

LABORATORIO INTERDISCIPLINARE DI RICERCA  
BIOPSILOCIBERNETICA  
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**A COMPARISON BETWEEN PRESUMED PARANORMAL  
PSYCHOPHONIC<sup>1</sup>, TELEPHONIC<sup>2</sup> AND DIRECT RADIO VOICES<sup>3</sup>**

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### **Introduction**

It is a great pleasure and honour for me to attend this very important Second International Conference and I would like to thank Dr. Anabela Cardoso and Professor David Fontana for their kind invitation. My presentation is concerned with some investigations performed in Bologna, at *Il Laboratorio*, as part of our research program on this subject. Such investigations have to be considered exploratory because to-date only a limited number of such voices has been obtained under controlled conditions.

According to Ernst Senkowski's definition of *Transcommunication*, *Instrumental Transcommunication (ITC)* includes *Psychophonic voices (EVP)*, *Telephonic voices* and *Direct Radio Voices (DRV)*. In Italy, at *Il Laboratorio*, we prefer to define this inexplicable phenomenon, obtained through technical means as *Instrumental Auditive Psi Interaction (IAPI)*. This new definition has been introduced in order to give the most objective description of the phenomenon as the consequence of a psychic interaction. In other words, the phenomenon is of a psychic nature. It must be emphasised that, when I say "the phenomenon is of a psychic nature", I mean that a final physical event (i.e. a recorded or recordable voice) is psychically originated or supported.

I think that the correct meaning given of the word "Psyche" can be found in Plato's (427-347 B.C.) *Socratic Dialogues* (396-388 B.C.), and especially in his

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<sup>1</sup> *Psicofonia* (Psychophony) is the term introduced by the Spanish parapsychologist German De Argumosa in 1972.

<sup>2</sup> Paranormal voices received through the telephone.

<sup>3</sup> Paranormal voices received directly through a radio receiver.

*Phaedo* (387 B.C.). In these works Plato affirms that the Psyche (or Soul) is an entity capable of surviving physical death. It is not to be considered as something like an ethereal body but as a Mind or an Inner-Self, a centre of consciousness that has the ability to make ethically responsible choices (Hick, 1976<sup>4</sup>).

There are many ways to study the paranormal or anomalous events, relating to the survival of consciousness after death. Many operators who try to ‘receive’ communications from beyond are mainly driven by emotional motives, such as the loss of a loved one, and with such individuals the contents of communications are surely more important than anything else. Other researchers, like myself, are driven by an awareness of the great importance of the phenomena involved and are studying them by investigating the multiple forms that they take. In doing so these researchers try to identify all the elements that contribute to increasing the meaning and the validity of the results coming from the experiments. This is why I consider it mandatory that the observable phenomena are thoroughly investigated, and that these investigations are carried out using methods and technical tools that are recognized as suitable for scientific research. It should be the task of serious researchers to uncover all the variables that can be considered as *anomalies* in that they do not fit the established laws of Physics. Only in this way will we alert the scientific community to the importance of this kind of research, and only then will a revision of the paradigms currently considered immutable by Science take place.

In line with Thomas Kuhn's thought<sup>5</sup>, we recognise at *Il Laboratorio* that this may be a very slow process, but it is nevertheless the only way we can lead human society to a conscious maturity arising from a scientific understanding of these experimental breakthroughs. To this purpose my collaborators and I at *Il Laboratorio* are dedicating our efforts. We use the most up-to-date professional software and hardware to document all the peculiarities and anomalies that are

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<sup>4</sup> **John Hick** – *Death and Eternal Life* – London Collins, 1976  
and

**John C. Eccles** – *The Human Psyche - the Gifford Lectures 1978-1979*, Springer-Verlag, Berlin, Germany, 1980,  
(Reprinted Routledge, New York, NY, 1992).

<sup>5</sup> **Thomas S. Kuhn** - *The Structure of Scientific Revolution* - The University of Chicago, 1970.

found in the electroacoustical structure of undoubted paranormal voices obtained under controlled conditions. In this paper I am pleased to share with you some examples of our preliminary findings.

