gun. It's just a shielded, potential weapon, meant to be used only once, as she has to break the glass to use it.

Cinderella is no more without defenses; waiting for the prince to save or worse to chose her. She goes out and enjoys the world without fear; she can now intimidate intimidators without losing her innocence.

She can have her freedom, Cinderella transforms herself into Barbarella: sexy curious queen of discovery.



*Figure 12. Images from the movie Barbarella*

Figure 13. The sketch of Milla

### 4.c.i. Persona: Milla

All we can find out about Milla is that she is an ex model in her late twenties. She is a tall, slim, long legged woman. Every time she strolls along the Corso in Milan she gets the attention of all the people around her, even if sometimes she would prefer not to get it.

She is now a fashion journalist for "Vogue Italia", she gets to travel all over the world and every time she is in a new place she cannot help the curiosity to take a look around, shoot photos of people. In New York, she has a lot of friends in the art field and every time she gets in town she is always invited for the opening of the latest hot spot.

From time to time she is seen dressed up for these big events, wearing high stiletto heels and constrained into a beautiful stretch black short dress that straightens her back and leaves her legs uncovered.

By asking around everybody agrees in saying that her beauty comes from the never forgotten tomboy that still lives in her: through her curiosity and love of freedom.

She once confessed to her best friend that for her beauty is a double-edged sword, as being admired by other people is often quite an enjoyable sensation but sometimes it puts her in the position of being the victim of ill-intentioned people.

She literally said: "**I wish I could intimidate intimidators**"

### 4.c.ii. Interaction

Shoes are powered by a 9 volts battery hidden in the heel and are activated by pressing a button hidden in the earring. The crystal toe, that contains the stun gun, is scored so that it breaks more easily when you want to use it.

### 4.c.iii. Scenario



*Figure 14. Sample frame from the movie scenario for Milla*

"You're looking good tonight" was the very last slimy comment she was able to cope with that night, in that silly 80's party in Johnny's fancy loft on Central Park.
"It must be my new shoes, I find them shockingly more interesting than I do you" she answered, pointing her foot out.

She had left the room sighing and had walked to the entrance to pick up her black leather jacket.
The crisp air of the park had chilled her out, and walking along the river with wide strides had helped her as usual to free her mind.
Now she was staring at the pavement with a thin smile. The half idea, which had been in the back of her mind since the morning, was now surfacing clearly. Mark had told her of this old, decaying district where groups of youngsters would meet every night to dance to underground music. It sounded like the right thing for the article she was writing on new trends amongst the young.
It was late, it was dark. But she looked down at her feet, and she smiled at the thrilling spark in her shoes.
She was very pretty, heading to the worst part of town, in the middle of the night, alone, with a fancy handbag and a very expensive camera in her pocket.
Yet she felt secure: it was definitely the right night to go.

### 4.c.iv. Prototype

The prototype developed is a Plexiglas shoe. Inside the heel is hidden the circuit board of a stun gun and a 9 volts battery. Two wires run along the shoe reaching the toe where the electric stun beaks emerge from the sole.

## 4.d. Process

The process I went through to get inspirations for my project "Reverie Engines" was guided by the desire to understand, emphatically as well as theoretically, the different aspects of the problem that was puzzling my mind: how some interactive objects can change the way we perceive ourselves, our identity, how they can allow brief daydreaming moments or engage an interaction mainly with our imagination.

To explore the problem I decided to inquiry two different aspects through two diverse methods. A bodystorming[37] experience, on myself, that could enable a mid term transformation of my appearance, to directly and emphatically experience its effects on the perception of my own identity.

4.d.i. **Iteration I**. A bodystorming experience: "Braids and dreadlocks", wearables for aesthetic purposes

The main assumption developing my thesis is that identity is a discursive process: during our entire life we build and rebuild an image of ourselves through the perception of people and through a story we tell every day in front of a mirror.

Generally this story changes through time and is embodied in objects we bring with us or on us. Looking at them we go through our history again and again, sometimes changing it to the point where, after a while, we don't know what the original one was.

From this perspective, aesthetic appearance becomes a function to activate that specific narrative about oneself, working through to a personal performance, through a cultural connotation we communicate to an audience.

This is probably the main motivation behind aesthetic surgery, augmented reality through silicon, tattoos, etc...

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[37] Bodystorming is a technique part of the "Informance" method of technology design developed by Interval Reserchers to foster an "empathetic" and "embodiment" approach to user-centered and scenario-based design. ""Informance" (informative performance), brings together multiple discourses and disciplines to engage designers with real world people and interaction at many levels. In short, informance draws upon 1) ethnographic methods of fieldwork to observe and record the interactions of real people; 2) conversation analytic and ethnomethodological methods to analyze that fieldwork data; 3) scenario based interaction design techniques like storytelling and storyboarding; and 4) performance and improvisation methods--what we call "bodystorming" and "repping" (reenacting everyday peoples' performances)--for living with that data in embodied ways. By re-performing the interactions of real users, designers come to an intensive understanding of how technologies are really used, and are able to better imagine potential future social scenarios of how their products may be deployed within various cultures of practice". See Burns, C., Dishman, E., Johnson, B., and Verplank, B. *"Informance": Min(d)ing future contexts for scenario based interaction design.* Presented at BayCHI (Palo Alto, August 1995). Abstract available at http://www.baychi.org/meetings/archive/0895.html.

What about when ubiquitous computing comes and someone starts thinking about implants in bodies, what can motivate people to do it?

Can an aesthetic/narrative function be the real killer application for it?

During my stay in Amsterdam, at the "Doors of perception" conference, I caught the opportunity for a little experiment on myself.

It was a long time since I was thinking about playing with my identity through a change in my style or in my aspect to affect how people look and think about me.

I hate the idea of implants, I cannot even think about having something extraneous on or in my body and this is my experiment to understand what does it mean to wear, to take care, to get rid of it and how all this changes my behavior, my perception about myself and other people's idea about me. Amsterdam is the right place to play out of the rules within an interesting margin of tolerance. People are used to having respect for other people's thoughts, race, and bodies and there is room for experimentation of every kind and people normally do it.

I did it. I decided to put fake hair on my head, fake braids, fake dredlocks of different colors.

## 4.d.i.1. Excerpts from my Journal



Figure 15. Braids and Dreadlocks in Amsterdam

He simply said: "Oh that's so beautiful. It suits perfectly with your eyes and face". It's a nice sensation when someone you love can accept such a drastic change with a smile, without asking, simply understanding your enthusiasm and being fully with you.

"Eyal could recognize me from far at the station among a crowd of people because as he said: "Your hair are a clear landmark ☺. I knew it was you"

"Lots of people stop me at the Conference, they smile at me and want to know how come I've this crazy head full of colors. I met so many people…I can't believe it's me speaking so much…"

"Oh, oh they hurt in the night."

"Uhm, I need to wash my head and I'm so scared…I'm gonna look like a hippy sheep after ☹".

"Wow we went skiing today. I couldn't believe it was myself in the mirror this morning, I looked like a rainbow gradient with all these colors. On the snow was even better ☺. A group of youngsters, snowboarders, stopped me asking about my purple dredlocks. They had them too but they were not purple. "Cool!" they said. After a chat I felt 10 years less on my face. ☺ I'm getting old, if I go on in this way next year I'll need a plastic surgery…

"Wow, I love them! Every morning I can arrange them in different ways, they look always good. A dream if compared to past, every morning with an impossible messy head…That's great!"

"While we were queuing for lunch Livia was staring at my head. She smiled at me and said: "That hairstyle is pulling out your hippy side even more". I hugged her, she totally understood how I feel comfortable now."

"Oh God that mask it's your mask" was like a chorus when I tried it on. It was years since I was dreaming about wearing a Titania costume, made up by myself. Now I've all the pieces.

…

## 4.d.i.2. Findings

I learnt how wearing something so intimately connected to my body. It actually really changed the perception I had about myself. I definitely felt that my hippy, Celtic fairy side was more free and able to *be* through the simple gesture of looking at my face in the mirror and recognizing a new possibility for my identity.

 It wasn't an articulated fantasy of doing or behaving differently, it was an actual acceptance of something emerging naturally and comfortably. It was above all a recovered way of being, that was lived only as potential till that moment. It really allowed me to be someone else, that was already there, in me, and above all I think I experienced how comfortable was to be in that way only at the end.

I was glad people could recognize the suitability of that mask on me; it gave me more confidence in the on going game. For a while I missed that new face in the mirror, physically I could even perceive the difference in something missing on my neck and in my hand while adjusting my hair and for a while I could feel the absence of the weight of the missing hair on my head.

Braids affected my everyday gestures, and perception of comfort. They allowed me to meet different people because they could be a simple excuse for a chat or because they allow me to be part of community of other people sharing the same style or myth.

4.d.ii. **Iteration II**. Field research: observing people experiencing masks during carnival

> "Man is least himself when he talks in his own person.
> Give him a mask, and he will tell you the truth."
> **Oscar Wilde**

An innate characteristic of human beings is the desire to strive for differentiation. Fashion through the building of a personal style can be a means to identify clearly the many different roles that a person plays in any one day, like actors, individuals play many parts and each part has to be learnt. Roles are continually learned and rehearsed and relearned. They are also shared, because like the actors on a stage, fluid interaction only occurs if all the performers know the behavior expected.

How do we learn about each other's "role"?
Mainly we attach cultural connotations to it. They are transferred to others through allusions and references to models of style, shared myth and culture. The desire for differentiation passes through an adherence to a shared image of a myth and through a personal interpretation of it.

We perform our part through a mask.
Most of the time this mask is not hiding us but simply revealing an identity that wasn't active before that opportunity.

