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Old and New Media, Old Emotion

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Introduction

In the first part of this chapter, I discuss the reasons why it is necessary to look at the emotional sphere in order to understand the complexity of the relationship between human beings and the communication and information technologies (ICTs). In particular, I choose as a point of reference the three dimensional 'model of action' (normative, emotional and rational) which has been proposed recently in the sociological debate to understand the current complexity of social action (Turnaturi, 1995; Flam, 1990). I then examine the results of some quantitative and qualitative research carried out in Italy (Fortunati, 1995, 1998), regarding the emotional impact of the telephone ring, the telephone voice and the answering machine. In the final section I describe the map of emotions provoked by the main ICTs in Europe (fixed and mobile telephone, television, computer, internet, fax, answering machine, radio) focusing on five European countries — France, Italy, Germany, Spain and the United Kingdom. Finally, I explore the main differences between these countries with regard to the ownership and consumption of ICTs in relation to emotion.

Emotion and Communication and Information Technologies

The communicative environment is inhabited by individuals about whom it is necessary to reconstruct the complexity of social action with regard to communication in general and specifically about communicative technologies. Nowadays it is an increasingly shared opinion that the complexity of social action cannot be limited to the classical model of social action at the base of which there is the rational 'man'. Although referred to Max Weber (1922), this classical model is in fact a vulgate and thus is not so faithful to Weber's thinking in which he distinguishes four categories of social action. According to Weber, social action is determined by instrumental rationality, by ethical rationality, affection and adherence to tradition or acquired habits. Clearly in Weber's model emotion is one of the key elements to be considered in the analysis. In effect, Weber's model is also reconfirmed by Piaget's theory (1950). In the perspective of the Swiss scholar, emotion and feelings express the interests and values of actions, while intelligence inspires their structure. The emotional as well the intellectual life are a continuous adaptation to the changes of the daily experience in which assimilation and accommodation are interdependent. Emotions and intelligence give birth each to a specific system of schemes, which set up the complementary aspects of a unique reality. To remedy the limitations of the many analyses of the social action understood only as a rational behavior, there have recently been several attempts to elaborate a more complex model. most interesting attempt is that which approaches social action in its three dimensions: normative, emotional, and rational. This model assumes social phenomena as a multi-dimensional process and takes a point of departure for the analysis of social action the emotional dimension of the individual (Turnaturi, 1995). This three-dimensional model should also be applied in studies in the communication field.

Furthermore, in the current elaboration of individuals assumed as e-actors (Fortunati et al., forthcoming), there is thus the effort to attribute to emotion a primary relevance. kinds of studies often start from an awareness that emotion has an independent logic and the capacity to structure reality, to build a predictable social

reality, and to provide models of elaboration of expectations (Flam, 1990). At the same time, these studies start from the awareness that conducting research on emotion might not be easy, because 'emotion' is difficult to define. There are at least four different theories on emotion connected to motivational, cognitive, psychoanalytic and evolutionary models. According to Plutchik's definition (2002) which embodies the fourth model, there are eight primary emotions divided into four pairs: anger and fear, sadness and joy, surprise and anticipation, disgust and acceptance. According to several scholars, the combination of primary emotions leads to secondary or complex emotion (Johnson Laird et al., 1988). Secondary emotion is manifold and forms a kind of nuance continuum in which the single emotion has difficulty in being clearly defined. Moreover, feelings, that orient the emotional self towards whatever stimulus, are difficult to investigate they are not controllable as they cannot be induced under command; they might be ambivalent, as antagonist feelings can coexist in the same person, and they might be inconstant, as feelings can run out, change or transform themselves into their contrary meaning. Feelings that are manifold, layered and ambivalent create an empathetic attitude (positive or negative) that shapes the substance of each relationship.

Apart from these general difficulties, the relationship between individuals and machines is also characterized by specific difficulties, given the nature of the latter. Some research highlights a certain emotional underdevelopment towards technologies in comparison to other objects — such as clothing[1]. Other research, however, underlines those individuals are able in time to humanize each object, ICTs included. E-actors anthropomorphize technological artefacts and attribute to them typically human characteristics and qualities (Contarello et al., 2008), with the consequence that they can recreate, in the relationship with objects, those satisfactions or frustrations which mark the interpersonal relationships (Douglas and Isherwood, 1996; Codeluppi, 1995). So, the between individuals and machines needs a certain time to develop an emotional intensity.

Emotion is fundamental both in the domestication of a technological artefact in daily life and in its social representation at the level of social thinking as well as at the level of cultural debate. Several works of Vincent are seminal on this issue (2003, 2005, 2006).

