

## Faraway

Kristina Andersen, Margot Jacobs, Laura Polazzi

(c) 2002 Interaction Design Institute Ivrea. All Rights Reserved

**Faraway**  
Kristina Andersen, Margot Jacobs, Laura Polazzi  
(c) 2002 Interaction Design Institute Ivrea. All Rights Reserved

**Abstract**

FARAWAY is an exploration of intimate communication, focusing on the concepts of emotional closeness and physical distance. The aim of the project is to identify new directions and ways of thinking for the design of physical interactive applications that increase the sense of presence of loved persons separated by distance.

This paper introduces a theoretical research and a game based methodology created to investigate the needs and desires of people who are physically distant but emotionally close. The IF ONLY games were designed to create a series of provocations where a group of players could become actively involved in different kinds of emotional experiences or exchanges.

The results of this methodology and an outline of the design of exploratory tools for emotional communication are included. These tools are simple tangible user interfaces incorporating diverse conceptual models and utilizing varied interaction elements. They are designed to allow people to assert their presence inside the emotional space created by their affectionate relationship.

The exploratory tools are the results of a game based method dependent on user involvement consequently they will be tested with users incorporating the same kind of playful procedures.

## Contents

1. Introduction
2. Theoretical background
  - 2.1 Related work
  - 2.2 The Field Between Presence and Absence
  - 2.3 The Emotional Body
  - 2.4 Symbolic Presence
3. Design
  - 3.1 Communicating with DistantOne
  - 3.2 Designing the Emotional Space
  - 3.3 Gameset 1: Introducing DistantOne
  - 3.4 Gameset 2: Are you my DistantOne?
  - 3.5 Instruments for Navigating the Emotional Space
  - 3.6 Gameset 3: Communicating with DistantOne
4. Analysis
  - 4.1 Games, Symbols, & Rituals
  - 4.2 Expected Outcomes
5. The Future of DistantOne
6. References

# 1. Introduction

FARAWAY investigates the nature of the emotional exchange between loved ones and explores how technological solutions may reinforce this exchange over distance.

The concept of distance is frequently used as a metaphor to define emotional relationships (Kovecses 2000). Positive feelings like love, friendship and intimacy generally are referred to as closeness between two entities.

‘We are inseparable’  
‘We are tight as a glove’  
(Kovecses 2000: 92)

Yet, the figurative proximity connecting two affectionate persons sometimes contrasts with their actual physical location. It happens that people emotionally close find themselves physically distant from each other for short or long periods of time. This physical distance can be an important limitation in maintaining the sense of closeness. Being far away from lovers, family and friends is commonly perceived as a privation.

In the case of parted lovers, these factors are not just present, they constitute their main problem- which is that they want to be together and cannot be.

(Channel 1997: 144)

In order to reinforce their emotional closeness over distance, loved ones seek alternative means for communicating. A common solution is to use existing media for long distance communication. Linguistic studies demonstrate that for people in an intimate relationship the very objective of mediated communication is to feel each other’s presence. Telecommunication is used by loved ones *‘to express a wish to be together’* (Channel 1997: 144) more than for any actual exchange of verbal content.

Most of the existing media allow creating a sense of each other’s presence by supporting simultaneous interactions. Talking on the phone and listening to the other simultaneously, exchanging text messages or seeing each other’s images in real time helps us feel closer to the other person, as if we were together.

Yet, existing media offers a narrow channel for people who are communicating in order to do affective work. One element of impoverishment in distance communication with respect to face-to-face interaction concerns the ‘sensorial poorness’ of current technological artefacts:

When lovers are together, much of the work of establishing and maintaining intimacy and desire is accomplished through touch and gaze, neither of which is available [in a phone conversation]

(Channel 1997:145)

However, this is not the only limitation. Most of the effort in the telecommunication industry is done to increase the bandwidth of the channel, the miniaturisation of the technology, the ubiquity of the services. As Taylor and Harper (2002) assert in their study of mobile phone usage amongst teenagers, designing communication technology would require a more articulated and profound understanding of the users’ practices and their capacity to build and share meaning. For example the unforeseen success of a technologically simple solution like SMS (short messaging service) suggests that other factors than the richness of the protocol may contribute to determine the appropriateness of a medium to exchange meaning remotely. As the authors demonstrate, not only the content of the message but social practices like the gift giving and receiving ritual, shape the meaning of the communication and its emotional value. Exchanging a ‘goodnight’ text message is a way to signify and reciprocate a sense of intimacy and, we would add, to assert presence.

We believe that a reflection on the nature of remote communication and the mechanisms that allow the participants to create and share affective meaning is a key issue to address, in understanding how to reinforce the sense of closeness between affectionate people through technological artefacts.

The focus of FARAWAY is on 'high meaning and low bandwidth'. We aim at identifying basic but meaningful interactions that might be supported by different technologies. Although our work relates to other projects (see chapter 2), our approach is different. Our main focus is not in creating another design product but in defining a design space and a design methodology for distant communication applications. In the same spirit of Svanaes and Verplank (2000) we are looking for metaphors, as well as behaviours and languages, to inform the design of physical computing applications. How do people communicate with their distant loved ones? How can this communication be improved? What can interaction design do to decrease the perception of distance in affectionate relationships?

The outcome of the project is a series of findings and concepts that might either evolve into new products, enhance existing ones or be used as a knowledge basis for different kinds of research and commercial projects.

The second chapter introduces our theoretical background. First, we present the work done by other researchers, designers, artists that, for different reasons, inspired and influenced our research. Then, we illustrate our own line of thinking, referring to ideas and theories borrowed from different and varied disciplines. We start with our definition of presence and our articulations of this concept. Then, we outline our position about how the sense of presence can be conveyed over distance. How can we perceive the presence of someone who is not physically here? What can we use to give a sense of other people being here in distant communication? We follow two different directions of investigation. The first one concerns symbols, and in particular the symbolic meaning of objects. How can we sense the presence of someone in an object? The second one is the physiological manifestation of emotions. Body messages are an important aspect of face-to-face communication, especially in affectionate relationships. However, in distant communication this information is lost. Can these messages, both controllable and uncontrollable, both visible and invisible, be used as substitutes, surrogates or placebo for physical presence?

The third chapter describes the solution we adopted in order to answer these questions. Firstly we present our distance communication model defining both the boundaries of communications processes we are interested in and the relevant variables or elements that play a role in shaping this kind of communication. The model is an operation that provided us with a set of formalized elements to work on. Secondly we illustrate the concept that we adopted as a design framework for our research. The 'emotional space' is a metaphorical construction allowing us to define the specific dimension that people enter while communicating with their loved ones. Investigating people's behaviors in this particular dimension and identifying new modes of interaction are the focus of our project. We propose creating playful and engaging experiences, using artefacts and technical pieces as a way to explore people's capacity and willingness to create and share meaning through existing and new technologies. Allowing people to experiment with conceptual and physical applications is for us not only a way to understand their desires and emotional responses, but also a way to permit the emergence and evolution of new interactions through use. The IF ONLY games is the methodology we designed to obtain a real emotional response from people involved in artificial tasks. Based on both participatory design and surrealist techniques, we created playful procedures and systems of surprise to access knowledge and experiences of the group of players. In the rest of the chapter we illustrate the three sets of games that gradually change from the documentation of reality-based communication modalities to the envisioning of new ones. Based on the results from the previous steps we designed a series of simple technological artefacts incorporating diverse long-distance interaction models and different configurations of communication variables for the last set of games. The pieces are instruments for navigating the emotional space created within the affectionate relationship of the players; they are intended as exploratory tools for the participants to use in order to assess their ability to convey presence over distance and as triggers for the emergence of new behaviours, rituals and languages between the couples.

In the fourth chapter results of the first series of games and the expected outcome of the third one are illustrated in detail.

The fifth chapter presents the conclusions we obtained from our research as well as perspectives for the future. There are many possible evolutions and applications for the research conducted by FARAWAY. The conceptual investigation, inside the first chapter, is a potential source of information and ideas for both practitioners and researchers, inside and outside the field of interaction design. The IF ONLY games are a methodological tool for user survey and testing that could be applied to design fields, both in commercial and educational settings. We imagine that results from the third set of games will provide substantial information and otherwise unavailable user feedback about long-distance communication. This information could influence new modes of thought about design, including new services that could be incorporated into existing communication devices and the design of entirely new communication devices.

## 2. Theoretical background

Concepts of presence, emotions and interpersonal intimacy have been touched upon in the recent years by several design and research projects. Reviewing the literature in the design field provided us with interesting insights as well as with question marks that we tried to resolve by looking at other disciplines. In this chapter we present the projects that we found most inspiring together with an in-depth exploration of the concepts underlining the current and potential research on these subjects: presence, emotions and symbols.

### 2.1 RELATED WORK

#### **Presence and tele-presence: the potential of sensorial information.**

If the research dealing with presence and tele-presence is still on working practices and game playing, focusing on the activity to being performed, in the recent years there has been a growing interest in the emotional and affective dimension of remote interaction.

This new line of research centralizes on non-verbal languages and the use of sensorial modalities both for sending or receiving messages over distance. Blowing, touching, squeezing, smelling, lighting, vibration, are all increasingly used in experimental works to explore new ways of communicating presence. Projects like 'LumiTouch' (Chang et al. 2001), 'The Bed' (Dodge 1997), 'Kiss communicator' (Buchenau & Fulton 2000) and 'Feather, Scent and Shaker' (Strong & Gaver 1996) are some of the examples of this approach. Different from many existing means of communication, the concepts or prototypes proposed by these pieces incorporate sensorial information as elements of private language within the couple. The interesting aspect of this emerging trend is the underlying idea that alternative and less defined ways of expression might evoke another person's presence in a more suggestive and poetic way than the exchange of verbal content.

Besides the common approach, these projects utilize specific and diverse mechanisms for the couple to interact remotely. Both 'LumiTouch' and 'The Bed' invest everyday objects with behaviors mimicking or recalling metaphorically the actions of a person that is far away; a couple of connected pictures frames that light up in response to touch in the first case, typical elements of a bedroom (pillows, bed, curtains) reacting to the actions of a remote person through aural, visual, and tactile messages in the latter. Conversely, the 'Kiss Communicator' and 'Feather, Scent and Shaker' propose pairs of artifacts specifically designed to allow couples to create and share a new sensorial language.

A sensorial channel that is commonly explored and seems particularly promising in distance communication is the tactile one. As several projects demonstrate, haptic communication offers great opportunities not only to convey presence (Brave & Dahely 1997), but also to develop complex languages over distance (Fogg et al. 1998; Chang et al. 2002). Even if they are not specifically focused on intimate relationships, projects like 'inTouch', 'HandJive' and 'ComTouch' shed light on the expressiveness of this kind of information and its possible role in augmenting existing channels.

All the works mentioned so far aim at supporting the remote exchange between two people through personal connected devices, which implies an existing relationship between the users. Another direction followed by several projects is to design tools that create a sense of presence of a remote person that is not necessarily known.

Both 'Bench' by Raby & Dunne (1994) and 'Breathe' by Findley and Jacobs (<http://www.telefonica.es/fat/vida4/premio/ebreathe.html>) build on the idea of disseminating personal presence in public spaces, creating a communication channel between unrelated people. In these projects, as well as in the previous ones, the information that people exchange is not verbal. Through the installation 'Breathe' people can access the respiration of another person previously recorded and translated into a visual medium, while sitting on 'Bench' allows somebody to feel the warmth of another person sitting on a

similar device located in a remote location. Both Bench and Breathe show how alternative types of messages can be meaningfully exchanged in a communication process between two persons. Information like respiration, body temperature, heartbeat etc. that is involuntary produced by our body is a very important aspect of human communication especially concerning and contributing towards emotional states.

### **Emotions and physiological data**

Physiological data and its relationship to emotions and computation is becoming an increasingly popular subject of investigation in the interaction design community. Even if the main focus of this research is not on the communication process, the work done in this field has been and still is very important in defining the opportunities that technology can open in this area. One of the most important contributions in this sense comes from MIT Media Lab and in particular from the group of Rosalind Picard. By coining the name 'affective computing' (1997), Picard initiated a successful line of research into the relationship between physiology and computers. Her approach is to track sensorial information in order to improve the interaction between humans and machines. By building sensors that gather people's physiological changes and algorithms that detect the patterns in this critical amount of data, the affective computing group aims at creating machines that interpret and respond to a user in an emotionally intelligent manner. The idea is that by knowing the user's mood and emotional reactions to particular events and situations the computer will be able to behave appropriately.

Another field where physiological computing is producing important results is healthcare. Medical applications benefit from the development of sensing technology and improving the possibility of monitoring people's physiological changes. An extreme case in this area is Kevin Warwick (<http://www.kevinwarwick.com/>), from the University of Reading, who aims at capturing and communicating emotions by accessing the nervous system directly. To achieve this, Warwick implanted a microchip in his arm that captures the signals of his nerves and transmits them to a computer.

The relationship between body data and technology is also a subject of exploration in the realm of digital and interactive art. Stelarc (<http://www.stelarc.va.com.au>) uses performances and body sculptures to display the body as augmented, invested, and as a host for technology, underlining not just the body's identity but its connectivity and its interface. Stelarc uses amplified body processes including brainwaves (EEG), muscles (EMG), pulse (plethysmogram) and blood flow (Doppler flow meter). Other transducers and sensors used monitor limb motion and indicate body posture. The performances are choreographies of controlled, constrained and involuntary motions of internal rhythms and external gestures. Another artist, Thecla Schiphorst (<http://www.art.net/~dtz/schipo1.html>), works with the movements of the body as mediated by technology and the space it inhabits. Her work is focused on experiencing and knowing one's physical self in non-linguistic ways and developing languages and practices to express this knowledge.