To explore a real mass phenomenon of will to play with the identity I decided to visit Venice Carnival and following the experience of a group of 8 students from Interaction Design Institute Ivrea, looking for their mask and willing to enter the magic atmosphere of the carnival.


## 4.d.ii.1. Excerpts from Venice Journal and from Francis Li's interview

From my Venice Journal:

"People, mainly tourists are extremely excited and even a cheap mask or a funny hat for 8 euro is enough to feel part of the moment.

Couples, group of teenagers, aged groups; all kinds of people are involved in the atmosphere. Old Ladies and Men even mask their dogs. Everything is worth to be done to be in the magic moment, to be captured in the ephemeral memory of a foreign photo camera."

Figure 16. Francis and Jason in costume

"Being here is not worth it without being part of the magic of the moment. What better than to look for THE MASK, for THE COSTUME, always dreamt and never found? Venice is a huge department store made out of little shops in which the big hunt for the Perfect One takes place. Trying on and retrying one can also discover alternative ways, easy or hard path to follow, finding a good one is always a challenge. I made my last step, began 3 month ago in Amsterdam, into the character of Titania when I worn a blue-flowered mask, everybody immediately agreed that was MY MASK and I could not disagree.
Francis has started his own hunt with great excitement and nobody would have believed the results. He turned out a finished Casanova with perfect modulated gestures and manners in his long black wool hood."



Figure 17. Jason and me at the Ivrea Carnival

"Today was the day of the complete transformation for Jason now he as also a scarlet hood, now he is a finish devil planning to land in Ivrea with his new charming look. Francesca feels like a warrior goddess with her new feather mask. A new Athena is looking for a proper sword or better a spear. Francis has tuned to perfection his movements. Now he can turn or run having the hood to gently match his figure, walking across Rialto Bridge. You can almost stare minutes in a joyful flow to his mantle moving with the rhythm of a silent minuet."

From my interview with Francis Li after Venice and Ivrea Carnival about his transformation:

"Was an excuse to be more expressive than normally I am".

"I had a very little understanding of the myth. I knew only that Casanova was the great lover, the seducer, and the aristocrat. For me it was more about the air of aristocracy, I felt he was projected on me."

"I was purposely exaggerating my movements."

"People accepted that I had taken on another role."

"…the costume was effective and I was playing the full part."

"It was more the costume affecting me. It provided almost an excuse, some sense of safety to put on the act."

"Part was being obscured behind a mask, and part being in a place were the context allowed me to do it. The costume was exactly what I was looking for, something I could fully control in the motion."

## 4.d.ii.2. Findings

Browsing around in Venice I could feel how the desire to BE someone else was something I could even breath and grasp in the eyes of people that were so hardly trying to MAKE ME BELIEVE that was possible.

The Carnival is just a big excuse for people who want to experience a latent transformation. Venice is the ideal stage because of the grandiosity of the event; the overall city can become easily a historical scene, a living theater in which the "fourth wall"[38] is constantly on because of the seriousness of the rituality that is in it.

No limit in the age for playing, the only rule is that it's a serious fun game, people are willing to spend money for a dream even if only for one day. People near you are able to judge when a transformation is suitable and unfolding a latent aspect of your personality.

I was glad I could watch a real transformation happening under my eyes and being aware of the process and of its unfolding through time. Francis, with great surprise of all of us turned out to be a believable "Casanova". It was a planned transformation, built through every detail to reach the desired result. A dramatic costume for an elegant performance, something that was hidden inside him until the moment in which the Carnival gave him the excuse for acting out.

Speaking with him I learnt how the costume was affecting his expressiveness, allowing more control and freedom and how the audience of friends, acknowledging the successful transformation, was giving even more strength to it.

He entered the character of "Casanova", knowing as much as needed to personalize his experience of it, to get an opportunity of expression and of play.

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[38] Traditionally the audience has had the role of sustaining the theatrical illusion by not participating or interrupting a play. There is what is usually defined, in the theory of media, an invisible "fourth wall", between public and stage, a border that should not be transgressed in order not to break the fiction.

4.d.iii. **Iteration III**. Experience modeling: heroines and goddess as pre-textual filter for getting stories about personal narratives

Considering what I saw in Venice and what I experienced on myself I started to think about the way in which wearables, allowing an empowerment, can become even more believable and magical masks, able to build the illusion of different identities.

I decided that I wanted to design wearable devices for women, out of the usual perspective of male design; my aim was to empathize with them and come up with desirable concepts able to trigger a psychological transformation for them.

Thinking about a desirable empowerment and of masks for my mind made the immediate connection to the world of myth, to goddesses and heroines, epic cultural manifestations of the "divine feminine".

Many times when we project our euphoria or our enthusiasm into a character in a movie, in a representation or in a book it is because we are able to see a hidden part of us playing freely within a known world, where all fears are known and all desired solutions are achievable.

I realized that this could have been a suitable entry door to get interesting stories from women, to know more about fantasies and hidden desire of empowerment, to meet the divine feminine that is in them and observe a possible desire to shift to another one, and to fit that want with new interactive wearables, enabling the needed performance to get to the new identity. To get these inspirations I put together 4 collages of popular heroines and goddesses to be used within an interview as starting point for a conversation. I created a draft for an interview and chose 5 different women to speak with.

## 4.d.iii.1. Interview Structure

The interviews had the character of private long conversations, lasting one hour on an average, following a loose scheme of open questions. Most of the time I was taking fast notes, trying to catch interesting key phrases, following lines of thoughts, summing up or skipping what was uninteresting or declared too personal to be mentioned. I explicitly avoided the use of a videocamera to record the interview to keep the tone intimate and personal, to give people the opportunity to open up without the scary presence of a third eye keeping track of everything.

This is the Interview Questions Draft:

1. Have you ever found yourself in the description of a character of a book?

2. A movie?

3. Have you ever dreamt about being a heroine? What's special about her?

4. Which kind of super power would you like to have? Why?

5. Has an object/dress ever made you feel different, special?

6. Did it evoke an atmosphere around you?

7. Was something about the material, the shape or the context around you?

8. Have you ever experienced a moment of flow? By doing what?

9. Have you ever had an experience of daydreaming?

## 4.d.iii.2. Interview inspirational quotes

From the interview I decided to pull out interesting pieces of phrases or sentences that suggested interesting elements for creating personas that evoked in me design space possibilities for wearables.

**From Meg Escobosa, strategy consultant, 32 years old, USA.**

"…the character was very strong, beautiful, above all empathetic, helping others solving problems, going through all these possible adventures and taught experiences being always steady, and despite all very natural and human."

"…she was so feminine, fun, beautiful, she had gracefulness, the power of being unpredictable, to surprise people, to have people asking themselves 'what's next?', to be out of control but in total control at the same time. "

"…The simple power of creating a mess around me and then simply avoid it climbing out of the window. She was not beholding, she was giving away with her own mood."

"I'd love to be able to suppress all the insecurities, just simply erase doubts, being able to control what people think about me"

"I would take Linda Hamilton in Terminator, because she's really taught, she wouldn't take any crap, she would intimidate intimidators, without hurting, they would give her respect. There is something about her, in her physical strength, she's feminine but strong, she has the presence, the power to say: Take me seriously 'cause I'm pissed!"

"…my engagement ring. I felt really self-confident, I knew it was an icon, that was a public declaration. "

"…a pair of shoes, a marvelous pair of orange shoes, they make the outfit, they are really cool, sexy, with pointy toe, high heels, very feminine, the material was almost similar to snakeskin, I didn't care about what they could say about it."

"I felt sexier, more knowing, confident and flighty. And people were responding to it. They were dramatic, sort of edgy.
Those shoes had the power to make me laugh, to remind me that things can be fun, frivolous."

"I would wear them for special occasions, a time in which I feel I need fun. I would use them sparingly."

"…Was fun for one day to be someone else, to be empowered being her, being sexy, confident, have people in the palm of my hand."

"…Sometimes I feel I can call her up for a while even if I'm not wearing that dress."

"Sometimes I can play with her recalling that experience wearing simply the earrings."

**From Line Ulrika Christiansen, 2nd year student at Interaction Design Institute Ivrea, 26 years old, Denmark.**

"… My heroine would be my own heroine, myself in a good moment, being able to do great things, driving an old jeep, dressing casually, a warrior style dress…. I'd love to have my own land, my house, the possibility to express myself

"…I'd stand, proud and strong, with intense eyes, a mental power supported by the body, by a proud posture."

"Physically would be manifested through a straightened back, shoulders down, long visible neck, the head proud, lifted but not to look superior, the arms along the body to express no fear and the face turned on one side towards the wind. I imagine also that I'd be able to detect sound more around me, even little bugs, that would make me so tuned into what's around me."

"…Swimming really can set me free, at the moment of starting and jumping into the water, feeling all the powerful energy of the jump lasting against the water"

"Running and dancing can give me this kind of a sensation but it is different because I'm aware of the people, I'm never quite free, it's constant, continuous, it's not a build up..."

"...Enjoying the quietness, looking at the meadows, watching the birds with my binoculars, following their flight, drawing laying in the grass watching a bumble bee..."

**From Michal Rinott, 1ˢᵗ year student at Interaction Design Institute Ivrea, 32 years old, Israel.**

"...she is a combination of fragility and strength, she has a lot of character and she is driven by emotion and passion."

"It's a lot about her face, the intensity of her gaze and eyes."

"I'd love to have the combination of expressing myself in a strong way and at the same time having a spiritual calm.

"The opportunity to make a performance, being physically intimate, connected with an audience; singing can definitely give you that sensation, that ability to create an emotional response, not from a manipulation."