## 1. Psychophonic Voices (Electronic Voice Phenomena - EVP)

On 17<sup>th</sup> September 1952 the Italian priests Fathers Agostino Gemelli<sup>6</sup> and Pellegrino Ernetti<sup>7</sup> reported a case of an allegedly anomalous communication received through a magnetic wire-recorder. The claimed phenomenon attracted little attention until 1959 when Friedrich Jürgenson, a Swedish artist and documentary filmmaker, obtained the same kind of phenomenon. In 1964, 1967 and 1968 Jürgenson published the communications received through a tape recorder and a radio and apparently coming to him via unknown channels. Intrigued by these claims, Latvian psychologist Konstantin Raudive commenced his own experimentation, which confirmed Jürgenson's results (1971). Many research activities have subsequently taken place in several countries in order to understand the mechanisms governing the phenomenon. In Italy, we have an ongoing research project, named *Sfinge*, which is supported by a grant generously donated by the *Helene Reeder Memorial Fund*. This project involves practical experimentation, under controlled conditions, involving four skilled ITC top operators (i.e. individuals who appear able to receive audible ITC

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<sup>6</sup> **Father Agostino Gemelli** (Milan 1878 – Milan 1959) medical laureate, psychologist and neurophysiologist. In 1903 he joined the Grey-Friars and in 1921 founded the *Università Cattolica del Sacro Cuore (Catholic University of the Holy Hearth)* of Milan, legally recognized by the Italian State in 1924. Gemelli carried out neuropsychological and psychological experiments. He focused some of his research on the psychology of the workplace. His Institute of Psychology was the most prominent institution of its kind in Italy. He worked to reconcile Christian faith and modern culture. Despite his many administrative duties as university chancellor (which he performed until his death), Gemelli's endeavours involved both scientific and philosophical studies. In addition, he wrote extensively on the contemporary meaning of Franciscan spirituality and was a pioneer in actively engaging the laity in the mission of the church.

<sup>7</sup> **Father Pellegrino Ernetti** (Rome 1925 – Venice 1994) was an Italian Roman Catholic Benedictine priest, scientist and worldwide authority on archaic music (pre-Christian to 10th century A.D.). Father Ernetti was teacher of Prepoliphony at "Accademia di Santa Cecilia" (Academy of Saint Cecily) of Rome and at Conservatory "Benedetto Marcello" of Venice and a well-known exorcist. He claimed to have combined quantum physics with parapsychical phenomena for designing and manufacturing a "time machine" named "chronovisor". Father Ernetti claimed that, by utilizing the chronovisor, he travelled backward in time to Rome to attend a performance of the now-lost tragedy *Thyestes* by the Latin poet Quintus Ennius (239 B.C.–169 B.C.) and watched Jesus Christ dying on the cross.

communications), each working in independent experimental sessions. We started the project with the first operator by experimenting with the typical microphonic recording method (EVP), using a cassette tape recorder with built-in microphone. The operator concerned was a female EVP experimenter, Mrs. Lida Russo from Livorno - Italy. Mrs. Russo receives her communications on an unsophisticated audiocassette recorder. Unfortunately, in her own experimental sessions the voices she has recorded have been of poor acoustic quality. However, exactly the opposite happened in our research sessions with her, in which we used a professional recording system operated by Daniele Gullà. The introduction of this professional system yielded some unexpected and astonishing results. The system consisted of a personal computer that acted as a recorder of all the input signals coming from a high-quality condenser microphone (studio type) processed by digital acquisition and processing devices. An important check was provided by a professional phonometer that monitored any background noise occurring during the experiment.

Generally, the main objection currently raised by critics of EVP results concerns the ambiguous sounds that usually characterize the material. In their view ambiguous acoustic sounds that are fragmented and cadenced can be incorrectly interpreted as containing linguistic messages. They argue that when a high fidelity recording system is used the alleged paranormal voices reveal themselves to be no more than random noise rather than voices. Our experiment demonstrated exactly the opposite. Our digital recording revealed the presence of voices not apparent on the audiocassette recorded by the operator, Mrs Russo. In my opinion the primary cause for the differences between our results and those of Mrs. Russo on this occasion must be sought in the devices used, together with the psychological and/or psychical conditions existing in the operator and in the whole 'mind system' of the people attending the experiment. Mrs Russo was expecting good voices to be recorded by the experimenters from *Il Laboratorio*, and consequently her principle anticipation was that voices would be successfully recorded on our sophisticated recording devices. These were arranged in the room by the

researchers (on a few occasions Mrs. Russo in fact asked Daniele Gullà if some voices had been recorded on his devices). She was not worried at all whether or not any voices were recorded on her own tape recorder. The strong influence that she appeared to exert on our devices was encountered again when our psychologist, Dr. Giorgio Gagliardi, and his assistant subsequently performed a psychophysiological check on her.