### **A method to investigate presence**

An interesting and articulated research project is the European i3 project 'Presence: New Media for Older People' (Hofmeester & De Charon 1997). In this case, conveying presence is seen as a way to improve social relationships, specifically to decrease the sense of isolation experienced by older people in modern societies. Both the methodology adopted and the results produced in the context of this project are relevant to our research aims. In order to understand the culture and communication practices of their user groups, the designers conceived a series of tools called 'Cultural Probes' (Gaver et al. 1999) aimed at collecting elderly people's experiences in an informal and engaging way. By providing the users with familiar artefacts like postcards, photo cameras and maps and asking them to document their attitude about the surrounding environment, their use of technology and their lives in general, the researchers were able to obtain very rich inspirational material for the design phase. At the same time the method allowed the users to actively participate in the process and feel engaged with the project. Through this methodology, 'Presence' produced different concepts and a couple of prototypes. Some of the concepts are tools to access and exchange information, while others deal with interpersonal communication and are indeed more relevant for our research. 'Nonnogotchi', for example, designed by Domus Academy, is a simple example of how both presence and emotions can be conveyed over distance through a communication device. The



system aims at strengthening intergenerational exchange between children and grandparents and the reciprocal awareness of their emotional state: both children and grandparents can send proposals to each other suggesting things to do; the answer given by the receiver modifies an icon of the sender representing his/her state of mood. Another interesting prototype developed in the context of the 'Presence' project is the Royal College's 'Legal Graffiti'. In this case the solution proposed by the designers supports elderly people's need to have their presence recognized within the community instead of the family. A series of 'Sloganbenches' were designed with a display embedded into the backrest showing elder people's opinions and thoughts about the area. If 'Nonnogotchi' supports a bi-directional and one to one emotional communication between affectionate people, 'Legal graffiti' instantiates a mono-directional channel between a well identified group of people and a varied random audience.

### Comparison mappings

The ensemble of these projects gives an overview of the different themes and approaches touching on the ideas of presence and emotions. Another way to view this work is to consider the design choices incorporated in the prototypes they produced. The diagrams below show how we classified and analysed the different variables involved (fig. 01 - 06)

Relationship: Some of the prototypes aim at connecting people in intimate relationships while others create a channel between strangers. The projects are intended to connect which kind of people?

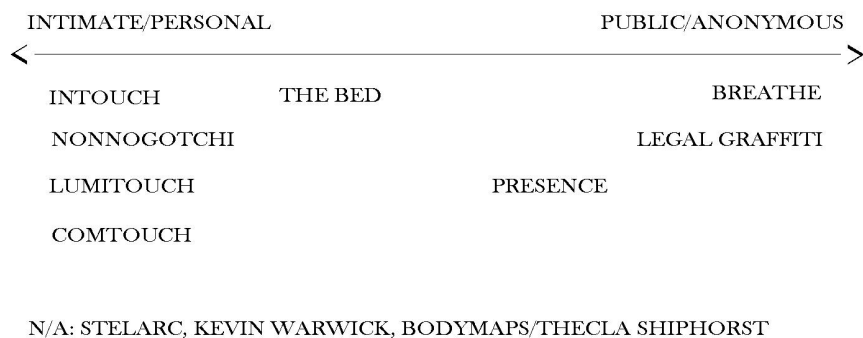


fig.01 *relationship*

Location: In some cases the solutions proposed are located in a particular environment, while in others, solutions can be transported by the users. How do the projects relate to mobility?

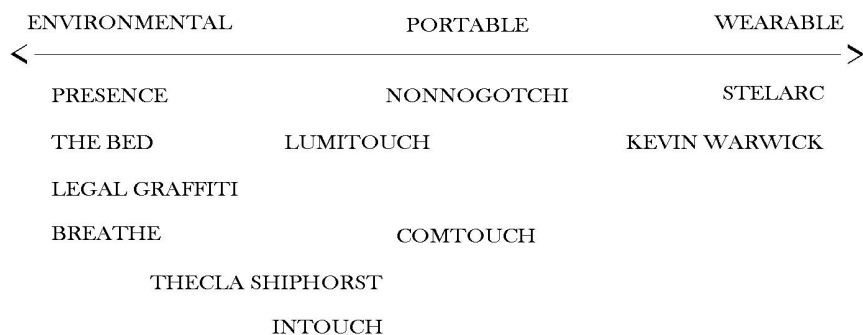
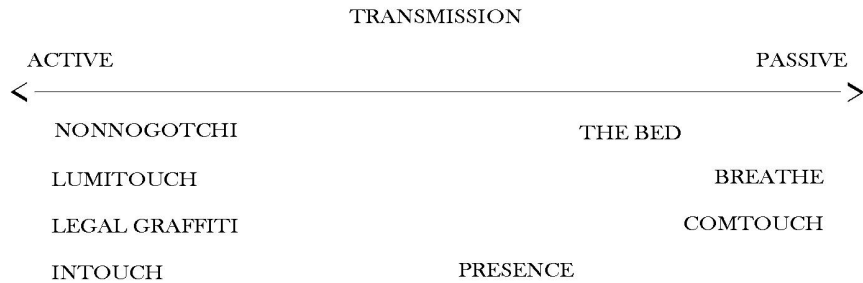


fig.02 *location*

Transmission activity: The activity demanded by the sender to transmit a message varies amongst the projects. In some cases the information is recorded and sent automatically by the system, while in others the communication process must be initiated. What level of effort do these projects require in order to send a message?



N/A: STELARC, KEVIN WARWICK, BODYMAPS/THECLA SHIPHORST

fig.03 transmission activity

Transmission senses: The projects present a wide range of input modalities. These include various senses as well as verbal language. What are the modalities of transmission that these projects utilize?

TRANSMISSION	TACTILE	TEXT	LIGHT	SOUND	SMELL	TASTE	MOTION	PROXIMITY	U.B.M.
THE BED	X			X			X		X
BODYMAPS/SHIPHORST							X	X	
BREATHE									X
COMTOUCH	X								
INTOUCH	X						X		
KEVIN WARWICK								X	
LEGAL GRAFFITI		X							
LUMITOUCH	X							X	
NONNOGOTCHI		X							
PRESENCE	X			X				X	
STELARC									
U.B.M. - UNCONTROLLABLE BODY MANIFESTATIONS									

fig.04 transmission senses

Reception activity: The activity demanded by the receiver to access a message also varies amongst the projects. In some cases the message is made automatically available to the addressee, while in others this requires a deliberate action or procedure. What level of effort do these projects require in order to receive a message?

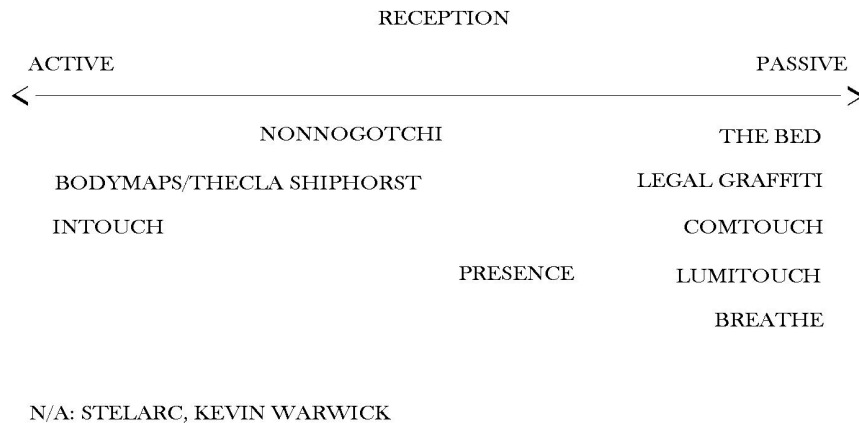


fig.05 *reception activity*

Reception senses: The projects also present a wide range of output modalities. What modalities of reception do these projects utilize?

TRANSMISSION	TACTILE	TEXT	LIGHT	SOUND	SMELL	TASTE	MOTION	PROXIMITY	U.B.M.
THE BED	X		X	X			X		
BODYMAPS/SHIPHORST	X			X					
BREATHE							X		X
COMTOUCH	X						X		
INTOUCH	X						X		
KEVIN WARWICK									X
LEGAL GRAFFITI		X	X						
LUMITOUCH			X					X	
NONNOGOTCHI		X	X						
PRESENCE			X	X					
STELARC	X						X		X
U.B.M. - UNCONTROLLABLE BODY MANIFESTATIONS									

fig.06 *reception senses*

## 2.2 THE FIELD BETWEEN PRESENCE AND ABSENCE

What is presence?

As shown in the previous section, interaction design has begun imagining ways to convey presence over distance; yet the definition of what presence is often remains implicit.

The semiotic square that Algirdas Greimas (1987) adapted from the ‘logical square’ of scholastic philosophy, is a powerful tool used to grasp the deep sense of an idea. By bringing to light the reciprocal relationships between concepts composed in the same universe of meaning, it allows us to understand why and how a concept is perceived, and used by people in a certain way.

The semantic field of presence is characterized by two basic elements: temporality and spatiality (fig.07). If we look at the etymology of presence, we see in fact that the term comes from the Latin *praesesse*, meaning ‘being in front of’. At the same time the Webster dictionary’s definition for ‘present’, includes ‘existing now’, which corresponds to our common perception of this word as a temporal indicator. So, we can say that presence includes both time and space. We perceive people as present when they are in the

same time and space as we are. In formal terms, we can say that presence corresponds to the two conditions:

being here AND being now

What happens if those two conditions are not satisfied? This is the situation of:

NOT being here AND NOT being now

When both spatial presence and temporal presence are missing we have 'absence'. In other words, we perceive someone as absent when he/she does not share our temporal and spatial dimension.

Now let's see the other possible articulations of this category of meaning. When only one of the two conditions is not satisfied we have:

being here AND NOT being now

Or

NOT being here AND being now

The first case corresponds to a spatial presence but a temporal absence. We perceive the presence of someone as being in the physical place where we are but not in the same temporal span. We called this situation 'traces'. For example the footprints left by someone else communicate to us his/her physical presence in the past.

The other possibility is having a presence in time but not a presence in space. We perceive the other as physically distant but present in a temporal sense. This is the case of real-time interactions over distance, such as talking on the phone or participating in a videoconference, where we communicate in a simultaneous way with someone that is physically distant (tele-communication).

We believe that the field between traces and tele-communication offers significant opportunities for interaction designers to experiment with and shape people's feelings of closeness and distance. By playing with the cultural and sensorial elements that currently create 'the sense of presence' in situations of physical or temporal absence it is possible to envision new technological solutions that can enrich connections between people separated by distance.

In the following sections we will illustrate the potential of conveying presence that we choose to explore for this project.

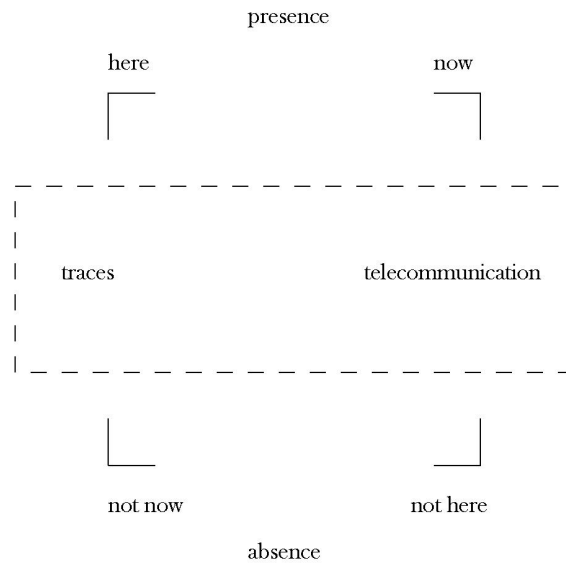


fig.07 *presence square*

### 2.3 THE EMOTIONAL BODY

If a lot of investigation is currently being done into the use of physiological information in human-computer interaction, their potential role in human telecommunication applications is still a very open and unexplored issue, at least outside of the medical field. However, physiological manifestations of emotions are potentially powerful messages in distant communication between people.

Human presence in space is strongly associated with physical presence. In interpersonal relationships the human body plays a crucial role in both sensing another person's presence and determining the nature of the interaction. During face-to-face communication, it is possible to access another's emotions through the interpretation of external signals, commonly known as body language. Our body acts as a medium that transforms our internal emotional states into these external signals. Understanding how another person is feeling is particularly important in affective relationships. In having a visual and aural reference to the body, loved ones are able to access information about each other's emotional state.

The relationship between body, emotions and communication is a complex one. When we experience certain events in our mind or our environment, a stimulus triggers a component of the brain that leads to changes in our brains and bodies (Damasio 1994). Certain physical changes are visible to other people, and automatically communicate our emotional condition (e.g. trembling); some of them can be accentuated by our willingness to show our feelings (e.g. smiling); we can also use social codes to voluntarily express what we feel in our brain and bodies (e.g. gestures); and finally there are physiological emotional reactions that are not externally manifested and can only be noticed through medical survey (e.g. blood pressure modifications).

The main general distinction among body manifestations of emotions, is between what can be controlled and what cannot. The 'controllability' has in fact many implications for the communication process especially concerning meaning attribution and interpretation. Generally controllable manifestations are socially interpretable due to their visible and apparent nature. What emotional responses could be provoked accessing otherwise unattainable uncontrollable body manifestations?

### **Controllable**

We communicate our emotions through a series of non-verbal codes that are strongly influenced by our culture but are also related to our physiological reactions (e.g. smile, tears). As theatrical acting clearly demonstrates, these communicative elements can be controlled and manipulated.' According to Volli (1994), controllable manifestations include gestures, postures, expressions and movement. They can communicate fear, sadness, anger, etc, as well as voluntarily communicating love and thus closeness and intimacy.