"I'd love to have the ability to find the root, feeling other people's needs. And to cure them through touch. I'd love to know how to touch people with my fingers."

"...a gray silver dress, a very special one I bought following an impulse. I was in a shop, trying that dress and an artist friend of mine simply said that it was mine and that I should have had to buy it."

"...Sometimes I feel clumsy, it changes the way I move, it's not natural for me."

"It was actually part of a ritual I had with another person. It could change the perception and the connection I had with this other person. Was a way to feel the maximum potential of beauty through a ceremony."

"...I was laying on my bed in my room, looking at the ceiling, and all of a sudden a transformation took place, I started to see transitions, from butterflies to amazing strange patterns, only made out of movement and shapes. The day after I felt an enhanced consciousness, I could see every single leaf, was a real emotional turmoil."

**From Karmen Franinovic, 1ˢᵗ year student at Interaction Design Institute Ivrea, 25 years old, Croatia.**

"I identify with Milla Jovovich, the actress. I like her because she's able to change and going from one character to the other without losing her

spontaneity, her innocence. She can be many different types, without loosing her charm, her femininity."

"She can transform so easily, from one kind to the other, being indeterminate, androgen, someone that can transform herself because still a child, that can exploit her male side without imitating men. She's dynamic; the exact adversary of her would be Wonder Woman, too iconic and static in her femininity."

"…the symbol of discovery and exploration."

"If I were a heroine my super power would have been the possibility to stay alone for a long time. Maybe I'd love to have the power of invisibility or to be physically strong but without using my power, keep it as a potentiality only.
Now I only use my sight to intimidate people if I feel menaced but I don't like the fact that being a woman I'm always exposed and I cannot do whatever I want."

"…the pleasure of wearing an armoire, for experimenting the simple feeling of metal constraining my movement."

"Simply the fact that I wear high heels and a miniskirt can make me feel different. I like formal dresses, I like the elegance they create in my movements, and they make me feel more womanly when I want, I like the fact that they constrain somehow my body, that I can be the child and at the same time the woman in the same body."

"…a changing detail in my attention I can bring my attention in another space and time."

**From Kathrine Thie, artist, 30 years old, USA.**

"…The ability to stop and think before doing, before rushing, she gathers all patience and strength to focus on something. I feel more instinctive but I'm trying to be more thoughtful."

"…She's able to feel comfortable in being alone, without fear."

"…She is able to take a traumatic experience and transform it into something strong and positive. She wants to be loved without compromises. She's amazing in her nimbleness, falling down from a skyscraper she's able to flip backward and land perfectly safe on her feet. I love her costume; she beautifully made it by herself. It's the manifestation of her from being a broken victim turning into a powerful person. I love the fact that she uses sexuality as a power instead of a punishment."

## 4.d.iv. **Iteration IV**. Concept generation through personas and scenarios

After finishing the interviews I pulled out all the interesting personal narratives, dreams and desires that could represent a need of empowerment. Keeping them as a starting point I generated 30 ideas on little post-its, and then focused on three that were more likely to be the more interesting ones.

I created three personas Milla, Lizzy, and Lorie to represent the potential, ideal users of the "Reverie Engines", isolating very distinctive aspects of the character of my interviewees, building on their psychological stories (and need) around three, slightly modified, sentences I extrapolated from the interviews.[39]

To generate a context around them I then wrote four scenarios to envision the possible usage of the devices I came up with.

Along all this process I was going through some books about radical high fashion, street fashion in Japan and new high tech fabrics to look for inspirational shapes and interesting material to work with.

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[39] See the personas and the relative scenarios in the sections dedicated to the explanations of the concepts.
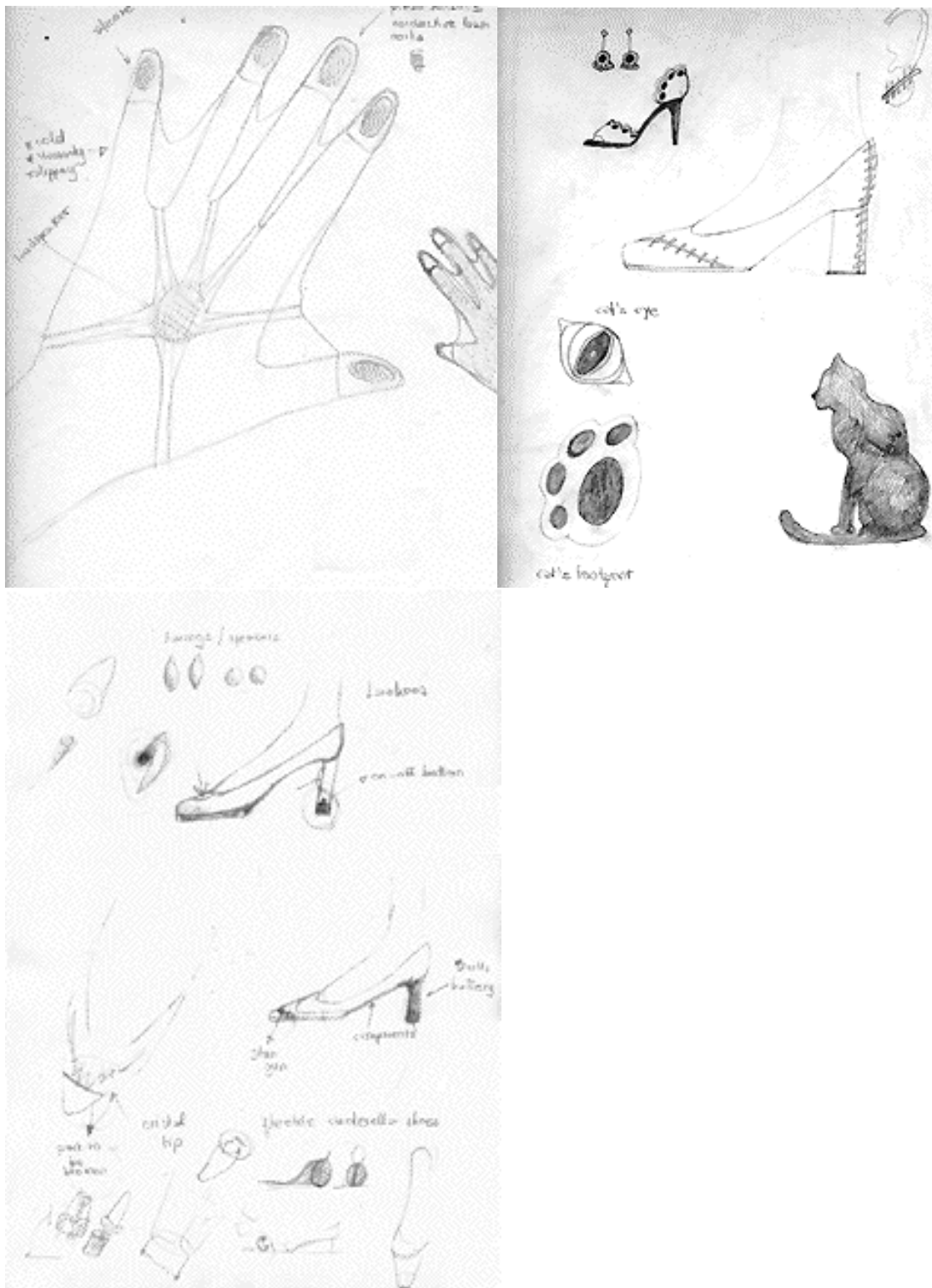
# 4.d.iv.1. Sketches