This check involved the use of a polygraph connected to a personal computer that records some of the neurological and electrodermic changes occurring in an individual during the course of an experiment. Before leaving his home Dr. Gagliardi had checked both of these devices for proper operation, and no problems had been found. However, once the electrodes from the polygraph were positioned on Mrs. Russo's head and everything was ready for the test the personal computer gave an error message. Several times the computer was checked and restarted, but the error message did not disappear. However, very significantly, when Dr. Gagliardi returned home, both the devices were found to be operating correctly, without any error! Last but not least, all the photos (about 50) taken with a digital camera before and during the experiment, many of which showed Mrs. Russo with the electrodes positioned on her head, all proved to be inexplicably lost (inaccessible) and it has proved impossible to recover them. It is my opinion that the stressful psychological conditions acting on Mrs. Russo's mind, probably due to a strong worry about the results of the polygraph test, were responsible for these occurrences.

The results of the analyses done on two very short tonal sentences received during the experiment are as follows.

The two communications contain the Italian words respectively: "ami Enzo?" ("do you love Enzo?") and "oh mamma" ("oh mummy"). It must be made clear that Enzo, the unknown speaker, is the name of Mrs. Russo's deceased son. The first of these communications \AMIVENZO\ is uttered with a light temporal dilatation, with a clear pause between the two words. The voice is loud and well cadenced, and was heard only on playback and not at all at the time the recording

was made either by the experimenters or by the operator. In this first communication (duration 2.278 sec.) only the first part \AMI\E was analysed because the rest of the second word \ENZO\ was partially overlapped by the voices of some of those present at the experiment. The analyses revealed several anomalies as follows:

- Modulations of the signals which changed mainly in amplitude rather than in frequency.
- Formants visibility limited to F1 and F2 only.
- Vibrations of the vocal cords detectable only for short intervals.
- Abnormal fluctuations of voice frequency ranges.
- Poor melodic and harmonic contents.
- Vowel sounds expanded in time.
- Abnormal excitation of the cochlear liquid (as simulated via our software).
- Voice reverberations that differ from the reverberations of voices in the room.
- Random values of vowels in the I.P.A. table.
- High noise content and significant aperiodicity of signals.
- Impossibility of subsequently structuring with the software a model of the vocal tract that would have been needed to produce the voice, due to the low influence in the voice of overglottal organs (resonators).
- Jitter values that indicate the presence of possible dysphonias.

The electroacoustic measures used in the analysis therefore reveal the presence of significant structural anomalies in the acoustic content of the communication that deviate from normal human speech parameters, even though to the human ear the sounds concerned are uttered by a voice that is easily audible and apparently quite similar to the human voice.

The second communications analysed by us (\OH\MAMMA\ - duration 1.897 sec.) was successively uttered twice. On the first utterance the voice was loud and clear, while on the second one it was acoustically very low and whispered. A sound, similar to the one produced by pushing a call-bell such as those used on the reception desk of a hotel to call for attention precedes the first utterance, although nobody heard such a sound at the time the recording was made. On the spectrogram, in the location corresponding to the first consonant \M\, there is a typical indication of a noise, ranging around 5 KHz. This is normal in human utterances of the consonant \M\) due to the airflow exiting through the nose. However, in the first vowel \A\ of the vocoid \MA\, even though the specific functions of the software (i.e. L.P.C. and Autocorrelation) clearly reveal the activation of overglottal resonators, the vibrations of any vocal cords are not discernible. The same can be found in the last vowel \A\.

The trend of the fundamental frequency is also anomalous. Initially it shows an appreciable peak around 290 Hz, then a sudden drop in few milliseconds to 77 Hz. In the central portion of the sentence both the fundamental frequency F0 and the vibration of the vocal cords are undetectable or completely missing. At the end of the sentence the fundamental frequency F0 re-appears with a peak at around 296 Hz and with possible traces of vocal cords vibrations. The analyses performed on the second utterance therefore exhibit the same anomalies as are present in the first utterance. In addition, the following anomalies exist.