Emotion also occurs in several studies carried out about social representations of telecommunications (Fortunati and Manganelli, 2007) and of the new media (Fortunati and Contarello, 2005; Contarello et al., 2007). studies show the role of emotions in the cognitive integration of the technologies of communication and information that also reflects the cultural debate that takes place about them. In Western cultures the epistemological debate about technology has been traditionally dominated (at least in the last two centuries) by strong emotional reactions. We have been accustomed by a cultural tradition that sets humanism against technical, machine against human, humanistic civilization against mechanical civilization (Ferrarotti, 1970, p. 35). This contraposition is not completely unjustified, but, as Ferrarotti argues, we cannot afford to go in the wrong track because of its rhetoric. It is worth recalling that the anti-

[1] In a qualitative research carried out on trousers as bins of technologies, in a xo-point scale that aimed to measure the affective attachment to different fashion objects and technologies by interviewees, the mobile received an average assessment of 2.68, which is rather low (Fortunati and Tassile, 2006).

machinism has always found its most convinced protagonists in persons who do not have any familiarity with machines. The true motivation of this attitude has been well understood by Veblen (1914), who argued that the great guilt of technology was born with the ignominious mark of the manual contamination, the sign of servile labor. For this reason, the anti-machinism was born as a bourgeois myth which shows the inadequacy of the bourgeoisie in respect to the capitalist system which is, however, managed by it. This bourgeois culture is still a lonely and narcissistic culture which excludes labor and its techniques as servile. However, the anti-machinism is not a prerogative only of the bourgeoisie. There are many examples of antimachinist behavior as forms of struggle or resistance by workers (luddites, saboteurs, hackers and so on), who fight against a techno-organizational system that expropriates them of the control of their movements and gestures. But it was the leisure class, continued Veblen, that has often theorized the anti-machinism, since it ended by finding itself isolated and superfluous in a technological environment that defined the modern world as rational and secular. This resistance on principle that Veblen observed is also relevant in the present day.

In Europe as well as in China the most proactive users of the new media have been the middle classes, not the upper classes who arrived later to the appropriation of these technologies (Fortunati and Manganelli, 1998; Fortunati et al., 2008). Tie anti-machinism is connected to a mood, it is an emotional reaction more or less mediated intellectually (Mournier, 1949). Longo (2003) argues that even the analyses about technology conducted in the twentieth century were often emotional, if not visceral, being based on deprecation or enthusiasm. There were in fact intellectuals who saw as the social consequences of the advent of technology only the loss of rationality, the disappearance of the meaning, the premise for a political and ideological totalitarian regime and the tyranny of consumerism. TEre were other intellectuals, on the contrary, who identified as social consequences of the advent of technology only positive aspects such as the increase of well-being and the development of exchanges and opportunities. 'These two opposite points of view are both emotional, but fortunately they are increasingly less present in the social debate about technology, that nowadays seems more balanced since it metabolizes both of them. The renewed interest towards the emotional impact of technologies on e-actors is also due to two practical reasons: first, emotions are able to influence the preference for a single device and its use and second, emotions are able to emphasize the strong and weak points of the communication and information technologies themselves.

There are mainly three areas of the relationship between emotions and ICT that have been investigated until now: the emotional aspects of the ICT content, the emotional reactions to ICTs and the emotional investment e-actors develop towards their devices. Of these different areas of the debate, the research I will expand upon here deals only with the second area.

Aim and Method

I examine here the most salient results of some research projects regarding the social use of ICTs, but only with regard to those aspects connected with the emotional reactions to the communication and information technologies. There are six research projects involved in this analysis on emotion and ICTs. First is a telephone survey carried out in Italy in 1993 (4,130 questionnaires) that investigated mainly the telephone world of the fixed and mobile phone, and the answering machine. Next a body-to-body survey was conducted that involved 101 preschool and 202 primary

school children. Third a qualitative research study on youth behavior related to the fixed telephone world in which 25 students filled in a diary for a week in which they had to record all their incoming and outgoing calls. Fourth is another qualitative research study in which the emotional components of 863 calls made and received by the members of 12 families were investigated and finally a qualitative research study in which 100 university students responded to a semantic differential with 8 stimuli, namely the telephone, yourself on the phone, the ring, the local call, the long-distance call, the recipient, the telephone conversation and the mobile. Fifth is again a qualitative research study consisting of 30 interviews with a convenient sample of 30 mothers having children below 3 years old. Finally, a telephone survey carried out in 1996 in five European countries France, Italy, Germany, Spain and the United Kingdom, (6,609 questionnaires) that studied telephone, mobile phone, television, radio, computer, internet, fax and answering machine. In the conclusion I briefly discuss the main problems which remain open on a methodological level in these research projects.

Results

Telephone Ring

Katia Kraly[2] underlines that the ring is a sound produced which aims to demand attention, similar to the doorbell. In fact, it is made up of high frequencies which are able to penetrate sound strata. To verify the emotional impact of the ring we asked 4,130 respondents (a representative sample of the Italian population) to answer the question: what is the most frequent emotion you feel when you hear the telephone ring? This question was inspired by previous research carried out by Singer in Canada

While in the answers of the Canadian respondents' emotional reactions to the ring seemed to be connected mainly to an instrumental perception of telephone calls, those of the Italian respondents were more connected to the relational aspects of telephone calls. Other results suggest that the imagination connected to the ring is also linked to individuals' moods and expectations. In fact, a research study carried out by AT&T shows that elderly people do not appreciate the telephone ring because they are afraid that it brings bad news. To other subjects, the ring gives instead a sense of security as it results from several oral stories reported by Fischer (1994, p. 269). In any event the ring, being a sound with a strong mediating function, generally has an effect that is much more binding on the imagination than a musical phrase.