These elements include:

- actions
- distances
- expressions
- gestures
- postures and attitudes
- voice intonations

In situations of physical co-presence the meaning of these emotional expressions is defined by the relationship, the context, and the language of the people involved in the interaction. However, even in face-to-face communication for example, the use of a particular facial expression or a voice intonation can be interpreted in way that deviates from the addresser's intentions.

What happens when we incorporate the use of gestures or expressions over distance? What meaning can they hold? Which kind of new emotional languages can be created?

### **Uncontrollable**

We define uncontrollable body manifestations of emotion as specific internal modifications of the physiological components of our body that occur in response to a particular input. These include manifestations that are only accessible to other people through close physical contact such as heart rate and respiration, as well as blood pressure, which requires the use of specific monitoring devices, in order to be accessed.

According to Damasio (1994) our body has a prevailing internal state that we perceive as a 'background feeling'. Background body sense is continuous and contributes to define our 'mood' in a given period of time. Emotions are variations of this state that occur in response to particular stimuli. Damasio's claim is that these internal modifications are the emotions, while the feelings come afterwards, by associating the emotion with the object that provoked it; feelings are conscious views of the unconscious body's internal changes. For example elevation of blood pressure, increased heart rate, and increased respiration occurring after seeing a person that we like make us feel 'happy'. Similarly we can interpret a configuration of internal modifications like increased skin conductance levels, increased blood pressure, sleeplessness and a decrease in appetite occurring after a loss, as 'sadness'. The physiological components mediating our emotional physical reactions include the nervous system, hormone secretions, neural responses, and chemical composition of bloody fluids and activity of skeletal muscles involved in respiration, muscle tension and overt movement.

Primary or universal emotions correspond to distinct and pre-organised configurations of body states.

These are:

- anger
- fear
- disgust
- sadness
- happiness

Secondary emotions are subtle variations of the five universal ones. For example, euphoria and ecstasy are variations of happiness; melancholy and wistfulness are variations of sadness; panic, shyness, and embarrassment are variations of fear.

Uncontrollable manifestations of emotions include:

blood pressure  
electrocortical changes  
gastrointestinal activity  
piloerection  
pupillary responses  
electrodermal activity  
heart rate  
hormonal changes  
respiration  
secretory functions  
trembling

We can imagine situations where people exchange heartbeat, breath, alpha and beta rhythm information as messages in a long distance communication context. Although it is very hard to predict and in turn interesting to investigate the meaning that this kind of information will be attributed to in the communication context.

## 2.4 SYMBOLIC PRESENCE

Projects like 'The Bed' and 'Lumitouch' and partially also 'Bench' and 'Sloganbenches' play with the cultural connotations of certain objects in order to augment them with technology. These projects build on a mechanism that can be defined as 'symbolic investment': objects conventionally invested with either cultural existing meaning or personal new meaning, can act as vessels or vehicles for another person's presence. Thanks to particular and diverse rules, specific items can become virtual 'traces' of something or someone that is not present, or not present anymore. In other words, these objects become symbolic surrogates of presence in time and space.

In the classic definition of Charles Sanders Peirce (1931-1958) a symbol is the kind of sign that has an arbitrary link with its object. In other words, a symbol stands for something else by virtue of a convention. The degree of conventionality of the link relating the object with its meaning is variable; it can be represented on a continuum going from the fully codified to the completely open.

A domain full of strongly codified objects is religion. The Eucharist is probably the most classic example of a symbol of presence with a strictly codified meaning. The New Testament gives a precise definition on what the Eucharist is:

While they were eating, Jesus took bread, gave thanks and broke it, and gave it to his disciples, saying, "Take and eat; this is my body." {27} Then he took the cup, gave thanks and offered it to them, saying, "Drink from it, all of you. {28} This is my blood of the covenant, which is poured out for many for the forgiveness of sins."

(Matthew 26:26-28 NIV)

"And when he (Jesus) had given thanks, he brake it, and said, Take, eat: this is my body, which is broken for you: this do in remembrance of me."

(1Corinthians 11:24)

And Christian ceremonial provides us with strict rules and procedures concerning the context and the modalities for the host to acquire its symbolic power. The Eucharist has the same meaning and the same 'mode of use' for everybody. The choice is between believing and not believing.

The same kind of codified routines applies to other kinds of religious symbols of presence.

A voodoo doll consecrated and named after a person with an artefact of their body or writing will affect that person when a spell is induced. Money used and energized in a spell will bring more money to the

person encapsulated in the voodoo doll, and so forth. Herbs, incense, and other components of a spell are also effective. They are different symbols that emphasize the desired outcome of the spell.

Most objects combine both cultural and personal meaning in varying proportions. In the case of symbols for love and friendship, the objects are partially culturally codified; however they are always embedded with strong personal and private meaning. Wedding Rings are usually symbols of marital agreement, fidelity, and love. The power of these objects can be very strong.

Let's take my wedding ring as a simple example. If I were to regard this object merely as a sign of my status as a married person, then the ring itself, as an object, would not be very important to me. [ ] However, because I regard my ring as a symbol of my commitment to love my wife as long as we are alive, the ring itself actually participates in my marriage. To lose it or even to decide not to wear it would be a tragedy, since part of my marriage would thereby be lost.

(Palmquist)

Different from the Eucharist, the wedding ring has more opportunity for personal investment, in the sense that there is not a fixed relation between the object and one unique entity. The sense of presence that the wedding ring conveys as well as the values associated with it changes based on the person.

Even though friendship bracelets and lockets have similar characteristics, they offer broader possibilities for meaning attribution. Although their function is conventional, these symbols can be both associated with a person as well as affording more freedom in terms of context.

Within the body is both the heart and the heart's content - the other ...The locket creates an additional secret recess of the body. Such recesses, which depend upon the protective functions of clothing, are always vulnerable to exposure.

(Stewart 1993)

At the extreme edge of the continuum there's a variegated and infinite set of tokens with a functional or aesthetic value that can become personal objects of affection. Souvenirs are items taken from a given time and place symbolizing not only a point in time but often the person with whom the time was shared with. Thanks to our personal and idiosyncratic rules of 'consecration' they acquire the very special power of conveying a presence. Like imprints testify someone's past presence by virtue of a physical sign, souvenirs suggest someone's presence by virtue of an emotional association. Souvenirs come in many forms; some of them like photographs, postcards, etc. are more 'classical' and conventionally identified as such. However any kind of object can be included in this category, which is therefore the most open one.

The souvenir distinguishes experiences. The souvenir is not simply an object appearing out of context, an object from the past incongruously surviving in the present; rather, its function is to envelop the present within the past. Souvenirs are magical objects because of this transformation.'

(Stewart 1993)

Understanding how the symbolic investment occurs and is shared over distance opens interesting possibilities to design tools that convey presence.



## 3. Design

### 3.1 COMMUNICATING WITH DISTANT ONE

Parted loved ones tend to communicate intensively.

Communication is a complex activity that has been formalized by different disciplines and with different purposes. The Shannon and Weaver's model (1949) is typical of what are often referred to as transmission models of communication. The emphasis here is very much on the transmission and reception of information and the model is very technology-oriented.

Linguistics' and semiotics' communication models go beyond the basic transmission of information and try to explain the mechanisms of interpersonal communication. Jakobson (1960) for example, identifies the six possible functions of a communicative act, varying from the purely referential one (focusing on the transmitted information) to the metalingual (referring to the code) or the poetic (creative use of language). One of the models proposed by Umberto Eco (1976) is particularly focused on the coding and decoding process, emphasizing the contextual and circumstantial nature of meaning interpretation.

Information is a value depending on the richness of possible choices; the different coded readings of these memes, along with the manifold interpretations, constitute multiple choices which can be reduced to a binary selection. This information of the message is only reduced by the addressee when he/she selects a definitive interpretation.

(Eco 1976:140)

Both the technology-oriented and the semiotic approach to communication are relevant for us. Designing long distance communication applications includes making a number of choices on which technology is used. Designing so that people can share emotional meaning and feel each other's presence over distance has a lot to do with meaning and meaning interpretation. At the intersection between those two approaches: the relationship between technical choices and meaning creation is the domain of interaction design.

In the context of FARAWAY we built a simple model (fig. 08) incorporating elements from these two typologies and introducing some new ones. Our model of distance communication lays no claims to be complete or innovative; on the contrary it is intended as an operational tool allowing us to identify the variables that can be manipulated for our specific purposes. Different from many of the existing models, we tried to go beyond verbal communication and to consider both existing technology and possible new ones. As a first step, we performed a series of reductions in order to delimitate our field of interest; then we identified the possible variations within this field.

The first reduction concerns the scale of communication. Our interest lies in interpersonal and one-to-one communication, which excludes a number of other communication modes like, for example, mass communication, group communication or the so called 'intrapersonal' (self directed) communication.

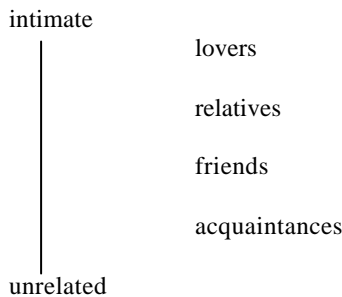
Scale:  
intrapersonal  
interpersonal  
group  
social

So, the first elements of our model are two entities, that we call simply 'me' and 'you', instead of 'sender' and 'receiver' (Shannon) or 'addresser' and 'addressee' (Jakobson) just because we want to suggest that these roles are interchangeable.

me ————— you

Our second assumption is that these two entities are not in the same place. This makes our model a distance communication model.

Another reduction concerns the nature of the relationship linking these two people. In our case we only consider people in intimate relationships, excluding other kinds of connections like, for example, working together or being acquaintances.



We then assume that 'me' and 'you' communicate.

First we take into consideration the type of message they exchange. For message we simply mean the 'form', the perceptual nature of the message. We have here the first set of variables. Considering that anything can be used to communicate (everything can be a sign for something else) the message can come in a potentially infinite variety of forms. Text, images, sound, and light are the most basic mediums. But we can introduce other kinds of classifications: objects, controllable and uncontrollable body manifestations which are other possible messages that can be exchanged over distance. As we have seen they can have a more or less ready-made meaning, but at this stage we consider them as pure 'signifiers'.

By adopting a classical semiotic distinction, we identified two different processes occurring while people communicate: the encoding and the decoding.

In our model, the encoding consists of three distinct moments.

Production is the physical creation of the message. This creation can be voluntary (an object, a text) or involuntary, as it happens with certain body's manifestations of emotions. This phase is not mandatory; we can communicate existing ready-made elements, like, for example, objects that we didn't create ourselves.

In distance communication producing a message doesn't necessary mean transmitting it. In a telephone conversation the voice is produced and transmitted at the same time, whereas writing a letter and sending a letter are two different activities. Our first distinction for the transmission phase is between active and passive, according to the degree of deliberateness that is required. The transmission also deals with a time issue: some messages can be transmitted continuously, or sporadically, in a discrete manner. Respiration can be transmitted continuously, while a postcard cannot.

The third aspect of the encoding process concerns meaning. Creating and transmitting a message always conveys meaning for the sender. But anyone can use a more or less codified language or even create her/his own code. Saying 'I love you' is not the same as writing a poem or painting an abstract piece of art, the latter involving a process of invention (Eco 1976) that is not present in the former. This is especially relevant in situations of innovation, when a new medium is provided to transmit non-conventional messages. What kind of meaning do I want to communicate by sending light, breathe, wind, or warmth to someone else? Maybe I know that the other person will understand, because we have a shared common code; or maybe I'm inventing a new one.

At each of these three levels encoding requires a variable level of effort: effort for producing, effort for transmitting and effort for creating meaning. For any of these there are extreme situations and a continuum of intermediate levels.

The decoding process doesn't include message production. Still, it implies both a reception and an interpretation process, associated with different levels of effort.

Once again, reception can be active, when the message is made automatically available to the addressee or passive, if this requires a deliberate action or procedure. The 'benches' designed by Fiona Raby and Anthony Dunne (1997) is a good example of environmental passive reception: when someone sits on the first bench, another remote bench warms up. The person sitting on the second bench receives passively the message of the other person's presence.

As for transmission, receiving can be continuous or sporadic. Television flow is continuous; an SMS is sporadic.

Interpretation is a crucial moment in long distance communication. Interpreting the meaning of a received message implies content creation in the same way of producing it. Although each message comes to the receiver with a certain number of constraints and opportunities, eventual ambiguities in the code used by the sender or a creative use of it may provoke unforeseen interpretations.

The information of the text is only *reduced* by the addressee when he selects a definitive interpretation. In the case of aesthetic messages which require the simultaneous grasping of multiple senses, this informational quality of the message remains *unreduced*.

(Eco 1976: 140)

With respect to the sender's intentions, the receiver can interpret the message in a coherent or deviant way ('aberrant', in terms of Eco 1976). If physical presence facilitates in many respects the homogeneity of the attributed content between me and you, distance introduces significant elements of variability and unpredictability in this process. The effects of this unpredictability are interesting to investigate in relation to the kind of messages that we considered in the previous sections. Using sub-codified expressive elements like body manifestations of emotions and objects of affection in long distance communication might lead to scenarios varying from pure noise to the emergence of creative and suggestive universes of sense.

The modalities of production, transmission and reception can play a role in determining the way in which meaning is shared over distance. Another important element in this sense is given by the rules of the communication process. If in face-to-face interactions these modalities are defined by social conventions, context, relationship, etc., distance communication introduces a new element. The interaction syntax, the way in which the processes of sending and receiving are coordinated influences in fact the nature of the communication and the way in which meaning is created and interpreted.