*Figure 18. Sketches for the glove and the shoes*

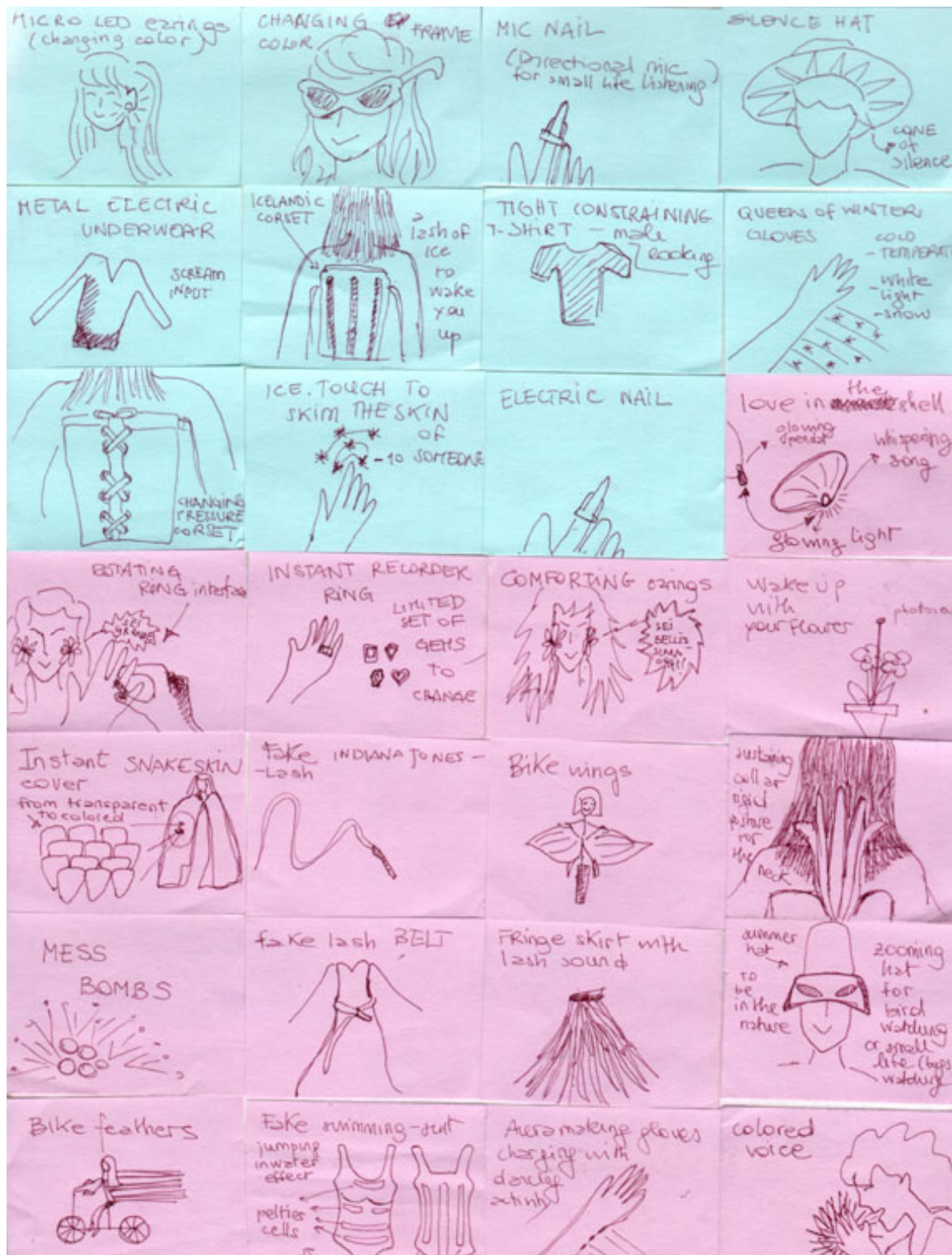Figure 19. Post-it notes with sketches

## 4.d.iv.2. Prototypes

**The Beauty and the Beast**

Process: the main problem with this prototype has been learning how to use the ISD 2569 integrated sound chip. The sound card I built (kit n. LX1542 from Nuova Elettronica) has a microphone as input device so the quality of the recorded sound wasn't satisfactory. I had to replace it with a direct input jack and connect it directly to the line out of the computer through a cable. The sound recorded can be accessed through different modes. The M0 mode described in the technical documentation is not working, as it should, so I opted for the M4 combined with the M6 (push button mode and message cueing). I recorded the sound of Catwoman's whiplash from the movie "Batman Return" and transferred it to the sound chip. Then I moved it to a board and connect it to the Basic X24 microcontroller. To get the stamp of the heel I placed under it an FSR sensor that I connect to the Basic X24. To get the right volume from the sound chip I connected an amplifier whose potentiometer I replaced with a fix resistor (the components where part of another kit, n.LX 1307, from Nuova Elettronica). Then I wrote a code to get only the very high peaks coming from the FSR.

Components: 1 FSR sensor, a BasicX24 micro controller, an ISD 2569 integrated sound chip, a TDA 7056 B chip, an 8 ohms loudspeaker, two 9 volts battery, two power regulators, capacitors, resistors.
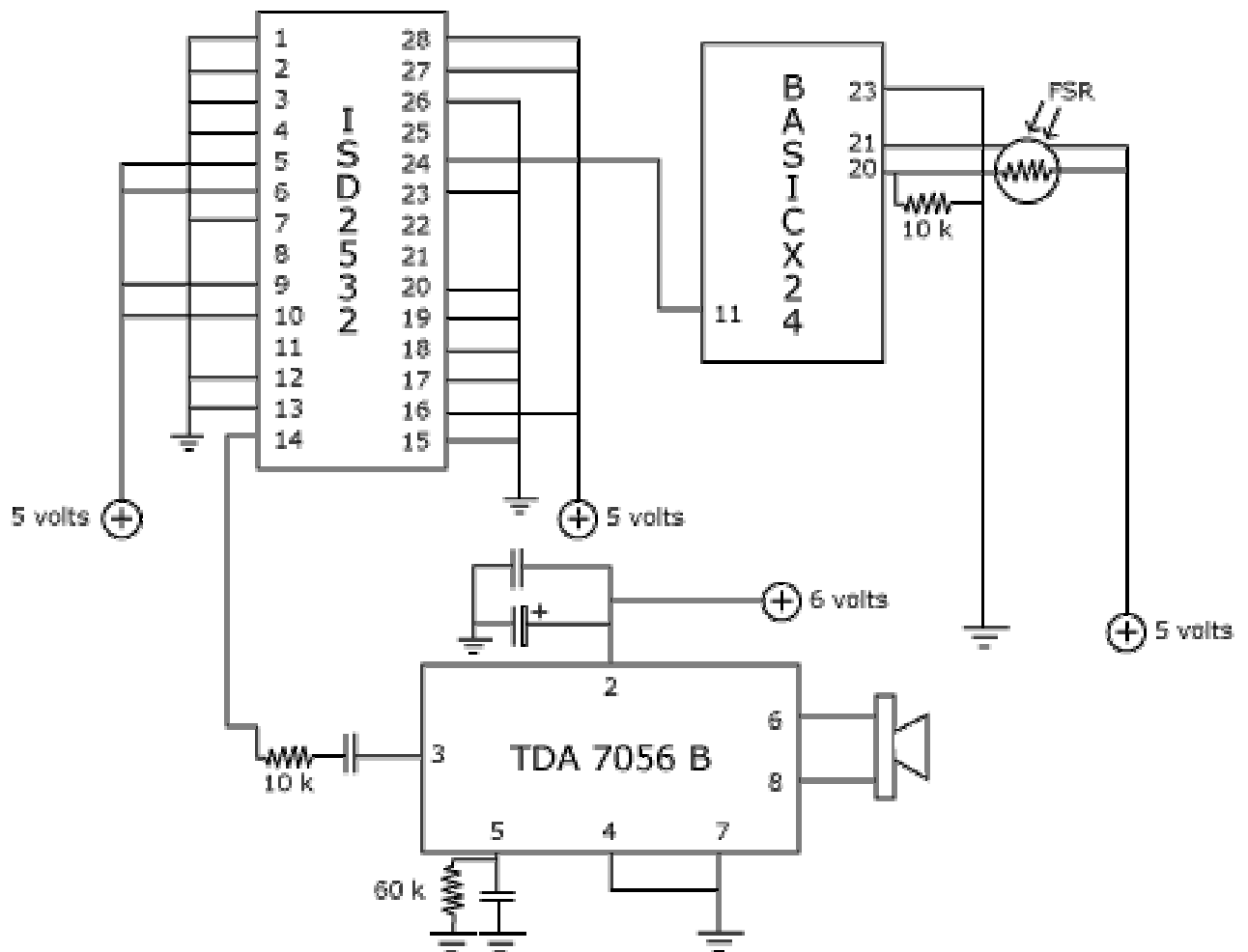
Circuit diagram:



*Figure 20. Circuit diagram for The Beauty and the Beast*

Code:

```
Option Explicit

Public Sub Main()

 call putpin(11,1) 'reset

 call putpin(26,0)
 call putpin(25,1)

 dim peak  as Integer

 do
```

```
        peak = GetSensor()
    Debug.Print CStr(peak)
  if (peak > 1000) then

            call putpin(11,1) 'reset
            call putpin(11,0) 'play from begging
            call delay (1.8)
            call putpin(11,1) 'stop


    end if
  loop


end sub

Public Function GetSensor() as integer

  dim x as Integer
  dim max as Integer
  dim min as Integer
  max = 0
  min = 1024


  do
    x = getADC (20)
    if x < min then
      min = x
    end if
  loop while x <= min

  do
    x = getADC (20)
    if x > max then
      max = x
    end if
  loop while x > (max - 500)

  GetSensor = max

end function
```

## A Touch of a Siren

Process: the glove for this prototype has been built from scratch. I went through many iterations to define the final shape of the webbed fingers. I started from a cardboard model of my hand, I went on designing the webbed space, and then I tried out different materials. I wanted a fabric that could suggest the scaly appearance of a fish and at the same time

giving the impression of a second skin. Here are some of the different prototypes for the shape I made.
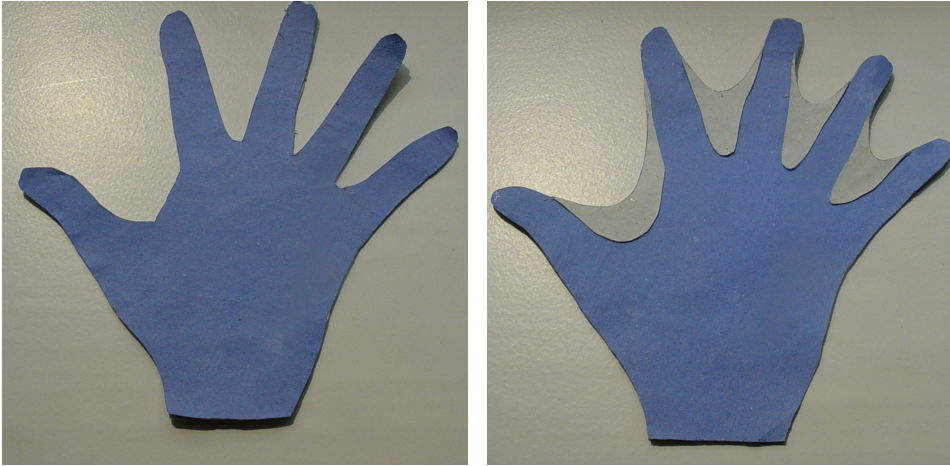


*Figure 21. Cardboard models of my hand*



*Figure 22. Material explorations*

*Figure 23. First completed model of the glove*



*Figure 24. Final completed model of the glove*

Regarding the electronics, the circuit is very similar to the one of "The Beauty and the Beast". There are few differences: the selected mode is M3 (looping) and I kept the potentiometer to simulate the fade in and out of the volume.