To understand further the emotional reactions to the ring, I administered a semantic differential to 100 university students. In this research the telephone ring was perceived as strong, active, dynamic and speedy. This meant that it represented itself in an appropriate way with regard to its purpose, which was to push the user to answer to the phone. ring was more strongly felt by men than by women, it being more pleasant and less intrusive for the latter than for the former. Gender differences emerged also in respect to the three dimensions that arose from the factor analysis: the ring recalls more to women than to men 'a pleasant intimacy and opening to the world' and 'an

[2] Katia Kraly is a musicologist who was interviewed as an expert on the topic of ring and voice. (1981), in which the ring was not perceived as disturbing by almost half of respondents, was indifferent for 10 per cent of them, annoying 15 per cent and bothering 9 per cent. In Italy, the most frequent emotional reaction to the ring was indifference, then curiosity, annoyance and irritation, anxiety and apprehension, pleasure to speak to somebody, pleasure to be called and relief (Table 1).

appeal to well-being and comfort'. Both men and women, instead, live with the ring as a dynamic factor. From another qualitative research study consisting of this time of 30 interviews with mothers having children below 3 years old, curiosity emerged as the most frequent emotional reaction of their children to the ring. Finally, in the quantitative research study with 101 children of a preschool and 202 children of two primary schools (one urban and the other rural) the main emotional reactions to the ring were in the first-place curiosity and then pleasure and amusement. In conclusion, the emotion engendered by the ring among Italian youth and children is positive and linked to the relational aspects of telephone calls.

The Emotional Impact of the Voice or the Retum of Eco's Myth

The telephone voice makes the myth of Eco live again. At the same time, it represents the more or less conscious achievement of the ancient dream or delirium of each gnosis: the spiritualization of the body (Cacciari rep. in Ronsisvalle, 1988, p. 148). With the telephone an extension of the ear and the voice takes place, which is a kind of extra-sensorial perception (McLuhan, 1981). Tie voice extends itself over distances never imagined before and this produces a displacement to the ear of what was in reality owned by the eye (Adorno, 1951). The transmitter and the recipient, connected through the network, let their minds wander from the context to enter into a kind of bubble, like that of cartoons, where they create an intimate communication. This established circuit connects and then isolates them in an intimate communication, where the voice is not the public one addressed to all, but the private voice. The voice is the terrain of mediation which supports the words and is a primary and indispensable element of the communicative instantaneity. On the telephone we are our voice to the extent that the voice becomes our audio portrait (Friedman and Weiss, 1987). The voice has a specific potency on the telephone, since it is a part that speaks for the whole (Esposito, 2007). A sociology of the voice, however, still remains to be considered (Salazar, 1987, p. 16). This may be because the human voice is situated in the paradox of minimalism, since vocal acts are reducible to immaterial exchanges which detract from a determination of value. Instead, the voice has a great function, as it allows us to realize social identification. It is the voice in fact that sets up in a certain sense the order of the world, organizing the chaos and regulating social behavior. On the phone, however, the voice also has a particular effect, because it penetrates directly in the ears and enters the intimacy of the psyche. It is the voice that allows us, amongst other things, to decode the affective impact of telephone calls and offers a very useful material to measure emotion. Bologna (1992, p. 102) argues that the voice timbre can be considered like a: '[...] gesture of the soul'; it is easy to guess, for example, if a person smile talking on the phone. In an important radio station, it has been noticed that when anchors of telephone talk shows smiled when talking, the audience sent in fewer complaints (Scott, 1993, p. 29). Ihe voice is the powerful support that guides us in the meanderings of our and others' emotions. In effect it is an archetypal strength that is supplied by a great creative dynamism. 'Ihe voice expresses people's mental, symbolic, and affective configuration (Zumthor, 1992, p. 10), although its nature is essentially physical, '[...] since it deals with life and death, breath and sound, and it is emanated by the same organs which preside alimentation and survival' (Bologna, 1992, p. 23).

The voice thus 'speaks' our emotion, offering at the same time the advantage that its emotional modalities can be less controlled than the facial expressions of emotion (Ricci Bitti, 1987, p. 102). Davitz (1964 rep. in Ricci Bitti, 1987, p. 110) has

detected that emotion is communicated through the variations of some qualities of the voice, such as the timbre, the tone and the rhythm, independently from the verbal content. So, through the auditory canal it is possible to obtain the dynamic interaction of the vocal characteristics of largeness, highness, timbre and rhythm. Scherer (1983, pp. 147—9) argues that it is even possible to recognize emotion on the base of the voice almost as much as it is on the base of facial expressions. In the case of negative emotions there is even a light advantage in favor of the accuracy of voice recognition. The ranking of emotion is better recognized through the voice: rage, followed by sadness, indifference and, lastly, happiness. Disgust is instead better recognized through the face (Brighetti et al., 1983, p. 162). There exists, however, strong individual differences in coding and decoding emotion, due to age, gender, personality, as well as to the role played by various communicative modalities. For example, women are more able to decipher the facial expressions of primary emotion but lose this advantage in the recognition of their vocal expressions (Ricci Bitti, 1987, pp. 113—14).