The aspects that we took into consideration are:

**Direction:** is the communication mono-directional or bi-directional? In the first case only one of the participants can send a message, while in the other both can send and receive. This aspect can influence the participants' sense of reciprocity as well as the process of interpretation.

**Timing:** a message sent by a person can get to a destination immediately (real time) or after a certain delay. As we have seen in the previous sections the temporal aspects play a role in defining the perception of presence.

**Mapping between the messages that the participants can send:** do these messages have the same form (homogeneous) or a different one (heterogeneous)? This may be an important issue in determining how the participants interpret the message.

Moving from face-to-face interactions to long distance exchanges of non-verbal messages opens a new and challenging space for experimentation. Every single element that we considered in our model is important to define the communication process. Even more interesting are the interconnections among those variables and the patterns that can be created by combining them in different ways. We consider our specific focus on emotional communication between intimate people as an interesting point of view to start exploring these possibilities.

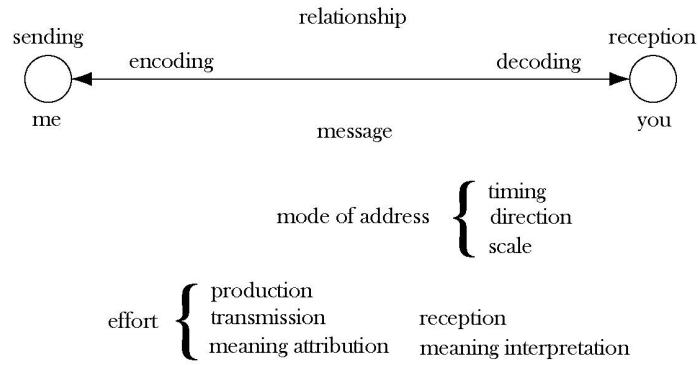


fig.08 *communication model*

### 3.2 DESIGNING THE EMOTIONAL SPACE

If real presence has certain spatial and temporal qualities, the psychological sense of presence doesn't necessarily follow the same rules. Thanks to our symbolic competence, we, as human beings, are able to go far beyond the simple perception of what is here and now. We are able, for example, to invent stories, to understand stories, to believe in afterlife, to believe in phantoms, to use metaphors, to play games, to lie. We create and share different worlds that exist alongside what we refer to or perceive as 'reality'. One of these worlds, the one that loved ones share, is what FARAWAY deems the 'emotional space'. An emotional space is a shared social construction between people in an affective relationship.

The expression 'emotional space' is widely used in the context of relationships. This 'folk' use of the concept can be seen on a self-help site, where the editor asks:

Are you able to achieve emotional intimacy with others? If not, what happens when you try to stay in a close or intimate (emotional) space with someone else?

([www.soulselfhelp.on.ca](http://www.soulselfhelp.on.ca))

Another example comes from a rabbi talking about how to create and maintain a safe emotional space in his advice section on a wedding site:

I can sum up the essence of building trust in one idea: Create a safe emotional space for your spouse. If you are not actively working to build a safe emotional space, than you are probably building an unsafe one.

(Rabbi Dov Heller, [www.kosherwedding.com](http://www.kosherwedding.com))

Emotional space has points in common with other kinds of abstract spaces that we live in and share in our life. For example we enter an alternative space every time we play a game or read a novel. These narrative spaces are similar to the emotional space in the way that they coexist with the 'real world' but follow different rules and allow us to be involved in another kind of experiences. Yet, emotional space is different:

- An emotional space is exclusive; only two people inhabit it.
- An emotional space requires a special relationship between the two people.
- An emotional space also contains special props that the two inhabitants create together.
- And emotional space and its props usually develop and change over a long period of time.

In other words, an emotional space is generated by the intimate relationship between two people (lovers, close friends, mother and child, etc.) that, as time goes by, create and develop together their own universe of codes, languages, rituals, references and modes of communication.

Presence and absence in the physical space and in the emotional space do not necessarily overlap. The emotional space has the special quality of allowing you to be present even if you are physically far away. You are still present for your loved one when you are present in the emotional space that you share. You are emotionally present when you do something for her or him, when you talk about her or him or, simply, when you think of her or him. Yet, for you and for the other inhabitant to feel each other's presence in the emotional space is not always easy when you are separated. In order to be fed and maintained over distance, this presence needs to be communicated. Communicating presence in the emotional space (fig.09) is the concept that FARAWAY adopted as its design framework. We believe that it is conceivable for someone in an affective relationship to experience a sense of closeness and presence over physical distance by sensing the other's presence in the shared emotional space. Symbolic presence, emotional body and communication variables are the elements we chose to explore within this framework.

FARAWAY's exploration of the design space is based on investigating the desire and experience of people. The core idea of the project is to gradually shift from the existing to the new by creating, collecting

and interpreting individual experiences within a defined design space. The reasons why we value experiences more than, for example, observation or interviews are multiple. Experiences have emotional and personal qualities. They produce traces and show behaviours. They can be designed in a way that reflects the evolution of the design objectives. They pleasantly engage people. And, even more importantly, designing experiences is the ultimate objective of interaction design. What we propose is to start designing experiences from the beginning, as a way to learn how to design the final ones.

In order to create meaningful experiences we had to create a meaningful context. People usually enter into the emotional space in a natural way, by virtue of their relationship with a loved person. In our case we had to artificially trigger this process, by keeping at the same time the natural qualities of the emotional experience. The IF ONLY games are the method we developed to support this process.

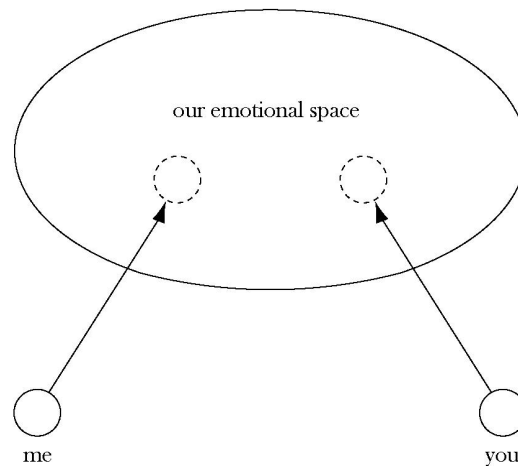


fig.09 *emotional space*

### **Another reality**

While the overall objective for the project was to investigate how to express and communicate emotions and presence, an additional objective became to investigate the means with which involve people into emotional experiences and produce interesting results.

Using games was the natural solution for us to explore. A game is a way to create another reality and allow people to enter this reality. The playing of the game requires surrender, a giving up of self in some degree. The player must not just trust the game context, but must to some extent allow the game to hijack the senses and the imagination. Similarly to a movie demanding the audience to accept seemingly impossible events, or poetry bringing the reader into another universe of meaning, games require a 'suspension of disbelief'.

That willing suspension of disbelief for the moment, which constitutes poetic faith.

(Coleridge 1817: Vol. I., chapter 14)

The relationship between immersion into a game and Coleridge's 'willing suspension of disbelief' has been clearly defined by Mataes (2001); when a participant is immersed in an experience, they are willing to accept the internal logic of the experience, even though this logic deviates from the logic of the real world. Murray (1998) goes further and suggests that creators of games need to not only suspend disbelief but 'actively create belief' by allowing players to manipulate objects and engage in enactment rather than processing descriptions.

The same kind of principles is evident in the artistic methods of the surrealist movement. Through playful procedures and methodologies of the fantastic, surrealist games lead to situations out of the ordinary where

the player is allowed to express her or himself in a more spontaneous and intuitive way. Analogy, re-invention, automatism, manipulation, de-composition and re-composition of reality are amongst the techniques used for this purpose (Gooding 1995). These methods employ elements from psychology, game play and narrative to lead to situations where the player is allowed to suspend their disbelief and access a 'surrealist' realm of creation and subconscious 'truth'. Besides the political and epistemological motivation, the ultimate objective of surrealism was artistic. Through their provocative methods this movement aimed at triggering creative expression and producing new and original aesthetic effects.

They are the games we play to exploit the mechanism of inspiration and to intensify the experience.

(Levy 1936)

Our objective for the games was similar to the surrealist explorations: To allow our players to go beyond the reality of current communication to envision new ones. Since our project was concerning an everyday experience and communication task we were looking for the players to go beyond that reality and allow themselves to creatively and emotionally imagine and envision new and different modes and involvements. The IF ONLY games refer to game theory and surrealism on two levels. On one level we created a 'surrealist' situation so that allowed our players to produce and contribute emotionally truthful content and on the other level we allowed them to experiment with non-conventional methods and use their creativity in order to investigate and express that content in new ways.

### **The IF ONLY games**

The IF ONLY games are split into 3 sets that gradually change from documenting reality-based communication modalities to envisioning new ones.

Our objective for the first set of games was to trigger creative behaviours through existing and low-tech artefacts. We wanted to explore the potential of objects, symbols, controllable and uncontrollable manifestations of emotions to convey a sense of presence and support emotional exchange in situations that are currently possible, although non conventional. We aimed at collecting a large spectrum of results reflecting individual practices and desires. At the same time we didn't want to be prescriptive; in order to obtain sincere emotional responses we needed to rely on the player's spontaneous participation. This was also a way for us to evaluate, through people's willingness to 'enter the emotional space', the validity of the methodology and the general attitude toward our object of investigation. For this reason we involved a large group of players (30-40) utilising an open and playful form of invitation.

The second set of games was more focused and small-scale. We aimed at testing the qualities of specific media to express and convey emotional content. This phase involved a smaller group of players, 12 in all. These games were conducted over two days by inviting the players to perform very specific tasks aimed at communicating with their distant loved one. Other players were then given the results of these tasks and asked to imagine that this was a communication from their distant loved one.

The third set of games introduces in the emotional spaces new artefacts specifically designed to test different models of interaction. The games involve fully functional game pieces called 'beans' that incorporate elements of the other sets as well as simple technology. This third phase is particularly focused on communication models and interaction elements and is intended to complement the previous ones in assessing all the variables that can be used to support distant emotional communication between loved ones.

### **Style**

The overall ensemble of IF ONLY games has been designed in a coherent way, according to precise objectives and principles. The games use procedures, language and graphics to create an emotional space that could trigger expressive responses and allows players to provide real emotional content.

#### Procedures:

Because our work place, the Interaction Design Institute Ivrea, is full of people from different countries who are away from home and who participate in long distance communication with loved ones on a daily basis we chose students, researchers, and staff of the Institute as our players. The same group of players has been maintained throughout the whole IF ONLY experience. The players are invited to play through 'invitation cards' containing instructions or recipes. The invitation cards are in some cases complemented with a 'comment card' or with a 'questionnaire' card containing specific questions about the experience created by the game. We decided to begin the IF ONLY experience by creating an effect of surprise, without announcing to the players the objectives and the source of the invitation. During a week game cards 'appeared' on the desks of the players each morning. The players would then leave the results on their desks the following morning from where they would 'disappear,' thus making the exchange of cards and results a game in itself. At the end of the week the 'mystery' was revealed during a collective meeting where we presented the project and lead a discussion about the overall experience and the specific games. The second set of games used the same modality, but with a smaller set of people. At this point the players were informed about the nature of the games. For the last session a group of five people has been selected to send abroad the game pieces and communicate over distance with their loved ones. These games will, as usual, be introduced by game cards. The outcomes of many of the games are objects and artefacts and a number of games will use these results as starting points.

#### Language:

Language is used to create an emotional atmosphere encouraging people to join in a playful game experience as opposed to being subjects of an experiment. Each card tells the players that they are invited to the game of '...'. Underneath there is an illustration that fits the goal and purpose of the particular game followed by the actual text. The text is divided into two parts; the first part is written as a narrative setting the game in context concluded with a key sentence in all caps, followed by the actual task or rule for the game. The language is second person addressing the players as 'you' and utilizing coaxing suggestive vocabulary. The coaxing tone invites the players to participate in a supportive manner without being prescriptive. The tone is deliberately remnant of the voice of an old fashioned hypnotiser, setting the scene of the session first by describing it and then allowing the 'hypnosis subject' to assume the role of protagonist and 'continue the story' with emotionally true content. The most important concepts are assessed in the first game where we tell the players that they are finding themselves in 'SmallTown', and we introduce the role of 'DistantOne'. Both SmallTown and the overall project name, FARAWAY, are suggestive expressions of the feeling of displacement and distance that we wanted to establish as the basis for the communication with 'DistantOne', the symbolic name for the loved one the player is communicating with. Other examples of 'renaming' include 'LittleYou', for a small self-representation of the player and consequently 'LittleOther' for another player's representation. Each of the games contains suggestive and metaphorical expressions used to re-qualify situations according to the principles of the emotional space. Similarly, objects from everyday life are introduced as platforms for projecting players' desires and fears. The overall narrative of the cards is episodic but continuous, so that they can be read in succession as an ongoing narrative. As each game task can be done in a number of different ways and these results can determine the direction of the following games, it can be said that the narrative is only partially predetermined and the player is free to build up a body of work during the sequence of the game.

#### Graphics:

Graphic style also contributed to building the emotional space of the games. The graphics drew from a turn of the century education style using simple line illustrations. The cards were printed on A6-sized cards. Certain games involved envelopes, questionnaires and different kinds of objects. All of the artefacts were produced in a similar and recognisable style. The same line is maintained in the third set of games, where the technical pieces and their packaging reflect principles of simplicity and emotional appeal.



### 3.3 GAME SET 1: INTRODUCING DISTANTONE

In general, the first set of games asks the players to communicate with a distant loved one. By collecting and analysing these communications instead of actually allowing them to be exchanged, the results are a series on one-way messages from the player.

In the following we introduce each game and the responses of the players.