Components: 1 FSR sensor, a BasicX24 micro controller, an ISD 2569 integrated sound chip, a TDA 7056 B chip, an 8 ohms loudspeaker, two 9 volts battery, two power regulators, capacitors, resistors.
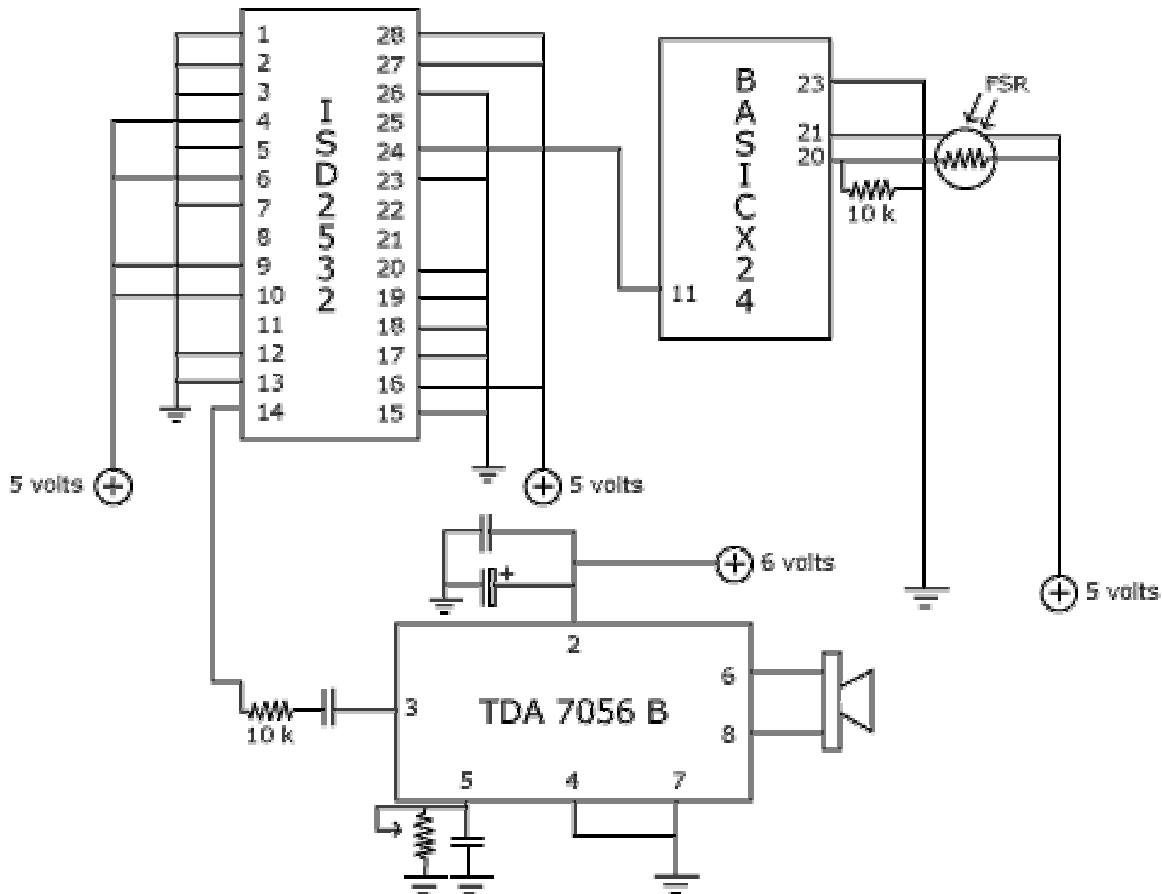
Circuit diagram:



Figure 25. Circuit diagram for A Touch of a Siren

Code:

Option Explicit

Public Sub Main()

dim peak  as Integer

  do

```
      peak = GetSensor()
    Debug.Print CStr(peak)
   if (peak > 1) then
              do while (peak > 1)
              call putpin(11,0) 'play from begging
              peak = GetSensor()
              loop

  call putpin(11,1) 'stop


    end if
  loop


end sub

Public Function GetSensor() as integer

  dim x as Integer
  dim max as Integer
  dim min as Integer
  max = 0
  min = 1024


  do
   x = getADC (20)
   if x < min then
     min = x
   end if
loop while x <= min

  do
   x = getADC (20)
   if x > max then
     max = x
   end if
  loop while x > max

  GetSensor = max

end function
```

**Electric Cinderella**

The final prototype is a Plexiglas shoe. To fit the stun gun inside the heel and make the shocking electric spark immediately available I had to open the gun, extend the front wires (the ones bringing the current to the two

stunning beaks) and connect the wires depending on the stunning button, keeping only the ON/OFF one working.

In this way I could fit the front wires along the sole of the shoe having the two stunning beaks to emerge in the toe of the shoe.





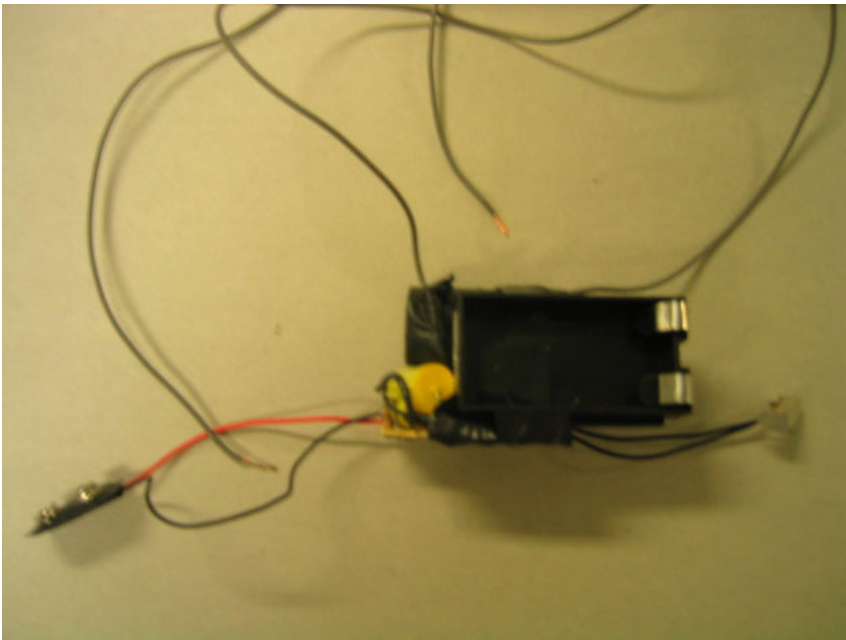*Figure 26. Disassembled Stun Gun Master*

Components: modified Stun Gun Master 100,000 volts

4.d.v. **Iteration V**. Testing the acceptance of the concept

To really test the effectiveness of my prototypes, in giving psychological empowerment to the wearer, I'd need them to be at a different stage of development, refined as end products, as in them the element of the

representation is crucial. Like existing masks, they would need to clearly (through their appearance and interaction) be able to evoke a new role for the wearer in an existing context and consequently call for a possibility of a transformation through the interaction.

As their development has not reached the necessary stage of refinement, I decided to test instead the possible acceptance of the concept by users, looking for feedback on the suitability of the objects within defined scenarios.

To communicate the value of the "Reverie Engines" in a proper way, I had somehow to preserve the quality of evocation of the objects through a narrative and a medium that could easily address the fantasy around an existing desire or psychological need. Above all, the chosen medium, had to show as possible and natural the consequence of the usage of the "Reverie Engines", the magical and invisible transformation in the wearer.

The focus of this testing was to collect qualitative data through an interview showing the drawn scenarios I created as the basis for a conversation.
The criteria to choose the interviewees were the following:

- Women between 25 and 35 as the personas I created
- English speakers as the scenarios are drawn in English
- Not only member of the design community

I decided to go back also to some of the women who helped me in generating the concepts to check with them the possible validity of the concepts.

The interviewees[40] were:

Meg Escobosa, strategy consultant, 32 years old, USA.
Karmen Franinovic, 1st year student at Interaction Design Institute Ivrea, 25 years old, Croatia.
Michal Rinott, 1st year student at Interaction Design Institute Ivrea, 32 years old, Israel.

Cinzia Ramella, university student, 25 years old, Italy.
Francesca Strobbia, university student, 25 years old, Italy.
Livia Chiesi, assistant of the Director of Interaction Design Institute Ivrea, 25 years old, Italy.
Claudia Lizier, academic administrator at Interaction Design Institute Ivrea, 32 years old, Italy.
Holly Coleman, project manager at Interaction Design Institute Ivrea, 32 years old, USA.

The interview question draft was the following;

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[40] The complete interviews will be available on the thesis website as mp3 files.

What is the story you feel closest to?
[If answer is "None", then ask why and what you would change]
What would be different if it were your story?
Is there something you'd like to modify? Why?

## 4.d.v.1. Excerpts from User Acceptance Interviews

About "The Beauty and the Beast"

[Claudia]
[about the private sound] I don't think that kind of sound would be effective for me. I'd rather prefer music that I like, because it could give me good energy.
The sound should always be private otherwise I'd be embarrassed.

[Cinzia]
[about the sound] This sound gives me really the feeling of "Listen to me!". It's powerful. It's like a liberation, I feel I would have used it in many occasion when frustrated. It should be a surprise; people don't have to see a clue of what can happen, they shouldn't expect it from me. I think that for a private sound a shout would be as much effective, because that's what I generally do in my private space if I'm angry.