It is starting from these considerations that I carried out qualitative research on the emotional impact of the telephone voice. I asked 25 students to fill in a diary for one week to write up the emotional characteristics of the voice in their incoming and outgoing calls. The proposed adjectives corresponded to those more frequently indicated in a previous pre-test. These were: confidential, affable, informal, intimate, normal, accomplished, tender, concerned, cold, irritated, cheeky, embarrassed, edgy, amused, aggressive, and upstart. The voice tone in the telephone calls had been defined mainly as confidential. If we take into account that the first argument of telephone conversations is the request or the transmission of information, this means that it is about intimate information. It is also worth noticing that the number of the emotions cited by respondents in the category 'other' is high. They describe various components involved in the communicative process: status of the body connected to emotion (relaxed, sleepy); their intensity (very strong); characteristics behavior motivated by them (open, spontaneous, natural, familiar, personal, sincere, persuasive, kind, affectionate, friendly, courteous, fair, interrogative, offish, formal, sharp, sharp-cut, neutral, irritating, distrustful, quiet, calm); aspects of the personality (ready and willing, disposable, ironic, dominating, sharing, lap dog, pleasing), and mental status associated to emotion (surprise). If we want to grade the tones of the telephone voice they are more frequently linked to happiness (very happy, close, glad, euphoric, quizzical, relaxing, interested). Less numerous are the adjectives which refer to sadness (dour, sad, depressed, uncomplaining, dark), even less to fear (clumsy, nervous, annoyed) and only two to rage (angry, enraged). To avoid reading these results naively, however, one should remember that in addition to the problem of social desirability, there is the tendency to remember more and better pleasant things and forget those that are unpleasant. On average, half of our memories are pleasant, 30 per cent unpleasant and the rest neutral (D'Urso, 1988, p. 196). Another point of caution is suggested by the fact that '[...] it seems that the material with highly emotional content can be recalled better after a certain period of time rather than immediately after its presentation' (D'Urso, 1988, pp. 194—5).

Thus, since the students involved in this research had to note down immediately after each call their emotion commentary, this partiality in the memory could also account for the judgements expressed by the students who have filled in the diaries. Finally, the mood of those making the judgements is also important in influencing the assessment of emotions: while people with a normal or slightly elated mood make mistakes of optimism in the assessments of themselves and of the others, sad people

seem instead to assess correctly. Through the various caveats in reading these results, one can conclude that from this research it emerges that telephone interlocutors are able to develop a very rich emotional area which is connected to the reciprocal recognition of emotions through the voice. As a consequence, the awareness of the artificiality of this mediated communication weakens following the reiteration of this practice.

The Answering Machine

'The answering machine has been introduced to avoid losing incoming calls when one is absent: it is in fact a device that allows one to maintain one's own communicative reachability. At the same time, deferring to it allows the recipients to overcome their real inferiority, determined by the fact that they must respond to the initiative of an unidentified subject. With the answering machine, the activation of the message is not limited to the person who has dialed the telephone number, but is also extended to the person who receives the call. The answering machine can function as a device for listening incognito and serves also to filter incoming calls (Oldendick and Link, 1994; Haddon, 1998; Katz, 1999). From another point of view, however, the answering machine makes his/her owner 'reachable' around the clock. Also, when one decides to ignore the ring, an unwanted call might remain recorded. It is not possible to pretend not to have received it; the caller knows that the recipient knows. The answering machine refers to a unidirectional communication, in which the temporal unit between the caller and the recipient no longer functions. Between the action of the caller and that of the recipient there is the certainty of coordination, in the sense that the former records a message that he/she knows that the latter will listen to later on. But the construction of the meaning of what is said occurs belatedly and unilaterally, and not between two persons who cooperate to understand each other. The answering machine thus supplies filter and memory functions: the recording of the outgoing and incoming message offers the transaction of a service and not an encounter among communicators. By recording the message, the answering machine transforms the conversation from interpersonal communication into social memory. With its message recoded in the same way for anyone who calls, the answering machine makes communication, or better, the communicative interface rigid and indifferent.

But if we look historically at the answering machine and inside the communication environment, then the function of this device appears very important. 'Ihe answering machine in fact represented the first mass approach to a tactile voice but, what is more important is that it has spread the habit to interact with a machine. The human-machine interaction would have been much more difficult if people had not passed through the experience of using an answering machine. This is exemplified by the results of some research carried out in Italy that helps to understand the emotional integration of this device at the beginning of its mass diffusion. In the Italian survey of1993 (Fortunati, 1995), only 6.3 per cent of the 4,130 respondents declared they owned an answering machine. However, the majority of the interviewees stated that at least one time in their life they encountered an answering machine when calling somebody. There were two main emotional reactions to this device: irritation and nothing in particular (Table 2). The remaining answers were distributed among distrust, embarrassment, amusement, curiosity, anxiety and relief. 'Ihe answering machine frustrates the expectation of one of the recognized advantages of the telephone, which is the immediacy of the retro communication: it is for this reason that the answering machine irritates the person who encounters it. 'Those who call are showing their disposition to

communicate and become disappointed by not finding the wanted interlocutor. Ihe distrust arises from the fact that the caller anticipates a certain trust and intimacy since the content of what will be said will be recorded in a voice-to-voice conversation only in the minds of both interlocutors. A telephone conversation is in fact the triumph not only of the language spoken in freedom, but also of the voice, which is volatile, as it does not leave traces behind it. It is this certainty that stimulates attitudes of trust and/or intimacy (Claisse et al., 1985). Finding a machine in the place of a person provokes the opposite reaction: distrust. What will be said will be recorded and so it will remain over time: a lot of people clam up in the face of this possibility.