- An abnormal trend in the fundamental frequency F0.
- Inability of the software to represent the sounds using the cochlear model.
- Discovery that the voice seems to be partially structured by timbre sounds and whispered sounds, with only some structural components that pertain to human speech, as in the consonant \M\.
- Formants fragmented and apparently generated by a *thickening of background noise*.

The electroacoustic measures carried out on the second communication sentence therefore confirm the presence of important anomalies in the voice structure. The presence of the fundamental frequency without the consequent vibration of vocal cords is inexplicable, as in normal human speech the fundamental frequency is generated *solely* by the vibration of the vocal cords. The energy and the high a-periodicity of signals pertinent to vowels are also absolutely unusual and detectable only in the zones affected by consonants.

The highly unusual features found in the acoustic analysis of the paranormal utterances recorded during the experiment are very important indeed since they support my hypothesis as to the process involved in the generation of paranormal formants. These formants do indeed appear to be generated by an inexplicable local thickening of the existing background noise. In particular it can be noted from the analyses that such formants, mainly modulated in amplitude, are structured in the proper typical frequency bands pertaining to the vowel sounds. In consequence – and this is a very important point – formants so structured maintain unaltered the semantic content of the words during the listening phase. In addition, it was found that if some slight deviations or some lack of acoustic information occur, thus producing a change in the expected acoustic values (and likely in consequence to cause the software to make an incorrect vowel sound classification and incorrect placement in the phonetic IPA table), the listener consciously or unconsciously is able, during the listening phase, to compensate by ‘inserting’ the missing sound in the input signal.

In order to exclude eventual deviations interpreted as anomalies due to the software used (SFS v. 4.6)®, we used a second professional software programme (Praat v. 4.3.37)® in accordance with the requirements stated in our Operative Procedure. The analyses performed using the second software programme confirmed the anomalies detected by the first analysis.

Another case of significant EVP, received under controlled conditions, will be reported in the paragraph dealing with Direct Radio Voices (DRV) below, since it is closely connected with the direct radio voice analysed.

## 2. Telephonic Voices

I first became interested in this phenomenon several years ago after reading the only book existing at the time on the subject. This was published in 1979, titled 'Phone Calls from the Dead', and written by David Scott Rogo and Raymond Bayless<sup>8</sup>. Telephonic voices are supposedly paranormal voices reported as being received over the telephone – i.e. seemingly 'normal' voices that turn out to be from people who are in fact deceased at the time. On occasion these voices intrude into normal phone conversations between two living communicators. I refer to just such a case in due course.

Rogo and Bayless also report another kind of paranormal phone call, identified by them as 'Intentional Phone Calls', where the caller turns out to be a living person who had only *the intention* to make the call and never actually made it. The first kind of telephonic event *happens spontaneously*, with the recipient unaware of speaking with a dead person. In the second kind of event communicator and recipient also have a seemingly normal phone conversation.

*Il Laboratorio* was asked to analyse a telephonic voice sample, which was sent via e-mail by Sonia Rinaldi, a well-known Brazilian ITC operator. The sample arose from an experiment carried out by recording a phone call, initiated by a lady called Cleusa, on Rinaldi's personal computer. Cleusa is the adoptive mother of Edna, a young girl deceased at age 16, run over by a car. The phone call lasted 15 minutes, during which Edna replied 78 times. The experiment was conducted in an unusual way. During the conversation between the two ladies three CDs, containing the utterances of phonemes pertaining to foreign languages (other than Portuguese), were simultaneously played as background. Using such a mixture as sounds-source meant that it was impossible to structure meaningful

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<sup>8</sup> David Scott Rogo, Raymond Bayless - *Phone Calls from the Dead* - Prentice-Hall, 1979

sentences in the Portuguese language the ladies were using, coherent with the topic of the dialogue. Half the sentence submitted to us for analysis was found to be modulated over the CD sound-source while the other half was perfectly clear of these sounds as it was recorded when the CD player was switched off.