[Francesca]
[about the sound] A scream could be another suitable sound, closer to my personality, something that I really need from time to time. For the private sound I'd prefer music. The appearance must not suggest the sound. Surprise is definitely relevant.

[Meg]
I definitely can see myself wearing them and using them when I'm frustrated. No question it would help me to really tell what I think!

About "Electric Cinderella"

[Claudia]
I'm not sure that wearing this kind of shoes would be enough to defend myself, it would be only a psychological effect on me but not so useful in case of aggression.

[Cinzia]
The only problem is that if you use them you have to buy another pair.

[Livia]
I'd prefer another kind of shoes, that's not the style that I normally wear. Something more comfortable that can hide the spark and that people can't see.

[Holly]
Why putting a stun gun in a shoe people don't use them. I'm concern about recycling so I don't want to throw away things, they should be reusable.

[Karmen]
It could be a very strong signal! Better than a knife because you wear it. Showing or not showing the electric spark is really crucial in the communication of you, I always try to avoid conflicts so I'd turn it on only if needed.


About "A touch of a Siren"

[Claudia]
I think the choice of the material is really crucial. It should be something very comfortable like a second skin.


## 4.d.v.2. Findings

After the first interview with Claudia Lizier I understood the possible difficulty in understanding the scenario I presented without giving the frame of interpretation of the persona, of her life and needs. So from that interview on, I decided to introduce more clearly the character of the protagonist of the scenario, explaining her profession and briefly her character. To my surprise even without identification in the character presented them, the interviewees were able to recognize as real the psychological need behind the persona and her motivation in using the device.

The personas that presented more clear possibilities for identification, regarding the psychological needs they represented, were Milla and Lizzy.

Concerning Milla, the stun gun shoes she wears are hardly considered only as a sign of intimidation by some women. The aspect of the practical functionality of the gun calls for them, for an opportunity of an actual multiple usage and not for an emergency weapon to be used once. Considering the aspect of functionality the main one, not focusing on the idea of intimidation, but on the one of surprise in an aggression, some women suggested that the electric spark should be hidden. They also wished for a different style of shoes, not only an elegant one but also more comfortable to be worn in everyday life.

Regarding Lizzy's shoes the sound of the whiplash resulted for most of the women appropriated for a public expression of rage and for a dramatic request of attention. The aspect of the surprise was considered crucial so that the normal appearance of the shoes was considered a

must. Some of them liked the idea of the private sound as a comfort device in problematic moments but mostly preferred the idea of having music instead of a single sound.

About Lorie's gloves the aspect of the material and of the comfort for the wearer were the key elements of interest.

# 5. Analysis

> *Technology is a versatile tool for opening up possibilities.*
> *But it is always human interaction that creates meaning.*
> *Despina Papadoupolus and Ion Constas*

In beginning this thesis my research question was about looking for way in which we can design interactive products able to be personalized and tailored to our imagination. I found my answer in the concept of "interactive masks", here exemplified through "Reverie Engines" and Flying Cape.

The kind of liminal experience they can generate is **very similar to acting an improvisation on a stage** with a given object, able to evoke a speech and an enactment around itself. Or could be very similar to the experience we have made in our childhood when we played "make believe", when weaving twigs and lashing them in the air we were pretending to be knights at King Arthur's court. In the same way here the wearer is able to play her own interpretation through the device she wears, she is able to get into it with her own subjectivity, with her own personal narrative.

I somehow took a literal interpretation of Laurel's invitation to use playful instincts and cultural conventions of film and narrative as the basis in the design of interactive systems.

"Reverie Engines" combined with the appropriate wearer are computer-based agents, dramatic characters that "provide a representation from which thought can be inferred"[41]. Choices and actions provided through these "characters" enable the audience to supply the inferencing engine which drives the "plot" of the performance.

The kind of experience they provide is different from the one created by "virtual reality" because while providing sensory immersion they lack of other two elements: remote presence and tele-operation. The world around is "real" and affected by the computer-mediated action of the wearer.

**"Reverie Engines" provide mediated improvisation in the real world.** The designer writes only the story or better the "fabula", the subject that **is then enacted through a "plot" that is always different due to the context and to the personal narrative of the wearer**.[42]

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[41] Laurel, *Computers as a Theatre*, 57.

[42] A good metaphor to understand this process is really the one of "subject for movies": from the same "fabula" of Cinderella we can write a Disney tale or "Pretty Woman".

## 5.a. The goddess and the heroine in place of the cyborg

In designing "Reverie Engines" I wanted to give a different gender view on how to interpret empowerment through wearable technology, placing myself far from the new "cyborg" myth created at MIThrill group or by Steve Mann.

I agree with Haraway that the cyborg can be the metaphor of the constructed reality we must comprehend but I don't wish for a cyborg that could erase the dichotomy between female and masculine. The cyborg is really a figure of fiction but it can also be the playful starting point for new unexpected fictions in which humans, with their gender diversity in desires and wishes, can project themselves.

Against the idea of a hybrid, I wanted to draw inspirations more from epic than from sci-fi, to regain the human, the hero, the god and not the machine behind the need for an empowerment.

I specifically wanted to play around the idea of wearables as masks to empower women because I saw more room to play in the already established relation between women's fashion and the expression of sex and power.

At the end I feel that my take on the problem of designing for wearable technology is closer to what Despina Papadopolus and Ion Constas has defined 'social functionality' of personal technology. I agree with their view of wearables as a means of personal expression and I think I worked in the same direction looking for open-ended functions for this kind of technology.

## 5.b. The language of Reverie Engines

Communication in Reverie Engines works mainly through symbols, visual clues, non-verbal sounds, and actions. They express to the audience the process leading the character choice and actions, and they should be evaluated for their effectiveness in their expression of thought and appropriateness to the character.[43]

My testing demonstrates that this masks need adherence to work properly, they must embody a personality you're already looking for. An aspect that is waiting to emerge through this new means.

Society is the **invisible big stage** where we play our own narrative, as actors we shape **our own plot** within the determined constraints of a collective action. Within this established context of social **narrative,**

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[43] For the relation between "thought" and "language" see Laurel, *Computers as a Theatre*, 57.

playful applications of digital technology, as Reverie Engines, can bring new interactive masks that can enable transformations and the acting out of new roles.

The language "Reverie Engines" are speaking is the one of modern interactive masks that through the mimesis of (pop)cultural myth, can lead to a transformation, to a new personification in a wearer willing to act out her fantasies.

Placing a crystal toe on a pair of elegant shoes in "Electric Cinderella" is an open resonance of Cinderella's tale, a specific recalling of the possible world and "story" contained in it; a reference that enriches the possible personification of the wearer in the mind of onlookers, able to get the clue, that can also get the ironic negation of the expectations in the non diegetic element of the stun gun. The crystal fragile toe evoke Cinderella, the stun gun inside it denies that myth bringing up a new heroine, Barbarella, queen of discovery. The inner contradiction gives to the object a subtle elegant balance of interpretation. The wearer can daydream about being fragile and powerful at the same time.

"The beauty and the beast" plays with a subtler and less obvious reference contained in the shape of a pair of earrings combined with the sound coming out of the shoes. Here the transformation takes place through the non-diegetic element of the whiplash sound coming out of the shoes. This sound is unexpected in relation to the appearance of the wearer (a delicate and fragile woman) and the normality of the context. The sound of the whiplash is a very rich means of evocation spanning from the fetish fantasies to heroic ones. With its dramatic power it can evoke different meaning from authority to expression of rage. Played in public it can represent a strong catharsis for the wearer.

"A Touch of a Siren" uses sound as a non-diegetic element coming out of the gloves as a trigger for a new sensuality for the wearer. The reference to the myth of this dangerous and sensual creature is just in the appearance of the gloves: webbed cold blue hands, like fins, recall a marine creature, a mixture between a bird and a fish. It's the mesmerizing sound of the high echoing voice of a woman that close the circle of the references pointing to the siren as a possible personification for the wearer.

# 6. Conclusions

The process I went through was a learning experience that led me to a different awareness about the communicative potential of an interactive object. This project taught me a way to design objects as interactive "fragments", able to call for a playful completion in the performance user.

What I achieved in my understanding can lead me, and I hope can drive others, into new ideas for new wearables. In fact as I demonstrated with this project the characteristics of modern technologies (invisibility, **effect on the context**, change in state) can enable the arousal of a new participatory immersive medium that can satisfy the age-old desire to live out fantasies more completely than has ever before been possible.

This issue is particularly true with wearable devices with which the fictional aura created by the technology around us depend so intimately on our body, our movements, and that implies such a personal involvement and active participation.

With "Reverie Engines", I took my first, and I hope not the last, step into a new genre of interactive narrative, a personal one that enables us to act out our fantasies in a specific location and time in the real world.

> *"More human than human" is our motto.*
> *Mr. Tyrell*

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# 8. Appendix – Full documents

This section contains all the full documents and materials collected during the iterations I went through.

Following the full texts of Venice Journal, kept between the 21st February and the 23rd February 2003, and the interview with Francis Li after Ivrea Carnival, part of the field research I carried out.

**8.a. Venice Journal**

21st February 2003

Marvelous first day in Venice, it's an incredible sunny bright day; the early waking up was worth the amazing landscape we enjoyed through out the day.
The apartments are near Rialto Bridge in one of the most beautiful district ☺. We have a complete kitchen with an oven and a kitchen table! Kind of daydream for all of us we were simply staring in silent adoration our new table full of grocery in our new kitchen.