Effect	Number of Respondents*	
Irritation	1,397	44.10
Nothin in particular	1,165	36.78
Distrust	296	9-34
Embarrassment	72	2.27
I do not know	69	2.18
Amusement	57	1.80
Curiosity	37	1.17
Anxiety	31	0.98
Other	26	0.82
Relief	15	0.47
N.A.	3	
Total*	3,168	100.00

Table z: Emotional effect engendered by the answering machine.
*962 respondents never found an answering machine
Source: (Fortunati, 1995).

Embarrassment is also easy to understand: from being disposed to a dialogue one must shift instead to a monologue, which additionally will be recorded. Moreover, speaking to a machine instead of with the expected interlocutor, means in a certain sense the acceptance of a self-degradation that implies a loss of one's own situational self-esteem. This embarrassment occurs in a private instead of a public situation, but it equally has those characteristics that make it a true emotional reaction (Contarello and Zamuner, 1991).

To look more deeply into the emotional reaction towards the answering machine research was conducted with 100 university students involving a semantic differential with ten concepts regarding calls. These were: incoming and outgoing, spoken in Italian

and in dialect, local and long distance, addressed to known or unknown recipients, and to which an answering machine or a person answered. From this research it emerged that with an answering machine the call becomes less intimate and liberating. Having to manage the expectation of talking to the person called and instead having to improvise a short monologue, in which one must try to say in few seconds what he/she had the intention to say to the interlocutor, makes the caller more confused, less defined and verified. In addition, the caller is of course less calm, since the answering machine still agitates and embarrasses many people. Finally, the call also becomes more exceptional and special, given that at the time this device was still scarcely diffused (6.3 per cent, according to Fortunati, 1995). I studied further the emotional reaction towards the answering machine in another quantitative research, already cited, with 101 children of a preschool and 202 children of two primary schools (the former urban and the latter rural). The majority of the primary schools pupils stated that they felt embarrassed and disappointed. The answering machine tended to scare more girls than boys. Rural children felt more embarrassed than the urban children. The preschool children, instead, tended to appreciate the answering machine and were scarcely embarrassed. Among these children, amusement and curiosity derived from the fact that a 'speaking machine' might appear odd and amusing, especially when one is not used to listening to a recorded voice: it seemed [to be] my aunt, but it was not my aunt,' said a preschool boy. There appears to be different emotional reactions towards the answering machine on the part of preschool children and primary school children. Embarrassment is an unimportant emotion in the world of the first infancy, while for primary school children (both rural and urban) it is the most relevant. 'Ihe line of demarcation is the awareness of social roles that exist in preschool children in a limited way. These children have few problems of looking good in the face of others and thus they rarely feel embarrassed, while the primary school children often feel embarrassed because they are beginning to be aware of the importance of the social roles. Their embarrassment is also stressed by the fact that they have a crisis about whether they have the level ability required to cope with the answering machine. Finding an answering machine poses in fact a series of problems to resolve: do I leave a message or ring off? If I decide to speak, what do I say? Thus, the main reaction of children aged between 7 and 11 years is embarrassment due to the displacement of an interpersonal relationship by a communication mediated via an artificial dimension — the answering machine.

Emotion and ICTs in Europe

If in Italy, as one learned above, the studies on the emotional reactions towards ICTs were mainly focussed on the telephony area (telephone and answering machine), at a European level the studies conducted have regard to the entire main ICTs: telephone, mobile, television, radio, computer, internet, fax and answering machine. A telephone survey was administered in 1996 to a representative sample of French, Italian, German, Spanish and British populations: 6,609 respondents. In this research we worked with a list of 17 emotions. Tlis list was obtained starting from the emotions identified in previous research (Singer, 1981; Moyal, 1992; Fielding, 1992; Fortunati, 1995), and then by adding other emotions coming from the content analysis of the answers to 'other' obtained in the pre-test of this survey (administered to 100 respondents). The question was: What is the predominant emotion provoked by the single devices ?