#### GAME .01 THIS IS HOW I FEEL (emotions and distance)

Number of players: 27



fig.10 *game. 01*

This card initiates the IF ONLY games, as well as inviting the players to the first game. The card sets the context and mood and introduces DistantOne as the loved person with whom the player wants to communicate. The player is asked to identify an emotion she or he is experiencing, to express that emotion within the three-dimensional space of a Leone candy box, and to give it a name.

The objective of the game is to test people' willingness to play as well as generate an index of representations of emotions. The focus is on non-conventional modalities of expression, shapes and dimensions, levels of earnestness and intimacy.

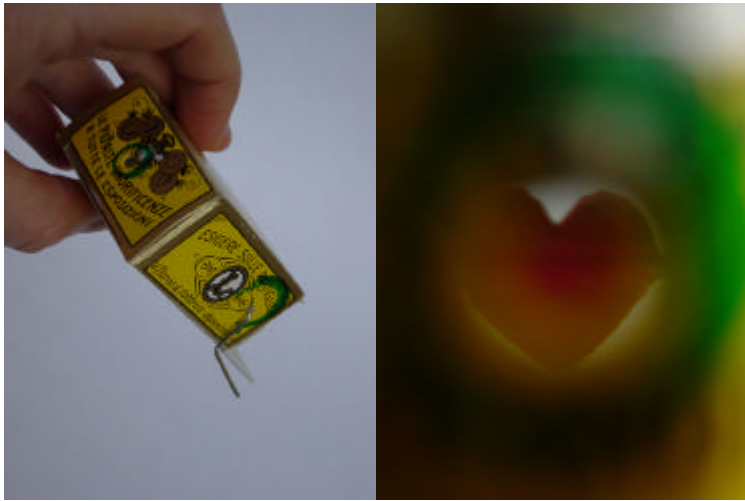


fig.11 'eye sun'



fig.12 'i can hear you'



fig.13 'ripe'

	LABELS	TEXT	SYMBOLIC OBJECT	TEXTURES/COLORS	EXPERIENCES
'invested'	X				
'...'	X				
'love'	X				
'oggs'	X				
'memories'	X				
'orange'	X				
'lost'	X				
'hmm'	X	X			
'...'		X			
'hope'	X	X			
'full of memory'	X	X		X	X
'supplement'	X	X		X	
'treasure'	X			X	
'longing'	X			X	
'melancholy'	X		X		
'ready to receive'	X		X		
'positivism'	X		X		
'I can still hear you'	X		X		
'charged'	X		X		
'...'					
'sehnsucht'	X			X	
'clearing'	X		X	X	
'calm'	X		X	X	
'red'			X	X	
'ripe'	X		X	X	
'I am relaxed'	X		X	X	X
'sun here/eye here'	X		X	X	X
'I still am'	X	X	X	X	X

fig.14 game.01 modalities

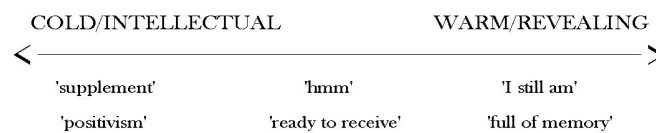


fig.15 game.01 cold/warm scale

## GAME .02 HEARTBEAT (uncontrollable body manifestations)

Number of players: 10



fig.16 *game.02*

The players of this game are given heart monitors and asked to play with them in groups. An envelope is provided for the collection of their findings about the experience. The structure of the game is open; the level and modality of participation are decided by the groups.

The objective of the game is to gain insight as to how the players perceive information about both their own and another's body state. Which kind of emotional and social consequences does this provoke? Do the players see a connection between heart rate and emotional states?



fig.17 *envelope*



fig.18 *heart doll*

Quotes from the game include:

'Hmm. It was not very comfortable. Interesting how the heart reacts to everything. I got a bit embarrassed though. Felt out of shape and started to think about running again. I remembered my bad heart condition I had a few years ago, No, playful but not fun. Felt like the other person had a weird power over you. 'I can read your heart''

'I'm doubtful its working without seeing the results of my own heartbeat. I feel stupid wearing the 'chest belt'. I wonder who is wearing the watch (looking at my heartbeat).'

'I didn't like being aware of my heart rate for an extended duration like thinking about it too much would make it stop.'

'The strap felt uncomfortable against my ribs and made me more aware of my breathing patterns than my beating heart.'

I realized how out of shape I have become. I reminded myself to exercise.'

'I am all happy till I notice/feel how my heart is doing... when I check my pulse or heart beat, I start comparing the heart with some kind of 'pump'... and pumps, like any other machine, fails once in a while. I hate monitoring my heart it reminds me of the ultimate truth. - but I am fine with the thumping sound of my heart after jogging. It reassures me 'I have exercised today''

Types of response:

- Discomfort: the strap is uncomfortable both physically and psychologically
- Being out of shape: the heart rate is directly translated into a fitness measure
- Fear: awareness of the heart is linked with awareness of death
- Care: the monitor feeling responsible for the monitee's emotional state
- Pure heart readings classified by time, activity and emotional state

### GAME .03 HERE I AM (one's own presence)

Number of players: 26



fig.19 *game.03*

The players are asked to think about how they see themselves and then to build small self-representations. There are no specific requirements as to how to perform the task, apart from a size constraint.

The objective of this game is to explore different modalities and styles in creating a symbolic self-representation. How do the players perceive their own presence and how do they translate this perception in something physical?



fig.20 *readymade*



fig.21 *abstract*



fig.22 *figurative*

	READYMADE	FIGURATIVE	SYMBOLIC	HIGH EFFORT	2D	3D
Juan					X	
Lina			X		X	
Helen	X		X		X	
Francesca	X				X	
Dianna	X	X			X	
Magnus		X			X	
Natasha		X			X	
Chris		X			X	
Jan					X	
Livia		X		X		X
Phyllis		X				X
Misel		X				X
Jeremy		X				X
Kim		X				X
Sergio		X				X
Franziska		X		X	X	X
Sujin		X		X	X	X
Silvia				X	X	X
Deepak		X	X	X	X	X
Jan-Christoph		X	X			X
Ryan	X		X			X
Casey	X		X			X
Rajesh	X		X			X
Shyama	X		X			X
Michael	X		X			X
Mario	X		X			X

fig.23 game.03 types

**GAME .04 TAKE ME WITH YOU (other's presence)**

Number of players: 17



fig.24 game.04



The players are asked to exchange and take care for each other's self-representation from the previous game. The couples of players exchanging objects are created randomly, in order to work independently of and minimize possible connections to any existing relationships. At the end of the game each player is given a questionnaire to compile.

The objective of this game is to test the ability of the LittleYou's to convey the presence of their creators. We are looking for levels of personification in the objects, the transfer of emotional meaning from the creator to the care-taker and the degree of ownership with both players.



fig.25 *caretaker I*



fig.26 *caretaker II*



fig.27 caretaker III

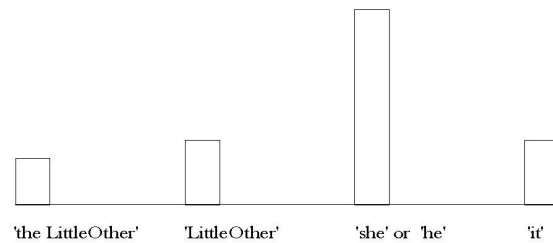


fig.28 game.04 levels of personification

Quotes from the game include:

LittleOther provided beauty. LittleOther was good company and also good style. (C.)

She is also stylish and a good personal stylist.(F.)

[LittleOther is] shy like the creator but I like it for this reason.

Through this little object I sort of find out that I actually do enjoy big S.'s company more than I had expected. (M.)

I was more attached to the LittleOther than LittleMe. I just my LittleMe and then spent the day with LittleOther. I actually forgot about LittleMe.(M.)

It is a sign of friendship (S.)

It didn't reflect directly R. as much as it is the country involved and the history. So I kind of didn't feel I knew more about him. (C.)

## GAME .05 HEART ON SLEEVE (emotions and symbols)

Number of players: 20



fig.29 *game.05*

The players are asked to consider their mood or emotional state and express it somehow through their clothing or general physical appearance for one day.

The objective of this game is to collect examples of wearable objects with strong personal meaning and explore the different emotions associated with them. As in game .01, we are interested in how the players physically represent an emotion.



fig.30 *sad and conflicted*



fig.31 sweater for love

	POSITIVE EMOTION	LOVE	ABSENCE	NEGATIVE EMOTION
a piece of clothing	1	2		1
an object carried every day		2	1	1
an object not normally worn	3		1	2
an object made for this day			2	1
2 D label or graphics	1			2
a body part			1	1

fig.32 game.05 table I

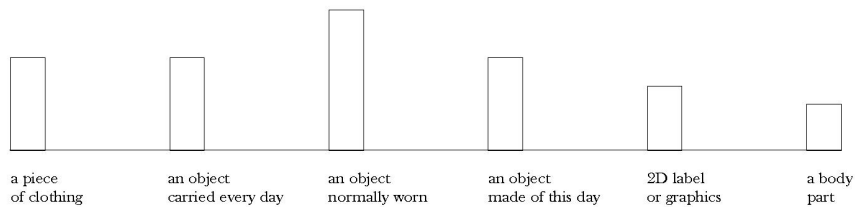


fig.33 game.05 table II

## CLOSING CEREMONY

Participants: 40

The first game series concluded with a group session involving interviews, open discussions, group games and comments. The session was opened by a presentation of the objectives and results of the games allowing the players to make sense out of their experience and providing them with a context for the discussion. Then we projected their responses to each game by asking specific questions. During these activities two classic surrealist games were played and a blank comment card was given to each participants.

The 'final ceremony' was a way to thank the participants, and capture additional feedback about the games. The whole evening was recorded on video and transcribed. This material was an important resource that allowed us to interpret and analyze the results of the games.

### 3.4 GAME SET 2: ARE YOU MY DISTANT ONE?

The second set of games includes a general survey on the players' communication habits and two games involving only a small group of players.

In these two games one group of players is again asked to produce messages for DistantOne. Although, this time another set of players is given the messages and told that they are coming from their loved person. In this way the second set of games are experiments with two-way communication.

In the following we introduce each game and the responses of the players.

#### THESE MODERN DAYS THINGS

Number of players: 9

Players are asked to record and comment on their use of different media in their communication with DistantOne for a period of 24 hours. They are each given a chart that facilitates this documentation. For each medium used, the players are asked to evaluate the sense of closeness and the level of emotional intensity they experienced on a scale from one to zero.

The objective is to obtain an overview of current communication practices and their perceived emotional qualities.

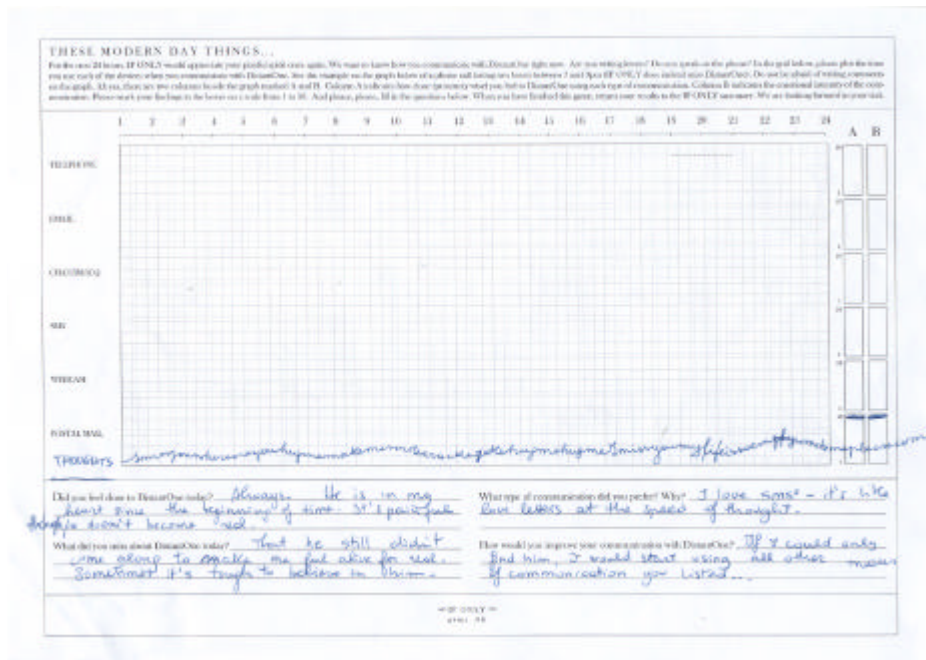


fig.34 thoughts of DistantOne

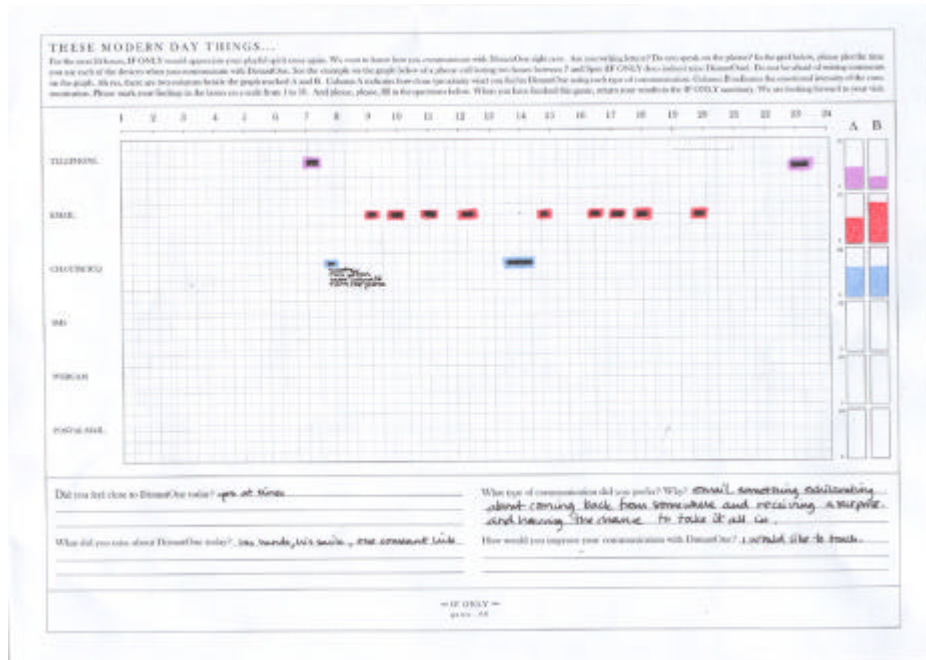


fig.35 wanting to touch

## SOUNDSCAPE

Number of players: 4 (2 pairs)

The game is split in two parts. One player is given a mini disc and asked to record 'soundscapes' for DistantOne during one day. The day after the recording is passed to a second player, together with a card encouraging him to believe that it is a message from DistantOne. At the end of the game each player is given a questionnaire to compile.