Browsing around we couldn't help curiosity about masks shops, we found a very rich one and we are looking forward tomorrow carnival-shopping day. Venice is warming up for the big Historical Parade for tomorrow. "Casanova" was walking around today in the Piazza glancing at his audience for tomorrow. People, mainly tourists are extremely excited and even a cheap mask or a funny hat for 8 euro is enough to feel to be part of the moment.

Couples, group of teenagers, aged groups; all kind of people is involved in the atmosphere. Old Lady and Man even mask their dogs. Everything is worth to be done to be in the magic moment, to be captured in the ephemeral memory of a foreign photo camera.

22nd February 2003

Shopping time in Venice. Being here is not worth without being part of the magic of the moment. What better than look for THE MASK, for THE COSTUME, always dreamt and never found? Venice is huge department store made out of little shops in which the big hunt for the Perfect One takes place. Trying on and retrying one can also discover alternative ways, easy or hard path to follow, finding a good one is always a challenge. I made my last step, began 3 month ago in Amsterdam, into the character of Titania when I worn a blueflowered mask, everybody immediately agreed that was MY MASK and I could not disagree.
Francis has started his own hunt with great excitement and nobody would have believed the results. He turned out a finish Casanova with perfect modulated gestures and manners in his long black wool hood.

Looking at him from far behind in the narrow calle, in the night, is like watching at the window of the Time Machine, he is so much into it that hardly is part of our group, we all walk with reverence behind him also scared by his beam of judgment ☺

23rd February 2003

Early sleeping time for a long day spent in the Piazza. We enjoy every single ray of sun sitting at a table of Caffe Lavena sipping incredible mélange of coffee and chocolate. Today was the day of the complete transformation for Jason now he as also a scarlet hood, now he is a finish devil planning to land in Ivrea with his new charming look. Francesca feels like a warrior goddess with her new feather mask. A new Athena is looking for a proper sword or better a spear. Francis has tuned to perfection his movements. Now he can turn or run having the hood to gently match his figure, walking across Rialto Bridge. You can almost stare minutes in a joyful flow to his mantle moving at the rhythm of a silent minuet.
The Piazza was so full that was impossible to move from one extreme to the other in the moment of the inauguration at noon. The marvelous parade of costume took place at 17.00 pm. Amazing costumes worn by people of every age, historical mainly but also creative, like being one the 4 elements, or becoming an overall fan, or strange historical cyborg. It's time to go home but everybody is looking forward the Ivrea Carnival, Venice was only the enchanting starting point, Ivrea is going to be the refinement moment...

## 8.b. Interview with Francis Li

2nd year student at Interaction Design Institute Ivrea，25 years old，USA．

### 1. Why you did you choose that cape?

Because for me was very evocative about a different time. Was not about wearing something extravagant but something that may have been common during that period. It's also something very dramatic

Was a romanticize view of the intellectual. Being in the Salon, were there was a stimulating conversation. I reference imagery like the one of snowy streets in Vienna from the movie Amadeus, and other costume movie of that period.

### 2. Why you'd choose something very dramatic?

To be expressive in a way. Was an excuse to be more expressive than normally I am

3. What was your knowledge about the myth of Casanova? And why that myth?

I had a very little understanding of the myth. I knew only that Casanova was the great lover, the seducer, the aristocrat. For me was more about the air of aristocracy, I felt he was projected on me, as .

4. What you felt different wearing the cape?

I was purposely exaggerating my movements. Remember Jason defining me flouncy. Every time I was turning a corner I was turning with a melodramatic movement of the cape.

5. How you think we were looking at you?

I think everyone was a little bit surprised. There was a bit of awe and amusement. People accepted that I had taken on another role.

5.1. Why we did it?

Because the costume was effective and I was playing the full part.

5.2. Was the costume affecting you or you affecting the costume?

It was more the costume affecting me. It provided almost an excuse, some sense of safety to put on the act.

5.2. What made you safe and comfortable?

Part was being obscured behind a mask, and part being in a place were the context allowed me to do it. The costume was exactly what I was looking for, something I could fully control in the motion.

## 8.c. Interview with Meg Escobosa
strategy consultant, 32 years old, USA.

1. Have you ever find yourself into the description of a character of a book?

Not totally. Maybe in Wally Lamb book, about teenagers but mostly because I partially saw my experiences there. Lately I prefer more man character, they are funnier.

2. A movie?

Out of Africa, because the character was very strong, beautiful, above all empathetic, helping others solving problems, going through all these

possible adventures and taught experiences being always steady, and despite all very natural and human.

### 2.1 What about her attitude? Her behavior?

She was always smiling, with open arms, leaning towards people, listening

### 6. Have you ever dreamt about being a heroine? What's special about her?

Audrey Hepburn in Sabrina, or better in Breakfast at Tiffany's, she was so feminine, fun, beautiful, she had gracefulness, the power of being unpredictable, to surprise people, to have people asking themselves 'what's next?', to be out of control but in total control at the same time. The simple power of creating a mess around me and then simply avoid it climbing out of the window. She was not beholding, she was giving away with her own mood.

### 7. Which kind of super power would you like to have? Why?

I'd love to be able to suppress all the insecurities, just simply erase doubts, being able to control what people think about me

### 7.1 Do you have any trick you use with yourself when you feel in that way?

I train myself mentally to remind myself about my skill and what I can do or I rather go and find something to enjoy myself with, or I simply eat some chocolate, take a hot bath, go for a massage, or out of town to have fun.

### 7.2 If you could wear one of these heroines as a mask for one day which one you would choose? (I was showing some photos)

I would take Linda Hamilton in Terminator, because she's really taught, she wouldn't take any crap, she would intimidate intimidators, without hurting, they would give her respect. There something about her, in her physical strength, she's feminine but strong, she has the presence, the power to say: Take me seriously cause I'm pissed!

### 8. Have an object/dress ever made you feel different? Special?

Yes, my engaging ring. I felt really self-confident, I knew it was an icon, that was a public declaration. People felt engaged with me, they felt the opportunity to take my hand look at it giving me advices, speaking to me very directly. I was proud, thrilled.

### 9. Did it evoke an atmosphere around you?

I felt that people responded to it, to that symbol, they felt free to partake, to support me, sometimes it was even overwhelming.

### 9.1 What about a dress or something you were wearing?

Oh, a pair of shoes, a marvelous pair of orange shoes, they make the outfit, they are really cool, sexy, with pointy toe, high heels, very feminine, the material was almost similar to snakeskin, I didn't care about what they could say about it.

### 9.2 Did it evoke an atmosphere around you?

I felt sexier, more knowing, confident and flighty. And people were responding to it. They were dramatic, sort of edgy.
Those shoes had the power of make me laugh, to remind me that things can be fun, frivolous.

### 9.3 How would you use them?

I would wear them for special occasion, a time in witch I feel I need fun. I would use them spearing.

### 10. Have you ever experienced a moment of flow? By doing what?

Yes, training for a bike ride, I felt healthy and excited, great about my body and my effort.

### 11. Have you ever had an experience of daydream?

I once dressed for Halloween as Liz Taylor. Was fun for one day to be someone else, to be empowered being her, being sexy, confident, had people in the palm of my hand.

### 11.1 What was different in you?

My posture, my gestures. Sometimes I feel I can call her up for a while even if I'm not wearing that dress.

### 11.2 How was it?

Was a vintage dress, late '50 style, I also worked a lot for the make up, I drew a spot above my lips, I had a heavy black eye-liner line on my eye-lid, mascara on my lashes, full hair with lots of curls, chimery eye-shadow, gold ball earrings.
Sometimes I can play with her recalling that experience wearing simply the earrings.

## 8.d. Interview with Line Ulrika Christiansen

> 2. Have you ever find yourself into the description of a character of a book?

Fanny, by Erica Jong. A lost girl that get seduced by an old nasty poet, that then become a prostitute, and then again a pirat. She goes through these mysterious adventures, without knowing that somehow they make sense for her even if she couldn't have told it before starting them. She is strong, I imagine her with long red hair, tall with very long legs, very proud. She stands with her back straight, but she will always look relaxed.

> 2. A movie?

Francis with Jessica Lange. It's a story about a famous actress caught into her career without wanting it, trapped by her mother in the game of fame even against her willing to go away and live a normal life with her loved one. She got even operated to be deprived of her willing. It's a sad story, but I like her so much she's full of passion and temper, even if she got broken up, they had to literally cut her willing in her body to break her. She is simply full of life and that's why in the movie she capture the attention of everybody.

> 8. Have you ever dreamt about being a heroine? What's special about her?

Yeh. My heroine would be my own heroine, myself in a good moment, being able to do great things, driving an old jeep, dressing casually, a warrior style dress. I'd like to feel energetic, focused, because secure about my work, independent but with a man looking at me. I'd love to have my own land, my house, the possibility to express myself.

> 9. Which kind of super power would you like to have? Why?

I imagine that if I'd be attacked by someone I'll be strong without fear, I'd stand, proud and strong, with intense eyes, a mental power supported by the body, by a proud posture. I could really protect to death people I don't even know.

> 9.1 What would be the external manifestation of this power?

Physically would be manifested through a straighten, shoulders down, long visible neck, the head proud, lifted but not to look superior, the arms along the body to express no fear and the face turned on one side towards the wind. I imagine also that I'd be able to detect sound more around me, even little bugs, that would make me so tuned into what's around me.

>>> 9.2 If you could wear one of these heroines as a mask for one day which one you would choose? (I was showing some photos)

I would be a pirate; free to go wherever the sea brings me, strong and proud, in lead, with a great sword and with a community to support me anyway, anywhere.