The Map of Emotion and ICTs in Europe

More than half of the answers referred to positive emotions: interest, joy, relaxation, company[3] and so on (see Table 3). In particular, the category of enthusiasm, that on the whole collected few marks, was associated especially with the computer, as well as with the category of interest, that had collected a high number of citations. Curiosity and anxiety, along with satisfaction and company, were connected first of all to the telephone. Irritation, anger and unpleasantness were attributed to the mobile phone. Boredom was associated more frequently to the television. Joy, relaxation and amusement were often linked to the radio. Frustration and embarrassment were attributed to the answering machine, while the indifference or the emotional open-endedness to the fax. The key word that opened the world of emotions engendered by ICTs was 'interest'; that is the capacity that the means of communication has to attract people's attention. This capacity to be charming, however, is not associated with the capacity to maintain attention: think for example of the absent-minded and multilayered consumption of mass media. This double movement — attracting people's attention and losing it — is what characterizes the main tenet of communication and information technologies. Telephone, radio and television shared an emotion equally relevant: joy. are the only instruments of communication capable of conveying this emotion and for this reason they are particularly precious within the communicative environment? It is the voice that has this enormous trans-figurative power of annulling the existence of the communicative transformer and to supply the pleasure of the encounter with the other. This, even if it is a little distorted by the artificiality of the instrument and in the case of TV weighed down by the image. The other key word, which concerned again the telephone, television and radio, was company. These devices are considered capable of simulating the human presence. They give the impression of entertaining audiences, and this capacity becomes very important in a society that always pushes the process of individualization and isolation of the individual ahead. ICTs act as a surrogate of communication and socialization in co-presence that actually tend to be reduced and imploded. "This vicarious function of ICTs fills the artificial spaces that until yesterday were occupied by interpersonal communication or by the absence of communication. But it has, however, a positive sign since it is better to share mediated communication with somebody rather than being completely separated from others. Another emotion, very much connected to the television and the radio, is relaxation. highlights how much the consumption of these two technologies is focused on an emotional level: the radio is used as background noise in order to sedate tensions, the television is used in the night to send you to sleep like a sleeping pill. The mobile phone, answering machine, fax and computer were all associated with indifference, disinterest, and nonchalance. In 1996, these were technologies that had still to acquire the power of attraction at mass level and they were not yet part of the daily experience of many people. This explains also the fact that many respondents did not articulate an assessment of the mobile phone, fax and answering machine and declared they felt nothing in particular. On the whole, positive emotions were significantly associated with a high frequency use of communicative technologies.

[3] Company, as identified in the pre-test, refers the mutual comfort of co-presence.

Emotion, ICTs and European countries

Helen Flam (1990) argues, each culture has its emotional profile and sensibility. To understand possible national specificities in the emotional reactions towards ICTs, we built a matrix of frequencies with 18 lines (17 emotions and the answer 'I do not feel anything in particular') and 35 columns (7 devices in the five countries) which had been subjected to factor analysis of correspondences (Benzécri, 1976), and is summarized in Table 3. Of the first two dimensions that emerged (that explain 61.5 per cent of the total inertia), the former highlights an opposition between positive emotions such as company, amusement, joy, relaxation and indifference; the latter sees the opposition between interest and emotional open-endedness (Fortunati and Manganelli, 1998).

On the plan defined by the axes of these dimensions, are situated emotion and the communication and information technologies, according to the origin country of respondents. Telephone and classical mass media in almost all the countries were connected to positive emotions. In particular, radio and television for Britons and Germans and only radio for French, are situated around the emotion concepts of joy and relaxation, but they are on the opposite side in respect to interest and curiosity. This indicates the deep pleasure that Britons and Germans had towards the classical media (radio and television), but also that this pleasure was in some way connoted by a sort of passivity. For Spaniards, radio and TV were essentially amusement and for Italians the radio was also company, and the small screen was still able to interest and intrigue. Spaniards and Italians, in comparison to the others, had therefore a different, emotional appreciation of the classical media, which was more relational and informative (company and amusement, interest and curiosity). The telephone was exclusively apparent on the emotional plan by the Italians, for whom it was located in the area of interest and curiosity. All the other telephone devices (fax, answering machines and mobile phone), in relation to the first dimension, were situated at the polarity of indifference. By continuing to examine again the plan defined by the axes of these dimensions, a true split emerges, originated by the second dimension, which sees, on one side Germans and Britons, and in part French and Spaniards, and the other side Italians. The Germans and Britons are associated with open-endedness or absence of emotions towards computer, fax, mobile phone and answering machine, the Italians to interest and curiosity not only for the telephone, but also for the other devices. In particular, the technologies that engendered the interest of Italians more are the computer and the mobile phone.

At the European level (with the exception of Italy) answering machine and fax were related to the status of accessories, which are the additional parts of the telephone devoted to improving its functioning. No more than accessories, these technologies were considered secondary by Europeans. The suspension ofemotional judgement or the indifference and the disinterest towards them should probably be attributed to their scarce diffusion in the domestic sphere. This, however, did not discourage Italians from expressing some interest and curiosity also towards them. To summarize these results, one could say that the emotional relationship with communication and information technologies is quite influenced by culture.

A second analysis of this data examined the emotional framework that ICTs provoke in men and women. From the corresponding analysis two dimensions emerged (explaining 83.2 per cent of the total inertia). As in the previous analysis, the first dimension highlights the opposition between positive emotions — such as joy, amusement, relaxation, company — and indifference or any emotion in particular. The second dimension instead opposes company, joy and relaxation to boredom. The radio

for both men and women were associated with positive emotions such as joy, relaxation and amusement. In the polarity of indifference there is only the fax for women. The telephone for men and women (but more for women) is near to company. In the opposite polarity there is, instead, the television that, according to men, is located between amusement and boredom, but more displaced towards this latter. We can conclude that, at the European level, apart from a few differences, the emotional attitude of men and women is not different. Summarizing these findings, it emerges that the emotional function that both men and women attributed to the radio was rather similar and positive. Equally positive was the function that both attributed to the telephone, even if for women the telephone is closer to company and seems to allow them to overcome social isolation. Furthermore, in respect of the television, women experienced its small screen more playfully and joyfully than men, who were more ambivalent towards it.