We analysed just this second half of the sample. It is appropriate to point out that the sample was sent to *Il Laboratorio* via e-mail and therefore suffered from all the limitations due to this communication medium. In addition it must be emphasised that the sample was not obtained under controlled conditions by representatives from *Il Laboratorio*. The analyses performed on Edna's voice revealed the presence of the following structural anomalies:

- Severe fragmentation of the fundamental frequency F0 and its abnormally low fluctuation in frequency (found less than 15 Hz, while in the normal human speech it ranges from 30 to 60 Hz).
- Severe fragmentation of vocal cords vibrations (presence of vibrations are apparent only in the positions of existing fragments of the fundamental frequency).
- Unusual increase of sound intensity in the high frequencies range (2000-3000Hz). In a normal speech, when the frequency range increases, the intensity usually decreases. In our case, exactly the opposite was found. The sounds appeared to be made by a voice operating in the soft palate area (i.e. a glottal voice), or produced by a vocal apparatus of reduced physical dimensions.
- Abnormal formant trends with a partial fusion of F2 and F3.
- Abnormal formant bandwidths.
- Abnormal increasing of sound intensities in the formants F3 and F4.
- High values of Jitter and Shimmer indicating the presence of dysphonias due to possible phonatory pathologies. In particular the impulsive changes in voice frequency (Jitter) represent an indirect evidence of instability of the vocal system.

- Abnormal speech fluency characterized by lack of voice breaks.

In normal speech the voice breaks are caused by the occlusions produced by certain consonants or due to the aspiration/expiration of air to/from the lungs. In human speech several voice breaks are normally made depending on the length of a word.

- Abnormal fluctuations of voice frequency ranges.
- Poor melodic and harmonic content.

After finding the above anomalies and in order to investigate further, we compared Edna's alleged paranormal voice to a recording of her voice made while she was alive. The analyses were carried out by means of the *FBI Image Searching*® software currently used by the Federal Bureau of Investigation in the United States. This software has real-time recognition capabilities and can be used for any kind of images (visual or acoustic), obtaining extremely accurate results and able to process millions of images. It functions by 'learning' the content of an image or several images and then retrieving from the database all similar images. The *FBI Image Searching* software provides a tool for image matching through its 'One-to-One' and 'One-to-Many' functions. The 'One-to-One' function provides the identification by matching a single image against another single image, and the 'One-to-Many' function does so by matching a single image against a database of images with no declared identity required. In our investigation into the Edna voice sample we used both of these functions. Scores are generated for each comparison, and an algorithm is used to determine the matching record. Generally, the highest score exceeding the threshold is regarded as indicating an identification between the sample image and that in the database.

In our investigation the images processed by the software were the acoustic maps relevant to Edna's voice when alive and her alleged paranormal voice. Using an acceptance limit of accuracy greater than 95% we found that the 'One-to-One' comparative analysis identified the acoustic map of Edna's voice while alive with the acoustic map of her alleged paranormal voice. In order to provide further confirmation Edna's voice while alive was added to the 908 voices existing in the

software database, 229 of which are of Portuguese and Brazilian/Portuguese speakers (Edna herself was Brazilian), and the same acoustic analysis was carried out using the 'One-to-Many' function, and employing the same acceptance level, thus enabling a comparison to be made between the acoustic map of Edna's alleged paranormal voice and the 909 acoustic maps of other voices now contained in the database. This matching process took seven hours and involved 48.600 calculations with the processor (CPU) working at 100% capacity (Processor type AMD K7 operating at 3 GHz with RAM of 1 GHz).

In completion of this extensive exercise, the 'One-to-Many' programme identified the acoustic map of Edna's alleged paranormal voice with the acoustic map of Edna's voice while alive. This identification was the only one in the whole exercise (involving 909 acoustic maps) that exceeded a similarity level of 99%. This justified us in concluding that the sample sent to us as Edna's telephonic voice indeed appeared to resemble beyond reasonable doubt her voice in life.

### **3. Direct Radio Voices (DRV)**

This kind of paranormal phenomenon includes all those voices captured via radio that provide coherent responses, questions or comments posed by investigators. Such voices are clearly audible as issuing directly from the radio loudspeaker without the need of a tape record to detect them. These voices are not ascribable to fragments of normal radio transmissions.

In order to find the features in DRV common with and relevant to microphonic and telephonic voices, we analysed some voices obtained at Marcello Bacci's laboratory in Grosseto Italy during his experimental sessions. In these sessions Bacci tunes his radio to the short waves band, at a frequency ranging between 7 and 9 MHz in a zone clear of normal radio transmissions. After a wait of 10 to 20 minutes the background noise changes. All noises then disappear and a typical acoustic signal, like an approaching wind vortex, issues from the loudspeaker, repeated three or four times at short intervals. At the end of this period silence occurs and the Entity's voices then start to speak by establishing

with Bacci, and/or with others attending the experiment, a dialogue. Usually, before ending the experiment, the voices of deceased children manifest by pronouncing repeatedly their own names or by expressing in a few words their own message to parents present in the room.