>>> 8. Have an object/dress ever made you feel different? Special?

Yes, a bikini with a sarong. I can imagine myself walking along the shore; barefoot with my high heels sandals in my hands. That would make me feel very relaxed, exotic and difficult.

>>> 9. Did it evoke an atmosphere around you?

I would almost reach the feeling of taking off, dreamy, leaning in the wind, showing determination, forgetting about what's around me. People enchanted by the mystery of the vision would probably start wondering about me: who's that woman?

>>> 10. Have you ever experienced a moment of flow? By doing what?

I have in mind 3 images.
a. Me walking with my old dog in a beautiful day, feeling the need of running down the hill.
b. Riding a horse with nobody around me, galloping out over the fields
c. Swimming really can set me free, at the moment of starting and jumping into the water, feeling all the powerful energy of the jump lasting against the water

Running and dancing can give me a kind of this sensation but they are different because I'm aware of the people, I'm never quite free, it's constant, continuous, it's not a build up...

>>> 11. Have you ever had an experience of daydream?

I don't know if it's daydreaming, but it very much depend on the weather, when I get up early and enjoy the morning at the window, before everything starts, enjoying the quietness, looking at the meadows, watching the birds with my binoculus, following their flight, drawing laying in the grass watching a bumble bee...

## 8.e. Interview with Michal Rinott

**1ˢᵗ year student at Interaction Design Institute Ivrea, 32 years old, Israel.**

>>> 3. Have you ever find yourself into the description of a character of a book?

Yeh, I'm sure but I don't remember.

### 2. A movie?

Jodie Foster in New Hampshire Hotel, she is a combination of fragility and strength, she has a lot of character and she driven by emotion and passion.

### 2.1 What about her attitude? Her behavior?

It's a lot about her face, the intensity of her gaze and eyes.

### 10.     Have you ever dreamt about being a heroine? What's special about her?

I had my dreaming phase at high school; I was totally crazy for an Israeli singer. I dreamt about being her. She was beautiful and unconventional, she had lot of integrity, and she was displaying her passion in her art without needing to show off. Once I remember I had the chance to go to a private party in which I had the chance to see her. She was simply real, self contained, not flamboyant; she had confidence and didn't need to affirm herself. I admired her inner spirituality, her balance.

### 11.     Which kind of super power would you like to have? Why?

I'd love to have the combination of expressing myself in a strong way and at the same time having a spiritual calm. The opportunity to make a performance, being physically intimate connection with an audience, singing can definitely give you that sensation, that ability to create an emotional response, not from a manipulation.

### 11.1   If you could wear one of these heroines as a mask for one day which one you would choose? (I was showing some photos)

I would choose something completely different from me, to feel soft and smooth, someone very fragile and enigmatic, inaccessible. Giving the chance to be a goddess I would seek to be loved, always on the border, between a strong need and the panic need to runaway. I'd love to have the ability to find the root, feeling other people need.  And to cure it through touch. I'd love to know how to touch people with my finger.

### 8. Have an object/dress ever made you feel different? Special?

Yes, a gray silver dress, a very special one I bought following an impulse. I was in a shop, trying that dress and an artist friend of mine simply said that it was mine and that I should have had to buy it. So I did it without considering a little detail that alter the perfection of it. I wore it only 3 times. It's very elegant smooth, but somehow uncomfortable, 'cause

dressing up it's simply not me. Sometimes I feel clumsy, it change the way I move, it's not natural for me.

### 9. Did it evoke an atmosphere around you?

It was actually part of a ritual I had with another person. It could change the perception and the connection I had with this other person. Was a way to feel the maximum potential of beauty through a ceremony.

### 10. Have you ever experienced a moment of flow? By doing what?

I once had an unusual experience in which I felt very alive and awake. It was in a secluded place in Costa Rica, I was alone there for a few days after a fight I had with another person. In the background an amazing sound of frog, I was laying on my bed in my room, looking at the ceiling, and all of a sudden a transformation took place, I started to see transitions, from butterflies to amazing strange patterns, only made out of movement and shapes. The day after I felt an enhanced consciousness, I could see every single leaf, was a real emotional turmoil.

### 11. Have you ever had an experience of daydream?

I only sometimes can do it before falling asleep or before waking up. It's not something I can control, it's not properly daydreaming.

## 8.f. Interview with Karmen Franinovic

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1st year student at Interaction Design Institute Ivrea,
25 years old, Croatia.
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### 1. Have you ever find yourself into the description of a character of a book?

No, I no more read book, it's 7 years now, I prefer to use my time to live and and to use my energy to change constantly, life is enough under many point of view.

### 2. A movie?

More than in a movie I identify with Milla Jovovich, the actress. I like her because she's able to change and going from one character to the other without losing her spontaneity her innocence. She can be many different types, without loosing her charm, her femininity. Probably she's a little bit schizophrenic, but if so I would feel quite comfortable being like that.

### 2.1 What about her attitude? Her behavior?

She can transform so easily, from one kind to the other, being indeterminate, androgen, someone that can transform herself because still a child, that can exploit her male side without imitating men. She's dynamic, the exact contrary of her would be Wonder Woman, too iconic and static in her femininity.

2. Have you ever dreamt about being a heroine? What's special about her?

I never identified myself with a comic strip heroine. My favorite when I was a child was Indiana Jones because he was the symbol of discovery and exploration.

3. Which kind of super power would you like to have? Why?

If I were and heroine my super power would have been the possibility to stay alone for a long time. Maybe I'd love to have the power of invisibility or to be physically strong but without using my power, keep it as a potentiality only.
Now I only use my sight to intimidate people if I feel menaced but I don't like the fact that being a woman I'm always exposed and I cannot do whatever I want.

a. If you could wear one of these heroines as a mask for one day which one you would choose? (I was showing some photos)

I would choose Jean d'Arc only for the pleasure of wearing an armoire, for experimenting the simple feeling of metal constraining my movement.

8. Have an object/dress ever made you feel different? Special?

Simply the fact that I wear high heels and miniskirt can make me feel different. I like formal dresses, I like the elegance they create in my movements, and they make me feel more women when I want, I like the fact that they constrain somehow my body, that I can be the child and at the same time the woman in the same body.
I love cotton and stretch materials, I like to feel wrapped, and I enjoy resistant material because I want them to last long and they consume themselves through time.

9. Did it evoke an atmosphere around you?

Yes of course they change completely the perception of people around you, especially if you change constantly. Once I remember I was going out of the dorm and the simple fact that I was wearing lipstick made me different, three friend of mine turned at me recognizing me only after a while.

10. Have you ever experienced a moment of flow? By doing what?

Drugs and meditation can give this feeling, but also a landscape and every moment of pure beauty. Sometimes it happen to me when I walk for a longtime without speaking and I got tired.

### 11. Have you ever had an experience of daydream?

When I'm tired I feel things in a different way, a surreal layer cast upon reality. But in general I have this feeling when due to a changing detail in my attention I can bring my attention in another space and time.

## 8.g. Interview with Kathrine Thie

### 4. Have you ever find yourself into the description of a character of a book?

Yes, many times, lately especially in Barbara Kingsoliver book. In her book the main character is a good example of what I'd love to be, she has the ability to stop and think before doing, before rushing, she gather all patience and strength to focus on something. I feel more instinctual but I'm trying to be more thoughtful.

### 2. A movie?

Sabine, in The Unbearable Lightness of Being, she is so true to herself, so passionate, she is able to see reality for what it is and do the right thing. There is a small gesture in a scene of the movie that I recall in particular, when she decide to leave Thomas, she is sit at a table her hand on his hand, she smoothly take her hand away and dismiss him with few words, she set him free, she's able to feel comfortable in being alone, without fear.

### 12. Have you ever dreamt about being a heroine? What's special about her?

Yeh. Catwoman! She is able to take a traumatic experience and transform it into something strong and positive. She wants to be loved without compromises. She's amazing in her nimbleness, falling down from a skyscraper she's able to flip backward and land perfectly safe on her feet. I love her costume; she beautifully made it by herself, it's the manifestation of her from being a broken victim turning into a

powerful person. I love the fact that she use sexuality as a power instead of a punishment.

### 12.1 Would you like to wear her costume?

No, I think I couldn't, it's too much, too psychologically loaded, the old one (tv show series) is more accessible, easier to wear and very feminine.

### 13. Which kind of super power would you like to have? Why?

The possibility to fly. None of the woman heroine could really fly, only man heroes could, that's not fair!

### 13.1 What would be the external manifestation of this power?

I would imagine it very simple, like a wet-surfing suit, very aerodynamic and comfortable.

### 13.2 If you could wear one of these heroines as a mask for one day which one you would choose? (I was showing some photos)

I would be Cleopatra, exactly in the moment in which Antony suggests her not to attack. I'd take her place, forget about Antony, conquer Rome and change history. Then I'll give back power to her it's such a pity that she fails because of him.

### 8. Have an object/dress ever made you feel different? Special?

Yes, sometimes can be a simple skirt, worn with a different feeling. A little make up makes also the difference.

### 9. Did it evoke an atmosphere around you?

Yeh, people can really perceive that you feel different and comfortable in something. That balance you project outside you attracts their look; you can tell it from their smile.

### 10. Have you ever experienced a moment of flow? By doing what?

Oh yes, gardening. I can spend hours and hours, adjusting my flowers, listening to them, even speaking to them. It's just a constant flow of actions and words.

11. Have you ever had an experience of daydream?

Oh everyday sometimes it's just a little detail that diverts my attention, the shape of a cloud, the color of a tree, a small bugs and then I can go on and on a parallel dimension, like a dreamy layer upon "reality".