The objective is to test abstract sound as a channel of communication between loved ones.

## BLUSH

Number of players: 8 (4 pairs)

This game is in two halves as well. Invited participants are given white smocks and painting material and asked to imagine that they are able to access their distant one by painting gestures on this 'magical' medium. In the second part new participants are asked to wear the smock and imagine it carries an expression from DistantOne. At the end of the game each player is given a questionnaire to compile.

The objective is to capture gesture and explore it as a mean to convey emotional content over distance.



fig.36 *sending*



fig.37 *recieving*

### 3.5 INSTRUMENTS FOR NAVIGATING THE EMOTIONAL SPACE

The first two sets of IF ONLY games were conducted within the context of a fictional reality. People were asked to create and play with artefacts in a make-believe world using existing low or no-tech means. DistantOne was incorporated in this context, however the link between the player and DistantOne was fictitious.

The third set of games introduces a new element, connecting each player to their actual DistantOne with simple technology. The idea, this time, is to explore modes of interaction with couples inside their shared emotional space. Since the experiences created through the previous games were confined to existing and ready-made technologies, in this round, our aim is to introduce pieces incorporating technology designed specifically to allow players to interact with one another in reality. This set of games will be played with people in real long distance relationships.

For this purpose we designed 5 sets of games pieces. Most of the game sets consist of two pieces, allowing players to play simultaneously, however, one set, which acts as a placebo, has one piece but involves both players in and is focused on an exchange procedure. All set of games are designed so that couples can play together. The IF ONLY exploratory pieces are physical objects but remain as abstract entities. The games are based both on the conceptual model of emotional space as well as elements of results that emerged from the previous games. The games are designed as tools for providing people in intimate relationships with a physical representation of their presence inside the shared immaterial emotional space. In other words, the game pieces are instruments for accessing, navigating and interacting inside the emotional space created by an intimate relationship.

We were particularly interested in the communication mechanisms and in the role that different metaphors could play in establishing the sense of presence as well as the emotional responses of the players. Each of the five sets of games explores a simple long-distance interaction model and different configurations of communication variables including: modalities of production, transmission and reception, direction, timing and mapping. Within this general framework, we included specific concepts reflecting the previous steps of our research. At a general level, the whole set appeals to the concept of symbolic investment and ritual. Thanks to the exchange procedure, the pieces are intended to become symbolic objects connecting people who are physically distant but emotionally close. Some of the pieces explore the depths of symbolic mechanisms, while others are more focused on how body manifestations of emotions, both controllable and uncontrollable, can communicate a sense of presence.

The pieces are physical wireless devices connecting two remote locations. We intentionally used basic and simple technology to keep focus on the conceptual models themselves rather than on form factors and advanced technologies. The function of the pieces or the 'beans' is to explore patterns of behaviour and modes of use of the players involved, as well as gaining insight about their desire to communicate with distant loved ones.

Emotion is an unconscious process. One knows, generally, that one has an emotion; one does not always know why. Emotional experience plays an important role in the development of emotional response and is an important aspect of that response.  
(Frijda 1987:464)

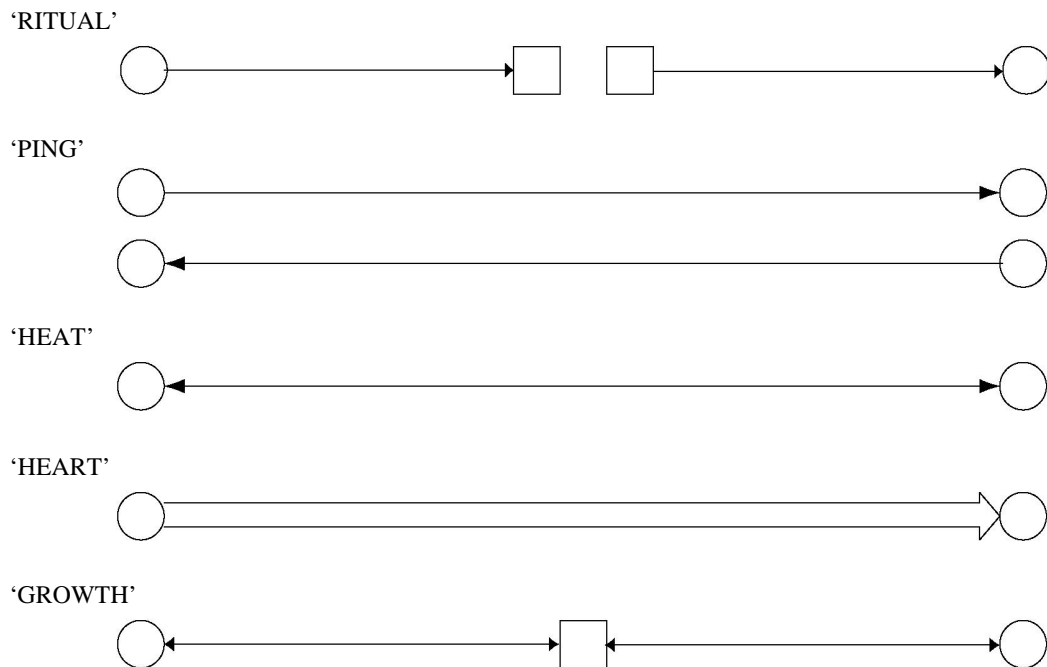
The pieces are a bean-like shape because of its organic appeal and its lack of specific connotations. The form of the 'beans' has been designed coherently with the IF ONLY stylistic requirements. Their simple but suggestive aesthetic and sensorial qualities are intended to reinforce the process of emotional and symbolic investment. The beans are sewn in two layers of white fabric that houses the electronic components. The electronics are padded to provide a soft touch and distinguish the objects from traditional electronic devices. The players' involvement with the pieces will be conducted as games, using the same style of the previous IF ONLY games. DistantOne will receive the 'bean' from someone she/he loves together with a game card and the couple will play with the pieces for a limited amount of time. The game environment is meant to encourage this symbolic investment.



Performing the third set of games is our objective for a further phase of the project.

### 3.6 GAME SET 3: COMMUNICATING WITH DISTANTONE

In the last games involving the game-pieces we are facilitating communication between real couples. Each piece contains a Basic Stamp 2 microcontroller, a Radiometrix FM 433MHz transmitter (299-3437) and/or receiver (299-3465), a combination of switches and runs off a rechargeable 9V battery, apart from 'Heat' which runs off 12 volts. In the following we introduce a general index of the interaction models of the different 'beans' (fig.38) and a description of each pair.



	PRODUCTION	TRANSMISSION		RECEPTION		DIRECTION	TIMING	MAPPING
RITUAL	voluntary	n/a	n/a	n/a	sporadic	mono	delay	n/a
PING	voluntary	active	sporadic	passive	passive	bi	real time	heterogeneous
HEAT	voluntary	active	sporadic	active	active	bi	real time	heterogeneous
HEART	involuntary	passive	continuous	active	active	mono	real time	n/a
GROWTH	voluntary	active	sporadic	passive	passive	bi	real time	homogeneous

fig.38

**'Ritual'. *You gave me this***

Giving and receiving are part of the rules of the emotional world. The emotional world is full of words, gifts, gestures, and secrets that its inhabitants exchange over time. When loved ones parts, these gifts remain as symbols recalling the presence of the other person.

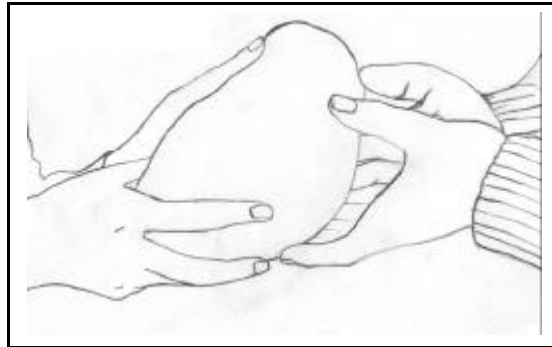


fig.39

'RITUAL' (fig.39-40) allowing a player to put a part of her/himself into a gift for DistantOne.

The 'RITUAL' piece is activated and invested with symbolic meaning by the sender (player 1) and then given to the receiver (player 2) who will have it in a fixed state (on). As the input modality the first players are given the opportunity to put artefacts of their choice inside the bean. These secret artefacts are attributed to the bean in order to symbolically invest the bean with the presence of player 1. The beans are then sent to DistantOne (player 2), who takes care of the bean for one week. Although player 2 is unaware of what is inside of the bean, they do know that player 1 has placed a secret object inside.

'RITUAL' is entirely based on the concept of symbolic investment, without communication channels. The purpose of this game is to determine how the ritual of exchange and symbolic investment can relay the presence of another person. We are interested in understanding whether this investment will increase DistantOne's perception the other person, enhancing the projection of the other's presence into it.

'RITUAL' requires no technology and is still partially connected to the world of make believe in that its success is based on whether player 2 maintains the belief that the presence of player 1 is inside of the bean. The object or 'bean's' behaviour remains simple as a placebo for this game set.



fig. 40

### **'Ping'. I'm on**

It is a common saying in many countries that someone is thinking of you when your ears are burning, or, in the Italian version, 'buzzing'. 'PING' is a tangible translation of this.

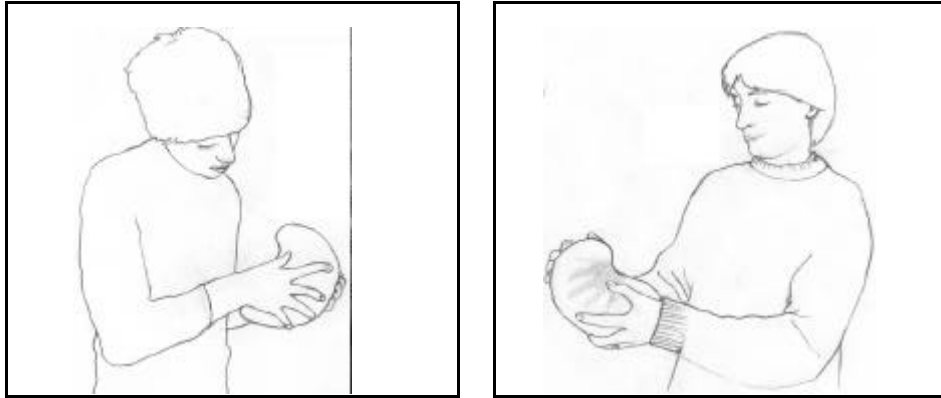


fig.41

With 'PING' (fig.41-42) we introduce a communication channel into the shared emotional space. It allows distant loved ones to be aware of the other's presence in their shared emotional space and to reply in the same or in another way.

Like all of the pieces in this game set, this game involves two players.

Both players are able to send a message through the 'beans' via a simple gesture; by activating a (Quantum Q111D) touch sensor on her/his bean, the sender turns on a light on the other's 'bean'. There are several pairs of sensors corresponding to light pairs on the 'beans'.

'PING' uses the simplest of interactions; sending a 'ping' is saying: I am here; I am thinking of you. In this game, we want to observe how this simple kind of message is used and interpreted within the couple. The presence of multiple sensor-light pairs also opens the possibility for the players to develop a secret language based on gesture.



fig. 42

**'Heat'. I'm on; you are on**

Sometimes, when people feel exceptionally close to one another, they believe they are able communicate across space with their mind. This simultaneous existence in the emotional space, or thought transference, can only happen in a very strong relationship.

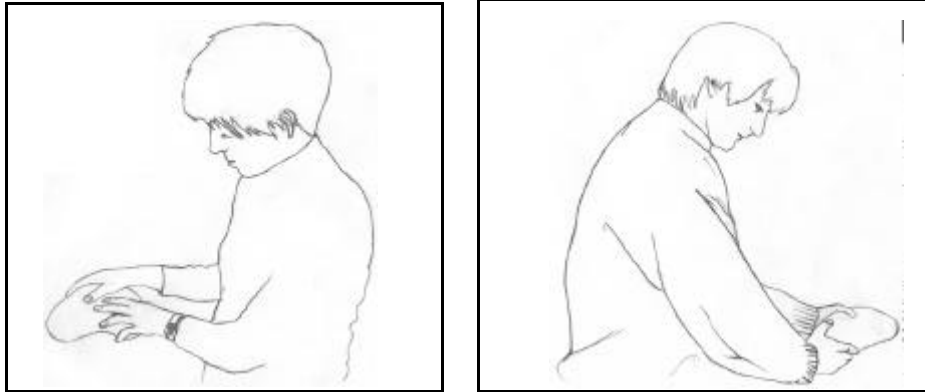


fig.43

With 'HEAT' the players can experience the warmth of DistantOne's presence in a 'magical' way.