Our analyses of the samples of Direct Radio Voices received by Bacci revealed the presence of anomalies similar to those already found by us in the microphonic and telephonic voices. Such anomalies can be summarized as follows.

- An anomalous trend in the fundamental frequency, which is often missing or fragmented. Values occurring beyond the frequency ranges typical of both male and female voices in the language concerned.
- The presence of formants lacking their causal fundamental frequency, F0. In such cases the formants are abnormally structured by utilizing a thickening of background noise. It must be explained once again that fundamental frequencies are generated by the vibrations of vocal cords, and that formants are groups of harmonics generated by resonance in the vocal tract by the fundamental frequency. The formants are acoustic elements that convey during analysis a wealth of information about the voice concerned and its timbre.
- The expansion of vowels in time (i.e. vowels structured with an atypical duration in length).
- Abnormal articulation velocity (i.e. sentences uttered in an abnormally short period of time).
- Abnormal fluctuations of voice frequency ranges.
- Poor melodic and harmonic contents (i.e. voices with a poor timbre, comparable to robotic voices).
- Unusual strengthening of higher harmonics, whereas in normal human speech sound intensities decrease as frequencies increase.
- The abnormal structuring of vowels, without vibration of vocal cords.

- Frequent irregularities in the signal periodicity (a human voice exhibits a periodical signal with a sinusoidal trend, while noises are a-periodical signals).

A good example of these anomalies is provided by the analyses we have performed at various times on the voice of Chiara Lenzi, the deceased daughter of our colleague Giuseppe Lenzi, who has communicated on several occasions during Bacci's experimental sessions. Her father has reported recognizing her voice on each of these occasions. Our analyses have involved a comparison of the word 'Chiara' uttered by Chiara through Bacci's radio and the same word uttered in her lifetime (on the occasions when her father recorded their phone conversations). Among the four supposed paranormal samples available containing the word 'Chiara', we chose the one that was clearest from the auditory point of view. The comparative analyses of the DRV voice and the voice recorded during Chiara's lifetime yielded the following results:

Similarities between the fundamental frequency F0 in the two voices with a shift in frequency to a slightly higher level in the paranormal voice.

- The same slight shift in frequency between the two voices in the first formant F1 and in the second formant F2.
- The higher articulation speed of the paranormal voice.
- The more evident vibration of vocal cords in the first 'a' in the word 'Chiara' spoken by the normal voice than in the second 'a'.
- A fundamental frequency shorter in duration in the vocoid \IA\ in the paranormal voice than in the normal voice.
- A very high level of similarity shown by the *FBI Image Searching* software analysis between the supposed Chiara's paranormal voice and the normal voice.

Even with the slight differences between the two voices, the *FBI Image Searching* software thus classified Chiara's paranormal voice as 'highly similar' to her voice while alive. However, in order to help us make an objective assessment we performed a second test. We recorded the word 'Chiara uttered by ten young

girls living in Siena, whose ages ranged from 16 to 20. These ten voice samples were highly suitable for comparison with Chiara's presumed paranormal voice since Chiara herself was from Siena (and consequently had the typical tone of Siena speech) and was in the same age range. The ten voice samples were entered in the software database, and *FBI Image Searching* software used to compare the alleged paranormal voice to all the voices in the augmented database: again no normal voice apart from Chiara's own was found similar to or compatible with Chiara's presumed paranormal voice.

It must be emphasised that an absolute certainty of 100% in the recognition of an unknown voice can never be achieved because a human voice, by contrast to human fingerprints, is not unique and can be subject to change. Many people have quite similar voices, as we recognise when we misunderstand the identity of a phone caller. This similarity may arise from several factors, given that the same person can produce different vocalizations. It is therefore very important that in voice assessment the so-called *interspeaker variability* (i.e. the differences between the voices of different speakers) and the *intraspeaker variability* (i.e. the differences in the voice uttered by the same speaker in different moments and contexts) are taken into account. Identity recognition should only be considered reliable when the differences between the data yielded by the unknown speaker and that by the speaker under investigation exceed the normal known interspeaker differences. If such differences are exceeded, it can be concluded that the two voices belong to the same speaker. The Italian Courts of Justice require, as a standard procedure in voice recognition, to be presented not only with the results arising from the application of a specific algorithm (which as already made clear produces a similarity level that is always less than 100%), but also a personal assessment by the expert concerned in the form of a synthesis of all the analyses he or she has performed.