Emotion According to ICTs Ownership and Consumption of Technologies

Finally, we studied the emotional impact of communication and information technologies in relation to their ownership and consumption. In short, from these analyses it emerges that having an answering machine at home, a fax, a computer or a mobile phone significantly influences the type of emotion they engender. Those who had a certain familiarity towards these various devices expressed positive emotion more frequently, while those who did not own them, declared indifference or to not feel anything in particular and sometimes boredom. Only in a few cases did domestic familiarity with a communication and information technology originate sensations of indifference or cause absence of emotions. Instead, the emotional open-endedness or indifference concerned the lack of direct knowledge of these devices in the domestic settings. There is only one exception in this framework: the computer, which induced more interest, not in those already familiar with it, but in those who did not have it. This result already prefigured the future diffusion of personal computers in the domestic setting. Summarizing these results, it emerges that the medium-high consumption of a communication and information technology usually engendered positive emotion, while it is the low or occasional consumption which provoked indifference or nothing. These results seem to contradict the emotional model of consumption which shows that satisfaction and dissatisfaction depend on the break between one or other of these acts and from the time passing from satisfaction to dissatisfaction (Elster, 1989). It seems that the pleasure people feel when they consume a certain product blunts in time. The data collected in this research shows instead an opposite trend. Boredom, indifference or emotional open-endedness are generally associated with an occasional or low consumption of ICTs. We were, and still are, very far from the addiction level regarding ICTs and from the peak of the curve in regard to the communicative technologies. Ihe wear and tear of time is probably only one of the factors that influence consumption and in general the emotional relationship with ICTs. These factors are still not clear; however, their complexity emerges clearly from the results of the Italian survey already cited. Among those who liked much or very much to make calls de facto only 41.5 per cent made one or two calls a day and among those who liked few or did not at all like to make calls de facto 37-7 per cent declared to make the same number of calls daily.
In addition, with regard to call durations, those who liked much or very much the telephone were in the majority of cases making short calls. Actually, it is not always possible to choose what one likes to do and to avoid what one does not like to do and,

at the same time, it cannot be taken for granted that the pleasure that one feels in consuming a certain type of good weakens in time.

In conclusion, in 1996 media represented a positive affective presence in the European daily life, especially the telephone, television and radio. Any criticisms that Europeans have of ICTs did not make a dent in their emotional impact. In particular, Britons and Germans expressed a more passive but deep pleasure towards TV and radio, while Spanish and Italians expressed a more relational and informative appreciation (they also made more live calls to radio and TV). Italians felt interest and curiosity towards the telephone (we recall also that Italians were those who appreciated it most at the European level). In regard to the new media (mobile and computer/internet) and the accessories of the telephone, Italians were the only respondents who declared interest and curiosity also towards them, while all the others perceived them with indifference or open-endedness. These results show a slow emotional appropriation of these technologies by Europeans, with the exception only of the Italians who seemed more rapid in this process. If the domestic familiarity towards communicative technologies and their intense use originates positive emotion in the majority ofcases, the increase of their diffusion and of their use should indicate both an increase of positive emotion towards ICTs by Europeans in the future and perhaps, at least in the near term, the beginning of addiction.

The results I have described thus far offer several cues to thinking about emotion and ICTs. However, they should be considered with a certain caution, since a theoretical issue is still open. If we assume Helen Flam's analysis on the different integration of emotion at a cultural level, can this premise jeopardize the validity of a cross-comparability of emotion in different countries? In other words, is emotion really comparable in different countries? Other reasons to be cautious about these results derive from the structural limits of the methods applied: Firstly, interviews and questionnaires supply findings not on emotion but on the mental representation of emotion that respondents feel and secondly applying the semantic differential offers ways to understand only the emotional temperature towards the different devices.

Conclusion

These research projects on the emotional impact of ICT uses have offered food to reflect on the importance of emotion for the humankind in constructing its reality. It was particularly challenging to test the emotional side of the tri-dimensional model of social action —normative, emotional and rational- on the use of ICTs as in their social representation technological artefacts generally result from connection with the coldness of metals and plastics and with the apparent emotional neutrality of normative rationality and scientific knowledge. However, humankind does not hesitate to anthropomorphize the information and communication technologies, but what is more important is that humankind conceptualizes, learns and appropriates technologies through emotions.

As discussed earlier, humankind in the West is finding a way to metabolize ICTs in a more equitable way than in the past, overcoming both fear and over-valuation of these technological artefacts. This review of the research I carried out in the last 13 years highlights a positive but balanced world of emotion around the use of ICTs. Furthermore, the results of these research projects confirm that it is emotion which influences the preference of e-actors for a single device and its use. And it is again emotion which helps us to understand the weak and strong points of the information and communication technologies. If one aspires to deeply understand the practices of

use of ICTs and their meaning, then the study of the role of emotion in the social and personal use of ICT emerges as crucial.