'HEAT' (fig.43-44) touches upon concepts of co-presence and synchronous interaction as well as on the cultural connotations of heat in affective relationships. Heat is not only the product of a physical contact between two persons but also another common metaphor for intimacy. Love, joy and happiness are typically described in terms of warmth.

Just a nice warm feeling, nice sort of glow all over, positive thoughts about everything  
(Lupton 1988: 83)

Similar to 'PING' the sender activates the 'bean' by touch using a (Quantum Q111D) touch sensor, however the output is the receiver's 'bean' heating up using a (RS 245-499) heat pad. Because heat cannot be perceived environmentally, the receiver has to touch the piece in order to receive, and so receiving is the same as transmitting. Both players have to actively perform a gesture in order to communicate. This creates a particular form of interaction, where the other's presence can only be perceived when both the players are co-present into the emotional space.

Through 'HEAT' we aim at testing the reactions of players to this magic-like model of communication. People's experience with this 'bean' will provide insight into the emotional affordance of heat and its capacity to sensorially convey the presence of a person.



fig. 44

### ***'Heart' You're always on***

Most people throughout the world agree that the heart as the seat of emotions. Ayurveda, the ancient Indian system of medicine, calls the heart the 'powerhouse', the only place we can feel the emotions that arise throughout the body. A heart is also the symbol of love and lovers' relationship.



fig.45

'HEART' (fig.45-46) allows a person to share the language of her/his heart with a lover, a friend, a relative.

In this game, player 1's heart rate is constantly transmitted to player 2. Player 2, or the receiver, has to 'listen' to her/his 'bean' in order to hear and feel the movement of Player 1's heart through a speaker. 'HEART' is turned on only once and from then on the channel is open.

'HEART' explores the possibility of transmitting of a vital sign as a conveyer of presence. We are interested in surveying the emotional and behavioural responses of the couple, in order to understand the potential of this kind of communication. How will the heart's language be interpreted? Which kind of effects will it have on communication practices within the couple? How will constantly receiving this information affect people's every-day life?



fig.46

***'Growth'. We are building this together***

In relationships both individuals are active participants in order for the relationship to thrive or grow. In a sense, affective relationships are like plants. They need both care and attention. Relationships are 'built,' 'maintained' or 'strengthened' and can also 'break down' or 'fall apart.'



fig.47

'GROWTH' (fig.47-48) is a metaphor of the shared emotional space, which is actively built and modified by the couple. In this game the couple enters into a partnership with one another.

The rules of interaction are similar to the 'PING', but the effects of the players' actions are cumulative and homogeneous. Each time one of the players actively inputs to her/his 'bean' (by talking to it), both 'beans' achieve a new level of activation (more lights are turned on). The pair of 'beans' mirrors the communal effort of the players. Each 'GROWTH' piece contains a capsule microphone and 20 3mm ultra bright white lights.

This opens a variety of possibilities in terms of contribution of the individual participants to the game and of the variety of patterns that can be created. How can sharing the task of caring increase sensing closer to another person? Can working together decrease the distance in the shared emotional space? Will the game engender collaboration or competition between the players?



fig.48

## 4. Analysis

### 4.1 GAMES, SYMBOLS AND RITUALS

This section draws some conclusions about the first two sets of games.

Deciding how to use other people's experience in a design project is a critical issue. One option typically chosen in the academic environment is to formulate precise hypothesis, and, following precise rules, see how many results confirm them and how many disconfirm. A different approach commonly adopted by designers and artists, is to use the results as a source of inspiration, without necessarily making explicit why something inspired something else.

What follows is an in-between solution, or, more simply, a third way. Everything we will say about the results of game sets 1 and 2 is filtered by our personal interpretations but based on what really happened. We had some intuitions, we designed and created the games, we watched people play, we observed the objects they gave us back, we heard and read their comments, we asked questions and facilitated a collective discussion, we transcribed it, we talked amongst our selves and with other people. All of this generated a lot of emotions and ideas.

Because of the intimate nature of many of the responses that we got from the players, some of them will not be quoted in the following discussion.

#### **The power of the games**

The first general observation to make is that the players genuinely enjoyed playing the games. These are very busy people and discovering that so many of them not only participated but also had a good time doing so, was for us a positive surprise. This also made it possible for us to collect a wide and diverse collection of content.

The level of participation was surprisingly high; especially considering that we didn't make any agreement with the players beforehand or put any pressure on them to continue to play. We offered no money or reward incentive to the participants. For the first set we estimate that about 38 different people of the 44 that we invited played at least one of the games. A similar proportion of participation applies both to the students/researchers (29 out of 32) and the staff (8 out of 12). Furthermore, all the 12 players that were asked to play the second set of games responded positively to the invitation. It was evident that playing was fun just by observing people during the different experiences or talking with them informally. Yet more explicit confirmations came from the comments expressed by the players' at the end of the first set of games, both in the Closing Ceremony and in the 'comment cards'. Examples of feedbacks from these two sources are:

Everything was beautiful and cool! (M.)  
I think we should repeat something like that (D.)  
It was fun. Later games may be interesting (C.)

Both the level of participation in the two sets of games and the comments expressed by the players throughout the games are evidence of a general positive attitude. It is also interesting to note that no players ever 'boycotted' the games, refused to participate, subverted the rules or criticised them. They did not complain about time infringement; on the contrary, for many of the players the games seemed to be a good way to use their energy.

The first day I was a bit nervous, I was like 'oh no, nothing that takes any time, I'm so stressed' and then I was 'I like that it takes some time' because the time it took was as much as I gave it and I needed to give it so much time. (L.)

Considering the problems that involving users in a design project can raise in terms of budget, resources and real participation, these kinds of responses can already be considered as evidence of success.

It is difficult to isolate the single factors that contributed in making the first two set of if only games a pleasant and largely shared experience. Though, it is conceivable that both the game format and the style used played a relevant role. For some people however it was initially difficult to be involved without knowing anything about the source and the nature of the games, while for others the surprise has been taken as an additional motivation.

It was a strange experience. At the beginning I didn't know what you wanted. (C.)

Vs.

What it was fun about it is that it was just out of the blue. It was so magical. (R.)

Another important element is the emotional participation that we obtained from the players. Coherently with our objectives, the games were successful in making people 'suspend their disbelief', 'enter the emotional space' and actively act and react within it. This emotional participation was high and progressively augmented throughout the games. Already in the first game many of the responses contained strong and revealing content. Examples of this are 'I'm still here' and 'Full of memory'. This is in contrast to other answers that at this point were still 'cold' and protective about the personal sphere. Examples of this are 'hmmm...' and '...'. As time went by, the IF ONLY style became the more and more familiar for the players and the immersion more complete. The key moment in this process was probably game .04, where people were asked to take care of another player's LittleYou. This game, which most players consider the best one, triggered a very strong participation, not only in numerical terms, but also, and most importantly, on the intensity level. During the whole day, the LittleOthers captured the attention of the players and were central to their conversations and interactions in general (see game 04 pictures). Furthermore, 'Take me with You' represented a breaking point in the process of appropriation of the IF ONLY language. Both in the 'comment cards' and in the informal conversations between the players the words 'LittleYou' and 'LittleOther' are recurrently used; LittleYou and LittleOthers rapidly became recognised characters of a common imaginary world.

The LittleOther is with me for dinner, We will be back soon. Don't worry. (M.'s post-it)

Probably one of the reasons of success for this game is its social nature. It is conceivable that for the group of players to interact with each other within the IF ONLY context facilitated the collective immersion into the emotional space. We will return on game .04 later in this chapter.

More individual, but still very strong, is the kind of emotional involvement engendered by 'Heart on Sleeve' as well as the games from the second set, 'Blush' and 'Soundscape'. In these cases the players were asked to share very private content with us, by revealing the emotional significance of an item of clothing or producing a message for DistantOne. In all these cases the responses were impressive in terms of emotional involvement and sincerity. In 'Heart on Sleeve' we saw watches, sweaters, rings, cotton buds etc, all related to intimate events and relationships. Even more personal were the communications with DistantOne in the second set of games. One of the players of 'Soundscape' recorded her voice for several hours, sharing with her imaginary DistantOne very personal thoughts. All the players of 'Blush' spent a reasonable amount of time (about 15 minutes each) in painting their shirts and carefully designing their message for their loved ones. The comment cards for this game are extremely revealing about the feelings that the players were trying to express:

My happiness when I think about him (S.)

Memories of the past. Scenes from our story. (M.)

The methodology adopted by FARAWAY not only seemed to succeed in creating experiences in the emotional space, but the theme we chose to explore also appears to be relevant and appealing if not for everybody at least for the involved users.



In the following sections we will outline more specifically our interpretation of the results from the first and second set of games.

### **The props of the emotional space**

The collection of objects from games .01 and .05 are examples of props populating the emotional spaces of different people. Viewing this collection, it seems that anything can be used to express an emotion. Maybe this is not a striking finding, but it is impressively true. Both game .01 and .05 generated an incredible variety of responses. The players of the first game put written texts, colours, textures, images, objects, combinations of objects, etc. in their boxes; others created a suggestive experience for their DistantOnes by providing them with tools to interact with. In the same way wearable emotions (game .05) included decorations, normal clothes, objects normally worn or designed on purpose, 2D and graphics, parts of the body reinterpreted ad hoc.

Surprisingly, a task people found difficult was generating a verbal description for the represented emotion.

I got a little frustrated trying to resolve the complexity of it in a single word. (C.)

I found choosing a word to describe what I felt was very standard, I mean, it was impossible. (A.)

Words are normally considered as a natural and effective way to communicate to someone else how or what we feel. Our games outlined how many other media can be equally (and sometimes more) powerful in translating our inner states into a message.

### **A sweater for love (A.)**

Feelings and sensing presence are strongly connected. Most of the responses to game .05 were related to a distant loved person, even if the instructions didn't mention DistantOne as the addressee. Wearable emotions were in fact only accessible (viewable) by physically present people.

Emotions from love to sensing absence recurred in the players' responses, implying a connection with someone they were separated from. This was particularly evident for the players who didn't produce a particular item for the game. Several people were wearing or carrying with them objects or pieces of clothing related to their lovers and relatives, independent of the game: hats for friendship, watches for nostalgia, photos, rings and sweaters for love. These objects of affection are elements of the emotional space; they create a connection with the person we share the emotional space with and, in different ways, they convey her/his presence in the other spaces we live within.

### **Going for dinner with 'LittleOther' (M.)**

The games also revealed the nature and the qualities of objects as conveyers of presence. The results from game .04 show a high level of personification in the way the players refer to the 'LittleOther'. Besides the use of 'her or him' (see game .04' results), this attitude is generally reflected in the answers to the questionnaires and in the collective discussion. The 'LittleOthers' are perceived as live entities and in many cases the players explicitly project the qualities of their creators onto them.

I felt like if I was with someone all the time (R.)

He's fragile so I feel very protective of him (K.)

[LittleOther is] shy like the creator but I like it for this reason. (S.)

This process of projection strongly interacts with the nature of the relationship between the caretaker and the creator of the object. Because the couples were created randomly, the mapping between the players didn't necessarily match the existing levels of closeness and intimacy in their everyday relations. Most of the time this wasn't perceived by the caretakers as a problem, but, instead, as a way to get to know the person they had been assigned to better.

Through this little object I sort of find out that I actually do enjoy big S.'s comp any more than I had expected. (M.)

In the above case the 'power' of the LittleOther went beyond the purposes of the games, by mediating an interesting social interaction between the two players during both the day of the testing and at the 'Closing Ceremony'.

How you made it? Very fast, I think. And like wrapped it from the heart and that's is not the way you normally work. I would like to encourage you to do it more because I was immediately taken away by the way you did it. (M.)

For other players this level of projection was more or less problematic with respect to the actual relationship with the creator.

These LittleYous Or LittleMes are quite revealing and so..I think it probably works better with the right person. (J.)

I thought that this was mo re fun but maybe it would be more relaxing with somebody I know. (L.)

Other interesting aspects emerging from game .04 concern the level of attachment to the 'LittleOthers' and its relationship with the emotional and personal effort employed by the creators in building the 'LittleYous' (game .03).

According to the questionnaires, 13 players out of 17 didn't want to part with LittleOther. In these cases, the other person's representation was much more important than their own (game .03) and the separation at the end of the day was perceived as a loss.

If it's possible to keep her that would be perfect (F.)

I was more attached to the LittleOther than LittleMe. I just made my LittleMe and then spent the day with LittleOther. I actually forgot about LittleMe (M.)

The lack of emotional meaning invested in the object was quoted by a couple of players as a discriminating factor in not feeling sorry for giving back the other's self-representation.

It didn't reflect directly R. as much as it is the country involved and the history. So I kind of didn't feel I knew more about him. (C.)

At the opposite end, the aesthetical qualities of the object were mentioned by some players amongst the qualities of their 'LittleYous'.

LittleOther provided beauty.  
LittleOther was good company and also good style (C.)

She is also stylish and a good personal stylist (F.)

In conclusion, games .03 and .04, confirmed the power of the objects as presence's vessels and pointed out a series of interesting mechanisms in the processes of personification and emotional attachment.

At a general level the objects created during game .03 were extremely successful in provoking emotional reactions and interactions within the emotional space in game .04.

The effort in creating the vessel, both in emotional and aesthetic terms seems to play a role in facilitating the transfer. The self-representations also showed a surprisingly strong power in reflecting, mediating, reinforcing, or modifying the nature of the emotional relationships between people.

#### **‘When it comes from a live person it’s a symbolic thing’ (D.)**

The comment of one player quoted in the title is emblematic with respect to the process described in the previous section. Independently from the individual attitudes, the great majority of the players were able to attribute a strong affective value to a variety of simple and often very abstract products.