To conclude also about the concreteness of the findings I explored in this article, let me summarize them briefly. With regard to the emotional impact of the telephone ring, the answering machine and the telephone voice it emerged that: firstly, Italians have an emotional relationship with the telephone ring that is quite connected to the relational aspects of telephone calls; secondly, the most frequent tone of the telephone voice is confidential and the majority of the others are related to happiness and thirdly the emotional reactions to the answering machine, which represents an important outpost in the realm of human-machine interaction, are instead mainly negative (apart from preschool children who often were amused and curious in front of this device) and attest to the difficult emotional integration of this device at the beginning of its mass diffusion.

With regard to the map of emotion engendered by the telephone, mobile phone, television, radio, computer, internet, fax and answering machine at European level, it emerged that this map was made up of mainly positive emotions, such as interest, joy, relaxation, company and so on. It is also interesting that only positive emotion was significantly associated with a high frequency of ICTs use. Looking at the gender and the different countries, it emerges that the emotional relationship of men and women with communication and information technologies is not fundamentally different, whilst it is quite influenced by culture. Finally, ownership and consumption of ICTs also influence their emotional impact: those who had a certain familiarity towards them (owned and used them consistently) expressed positive emotion more frequently, while those who did not own them or had a low use, declared indifference or nothing in particular and sometimes boredom. This means that the increase of their diffusion and use should indicate a corresponding increase of positive emotion towards ICTs by Europeans in the future and not, at least in the short term, the advent of addiction. At the same time, this result demonstrates that the interpretation given to the anti-machinism inside the theoretical debate I reported at the beginning of the chapter is based on a correct assumption: if you know the machine, you like it.

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Emotions	Gender				AV. Total	
	A.V.		A.V.		AV.	
Indifference	443	21.05	595	30.05	1,038	25-41
Curiosi	490	23.28	412	20.81	902	22.08
Annoyance	314	14-92	471	23-79	785	19.22
	397	18.86	221	11.16	618	15.13
Pleasure to speak somebody		13-73	170	8.59	459	11.24
Pleasure to be called	109	5.18	63	3.18	172	4.21
	48	2.28	33	1.67	81	1.98
Other	15	071	15	0.76	30	0.73
Total•	2,105	100.00	1,980	100.00	4,085	100.00

Table 1 : Emotions engendered by the telephone ring by gender.
•45 respondents did not answer to this question (AV.: Number of Respondents).

Emotions	Gender				Total	
Indifference	443	21.05	595	30.05	1,038	25-41
Curiosity	490	23.28	412	20.81	902	22.08
Annoyance	314	14-92	471	23-79	785	19.22
Anxiety	397	18.86	221	11.16	618	15.13
Pleasure to speak to somebody	289	13-73	170	8.59	459	11.24
Pleasure to be called	109	5.18	63	3.18	172	4.21
Relief	48	2.28	33	1.67	81	1.98
Other	15	0.71	15	0.76	30	0.73
Total*	2,105	100.00	1,980	100.00	4,085	100.00

Table 1 : Emotions engendered by the telephone ring by gender.

• 45 respondents did not answer to this question (A.V.: Number of Respondents).

Effect	Number of Respondents*	
Irritation	1,397	44.10
Noåin in particular	1,165	36.78
Distrust	296	9-34
Embarrassment	72	2.27
I do not know	69	2.18
Amusement	57	1.80
Curiosity	37	1.17
Anxiety	31	0.98
Other	26	0.82
Relief	15	0.47
N.A.	3	
Total*	3,168	100.00

Table z: Emotional effect engendered by the answering machine.
* 962 respondents never found an answering machine.

	Television	Telephone		Mobile phone	Answer machine		Computer	Total Responses
Interest	713	948	595	579	708	813	1,089	5,445
Joy	818	843	1,407	205	177	125	396	3,971
Indifference	343	199		712	80s	910	559	3,751
Relaxation	1,182	201	1,201	82	106	54	135	2,961
Company	468	818	729	191	84		58	2,400
Amusement	480	200	604	99	70	68	382	1,903
Satisßction	161	359	199	201	270	268	248	1,706
Curiosity	271	286		126	226	171		1,461

Irritation	165	192	36	327	301	66	79	1,166
Enthusiasm		192	185	100	73	103	216	1,020
Boredom	391	82	69	130	126	79	103	980
	117	107		254	204	55	74	833
Frustration	79	79	13	99	175	32	72	549
Anxiety/stress	19	108	6	93		32	85	408
Unpleasan	65	30	8	104	90	30	26	353
Surprise	19	99		36	69	44	23	310
Embarrassment	8	23		26	60	14	22	
Nothing	634	704	617	2,260	2,125	2,712	1,906	10,958
Total	6084	5,470	6,078	5,624	5,734	5,628	5,712	40,330

Table 3: Matrix of frequencies to show emotions and ICTs in five European countries. Summary of responses from France, Italy, Germany, Spain, United Kingdom. Source: (Fortunati and Manganelli, 1998).

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Unpleasantness	65	30		104	90	30	26	353
Surprise	19	99	20			44	23	310
Embarrassment		23		26	60			155
Nothing	634	704	617	2,260	2,125	2,712	1,906	10,958
Total	6,084	5,470	6,078	5,624	5,734	5,628	5,712	40,330

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