Even more than the personal relationships and the qualities of the objects the crucial role in the presence attribution seems to be played by the ritual of the exchange itself. We believe that it is this ritual that allows the object to acquire an emotional and symbolic meaning. Because ‘it comes from a live person’ the ‘LittleOther’ itself becomes live. Once given its symbolic meaning the object continues to transmit the presence of the other.

As we have seen in the first part of the book, the ritual can be both public and very personal. The game suggests that a simple gift exchange can be enough.

#### **Stressed or out of shape?**

The results of game .02 point to another aspect of the emotional experience of the IF ONLY games. Here, the players were given heartbeat monitors and asked to use them either individually or in couples. Most of them monitored themselves; only 4 players split in couples and monitored each other.

The typical responses of the individual players were graphs or reports on their different values during the day or according to the activity they were engaged in. The interpretation of the physiological data is focused on health; the players monitoring themselves showed worry about their physical condition.

Within the couples the physiological information is more associated with emotional states than to one’s state of health. For the players who monitored each other there was a tendency for the monitor to feel responsible for the monitee’s emotional state and general well being.

Question: How did you feel while knowing that you were monitoring?

L: I felt responsible for her because W neglected one of her questions and then her pulse got up to 93.

Question: You felt that it was your responsibility?

L: Yes, ....

Although the results of this experience are pretty limited, they suggest that accessing information about body states can provoke strong emotional response. Even more interesting is the different interpretation given by individual and paired players and the strong emotional value given by the latter to this kind of data.

#### **The medium and the message**

Due to the absence of a real working two-way communication channel, both the games of 'Blush' and 'Soundscape' mimic this channel, thus making sending and receiving two completely different activities. This difference is reflected by the results of the games, which are divided into two distinct groups.

The players who produced the message were generally happy to express themselves in alternative modes. Both sound and gesture/painting allowed them to address DistantOne with rich and intensive modalities of communication.

Question: do you think that you were able to express what you were feeling through gesture?  
Yes, to tap the back of one's friend in the Canaries means that you are willing to support them.  
(V./'Blush')

Question: Do you feel closer to distant one?  
Very. I knew he knows how I feel about things, so I did not give any explanations.  
(S./'Soundscape')

A very different set of reactions was generated by the receivers of the message. Two of the 'Blush' receivers and both the 'Soundscape' receivers explicitly and independently raised the question of identification.

Question: How did you feel wearing DistantOne's expression?  
Good for the first 30 minutes; than I discovered that was not my DistantOne (F./'Blush')

Question: How did you feel listening to the sounds?  
Who is the DistantOne? Where is DistantOne now (K./'Soundscape')

Question: Did you feel closer to distant one?  
Yes, but also strange. Like a secret lover. An admirer. (K./'Soundscape')

This have been a very meaningful exercise if it was with sounds from my wife (C.)

Our conclusion is that the expressive power and the accuracy of the medium were in fact an obstacle to the 'suspension of disbelief'; the message from the imaginary DistantOne identified the sender as being different from the real DistantOne.

## 4.2 EXPECTED OUTCOMES

Our game based methodology has already provided us with valuable information about sharing emotion over distance as well as ideas about presence and symbolic investment. We believe the results from our third set of games will generate additional useful data that we can use in order to transform these game pieces into viable products and/or services.

Each set of 'beans' provides a potential canvas for new communication patterns. The interactions are deliberately designed leaving space for the players to choose or invent their own personal 'mode of use'. By letting people experiment with the 'beans' those patterns can evolve in a number of interesting ways.

In the end, we are looking for emergence and evolution of the following:

### SUSPENSION OF DISBELIEF

Although this time the players will interact with their real loved ones, the new games still require a certain level of immersion. Will the people 'believe' in the beans? Will people enter into a shared emotional space using the beans? Will they be sad to let them go?

### PROJECTION OF PRESENCE

Like for the other games, we are interested in assessing the power of the new games in conveying a sense of presence, decreasing the perception of distance. How will the qualities of each set of beans eventually transfer the presence of the other? To what extent will the bean be associated with the other person? Or will the bean be considered as an entity in itself?

#### LEVELS OF OWNERSHIP AND AFFECTION

The exploratory pieces are intended to stimulate people's symbolic investment and emotional attachment. Through the playing of the games we will be able to evaluate players' behaviours and attitudes in this respect.

#### LANGUAGE

We intentionally excluded verbal language from our investigations. By introducing under-codified messages (light, heat, heartbeat etc), we are expecting the creation of new languages. Through the beans, we are providing a vocabulary and we expect that the players will invent the rules or the grammar.

#### BEHAVIOURAL PATTERNS

The different variables incorporated in each set of 'beans' change the level of effort needed for the players to be engaged in communication from one set of beans to the next. If for HEART it takes effort on the part of the receiver, both PING and GROWTH, demand effort in order to send a message, while in HEAT both sending and receiving requires effort. The homogeneous output of GROWTH also implies cooperation in order to reach the maximum level of activation. All these mechanisms might engender various behavioural patterns between the two players in the couple, depending on the willingness of each player to contribute to the exchange.

#### RITUALS

An emergence of ceremonials or routines may occur within the couple. These might include the moment of use of the 'Bean' (e.g. a particular hour), the place (a particular location), the frequency (how many times per day), etc.

#### INTERACTION WITH OTHER TRADITIONAL MEANS OF COMMUNICATION

Will the beans be used separately in a self-sufficient emotional space or will interact with the others? We can imagine that other kinds of communication will be used to compliment a session with the beans. An sms can comment on a bean 'session', the beans can close or follow up a phone call or e-mail or the bean and another communication device can be used simultaneously.

#### RE-DEFINITION OF FUNCTIONALITY

The 'beans' could be used in unexpected ways eventually. For example players might choose to send other kinds of messages rather than communicating feelings, modify the appearance of a 'Bean', develop other functionalities, etc.

#### EMOTIONAL QUALITIES ABOUT FORM

Will the players comment on the bean's physical appearance, sensorial qualities, size, etc? Will the size and sensorial qualities affect role of objects for the involved players?

#### EXPLORATION OF CONTEXT

Issues of privacy and public behaviours may become relevant factors of the game. Where will the players take their beans? Will the 'beans' stay in the private sphere or travel to work? And if they do travel to work will they be on the desk or stay inside the player's bag?

#### LEVEL OF IDENTIFICATION

An open issue concerns the role of the media richness in allowing the receiver to recognise the identity of the sender. Is the media strong enough for the players to be able to recognise their DistantOne? This question, also raised in the second set of games, will be answered by letting the players interact with their real loved ones.

## 5. The Future of DistantOne

This is the end of the paper but not the end of the story of DistantOne.

There are many possible evolutions and applications for the research contained in this book.

The conceptual investigations of the first part are a potential source of information and ideas for both practitioners and researchers, inside and outside the field of interaction design.

The IF ONLY games are a methodological tool for user survey and testing that could be applied to different design fields, both in commercial and educational settings.

And then there is FARAWAY itself.

Through the game sets 1 and 2 we already learned a lot about DistantOne and the different ways people can perceive, represent, wish to communicate with their loved one.

We believe that results from the third set of games will provide substantial information and otherwise unavailable user feedback about how real DistantOnes can interact with each other over real distance.

This information could inform further steps in different ways.

It may contribute to the creation of new modes of thoughts about interaction design but also evolve into real and concrete applications:

These results might be used to enhance existing communication means through new services and new functionalities: enrich e-mails with physiological data (as a fingerprint), add new interaction modalities to a telephone (sharing images and sounds with DistantOne), augment sms services with sensorial information (heat, light, sounds).

The 'Beans' could also become completely new products. Some of their functionalities might be incorporated in pieces of furniture (displaying DistantOne emotional states), wearables (a clothing to share gestures), linen (a blanket that transfers heat).

Although this research has been geared towards people in affective relationships such as lovers, parents and children etc., it may also aid in the creation of tools for both mentally and physically disabled users including the deaf, blind and autistic as well as contribute to communication accessibility for older generations.

And, of course, we still have a lot of new game cards up our sleeves.

## 6. References

- Brave, S., Dahely, A. (1997). InTouch: A medium for Haptic Interpersonal Communication. In *Extended Abstracts of CHI '97*. ACM Press, pp. 22-27.
- Breathe. <http://www.telefonica.es/fat/vida4/premio/ebreathe.html>
- Buchenau, M., Fulton, J. (2000) Experience Prototyping. In *Proceedings of DIS '00*, ACM Press, pp. 424-433.
- Chang, A., Koerner, B., Resner, B., Wang, X. (2001). Lumitouch: An Emotional Communication Device. In *Extended Abstracts of CHI '01*, ACM Press, pp. 313-314.
- Chang, A., O'Modhrain, R., Jacob, E., Gunther, Ishii, H. (2002). ComTouch: Design of a Vibrotactile Communication Device. In *Proceedings of DIS '02*, ACM Press. (in press).
- Channel, J. (1997). 'I Just Called to Say I Love You': Love and Desire on the Telephone. In K. Harvey & C. Shalom (eds.), *Language and Desire*. London: Routledge.
- Coleridge, S. T. (1817). *Biographia Literaria; or Biographical Sketches of my Literary Life and Opinions*. London: Rest Fenner.
- Damasio, A. (1994). *Descartes' Error: Emotion, Reason and the Human Brain*. New York: Avon Books
- Dodge, C. (1997). The Bed: A Medium for Intimate Communication. In *Extended Abstracts of CHI '97*, ACM Press, pp. 371-372.
- Dunne, A., Raby, F. (1994). Fields and Thresholds. In *Proceedings of Doors of Perception-2*, [www.mediamatic.nl/doors/Doors2/DunRab/DunRab-Doors2-E.html](http://www.mediamatic.nl/doors/Doors2/DunRab/DunRab-Doors2-E.html).
- Eco, U. (1976). *A Theory of Semiotics*. Bloomington: Indiana University Press.
- Fogg, B., Cutler, L. D., Arnold, P., Eisbach, C. (1998). HandJive: A device for interpersonal haptic entertainment. In *Proceedings of CHI '98*, ACM Press, pp. 57-64.
- Frijda, N. H. (1987). *The Emotions: Studies in Emotional and Social Interaction*. Cambridge, MA: Cambridge University Press.
- Gaver, B., Dunne, T., Pacenti, E. (1999). Cultural Probes. *Interactions*, jan-feb '02, pp. 21-29.
- Gooding, M. (ed.), (1995). *A Book of Surrealist Games*. Boston, MA: Shambhala Redstone Editions.
- Greimas, A. (1987). *On Meaning: Selected Writings in Semiotic Theory*. London: Frances Pinter.
- Heller, Rabbi Dov. [www.kosherwedding.com](http://www.kosherwedding.com)
- Hofmeester, K., De Charon, E. (eds.) (1997). *Presence: New Media for Older People*. Available at Helen Hamlyn Research Centre, London.
- Jackobson, R. (1960). Closing statements. In Seboek (ed.) *Style in language*. Cambridge, MA: M.I.T. Press.
- Kovecses, Z. (2000). *Metaphor and Emotion: Language, Culture and Body in Human Feeling*. Cambridge: Cambridge University Press.

Levy, J. (1936) Surrealism. New York: Black Sun Press.

Lovegety. <http://www6.cnn.com/WORLD/asiapcf/9806/07/fringe/japan.lovegety/>  
<http://www.wired.com/news/culture/0,1284,12899,00.html>

Lupton, Deborah (1998). Going with the flow: some central discourses in conceptualizing and articulating the embodiments of emotional states. In S. Nettleton & J. Watson (eds.), *The Body in Everyday Life*. London:Routledge.

Mateas, M. (2001). A Preliminary Poetics for Interactive Drama and Games. In *Proceedings of SIGGRAPH '01*, ACM Press.

Murray, J. (1998). *Hamlet on the Holodeck*. Cambridge, MA: MIT Press.

Palmquist, S. *The Tree of Philosophy: A course of introductory lectures for beginning students of philosophy*, <http://www.hkbu.edu.hk/~ppp/tp4/top11.html>

Peirce, C, S, (1931-58). *Collected Writings*. Edited by Charles Hartshorne, Paul Weiss & Arthur W Burks. Cambridge, MA: Harvard University Press.

Picard, R. (1997). *Affective Computing*. Cambridge, MA: MIT Press. <http://affect.media.mit.edu/>

Schiphorst, Thecla. [http://www.iamas.ac.jp/interaction/i97/artist\\_Schiphorst.html](http://www.iamas.ac.jp/interaction/i97/artist_Schiphorst.html)

Shannon., C.E., and Weaver, W. (1949). *A Mathematical Model of Communication*. Urbana, IL: University of Illinois Press.

Soulselfhelp. [www.soulselfhelp.on.ca](http://www.soulselfhelp.on.ca)

Stelarc. <http://www.stelarc.va.com.au/>

Stewart, S. (1993). *On Longing: Narrative of the Miniature, the Gigantic, the Souvenir, the Collection..* Durham: Duke University Press.

Strong, R., Gaver, B. (1996). Feather, Scent, Shaker: Supporting Simple Intimacy. In *Poster Proceedings of CSCW '96*, ACM Press, pp. 29-30.

Svanaes, D., Verplank, W. (2000): In Search of Metaphors for Tangible User Interfaces. In *Proceedings of DARE '00*, ACM Press.

Taylor, A., Harper, R. (2002). Age-old Practices in the 'New World': A study of gift-giving between teenage mobile phone users. In *Proceedings of CHI'02*, ACM Press, pp. 439-446.

Volli, U. (1994). *Il libro della Comunicazione*. Milano: Il saggiatore,

Warwick, Kevin. <http://www.kevinwarwick.com/>