In 2003 we carried out a new objective-parametric-comparative test on an acoustic sample with a good Signal-to-Noise Ratio (S/N) of Chiara's supposedly paranormal voice received in Grosseto and her voice when alive. For this test the

latest generation software, *Idem*®, was used. *Idem* is designed by the technicians of the ‘Ugo Bordoni Foundation’ with the aim of recognising the voices of unknown speakers in the investigations performed both by the Italian Magistracy and the Italian Judicial Police. A series of sentences uttered by Chiara while alive, constituting an acoustic sample 20 seconds in duration, were analysed. From this significant sample the average values of vowels \a\ e\ i\ o\ u\ were extrapolated and saved as a numerical matrix in the software database, which already contained data relating to 900 speakers. The next step was to compare the voices in the database (which now included the numerical matrix of Chiara's voice while alive) and the 20-second sample. Such analyses were performed by utilizing the *Mahalanobis distances with the HMM algorithm* and the *Viterbi match*.

The final result was astonishing: Chiara's presumed paranormal voice emerged as similar to her voice while alive with a similarity percentage rating *greater than 99%*.

Two years after the completion of these analyses a new opportunity occurred. During the previous year's experiment with Mrs. Lida Russo described earlier in the paper, the voice of the deceased Chiara apparently returned again, this time saying the word ‘Chiara’ recorded on the tape recorder of her father Giuseppe Lenzi. On the occasion concerned four recorders were recording at the same time (3 tape recorders and 1 digital system) but Chiara's voice appeared *solely* on the tape recorder held in her father's hand. Because of the meaningful nature of this occurrence, a new comparison between the voices of Chiara when alive and the new supposed paranormal voice was carried out. Using the spectrograms in wideband some differences between the two voice recordings in the structures and trajectories of formants were found.

The fundamental frequency apparent in the two voices was found to be similar in value but dissimilar in its prosodic trend. Usually in normal speech the different formantic and prosodic trends can be caused by different articulatory postures, which are related to the context in which the acoustic verbal event took place. For example an exclamatory word, uttered under the influence of a

particular emotional circumstance, exhibits some sussultatory trends that are not normally detectable when the same word is uttered by the same speaker without any emotional context.

Another dissimilarity was found in the phoneme \RA\, where in the case of the supposed paranormal voice the vibration of the vocal cords and the formants were hardly noticeable, while the spectrogram in narrowband showed an evident harmonic structure with a nearly sinusoidal trend in Chiara's voice while alive. In addition a noise thickening was found in the formants of the paranormal voice instead of harmonics. Significantly, the spectrographic and LPC analyses revealed a poor influence of the resonant cavities in the paranormal voice indicating that it did not originate in a human-like vocal tract. Furthermore, although with the Signal-to-Noise Ratio of 5.3 dB present at the time of the supposed paranormal recording, the influence of a vocal tract would be expected if the voice was human, but this feature was not present. In consequence the voice if human would seem to have utilized a resonant vocal tract of very low density, indeed practically nonexistent, and to have no larynx or overglottal resonators.

As with the earlier experiments, the auditive tests and non-parametric analyses conducted by expert Eng. Daniele Gullà demonstrated that the presumed paranormal voice of Chiara Lenzi exhibits an *evident compatibility* with her voice when alive.

#### **4. Conclusions**

The results of the analyses performed by us to date on microphonic, telephonic and direct radio voices and reported in the present paper must be considered as an explorative sampling of recurrent anomalies detectable in the electroacoustical structure of paranormal voices. Since the anomalies found by us appear to be typical it could be provisionally stated that the sampled paranormal voices are characterized by some significant and substantial differences as compared with human voices. In my view these differences refer primarily to the structuring process of paranormal and normal voices. The subjective-auditive and

instrumental tests employed by us demonstrate that the acoustic quality of the paranormal voices is undoubtedly the main variable detectable in the phenomenon.

In the more than three decades in which microphonic voices have been studied prior to our own work the main variable reported has been fluctuations in the range of audibility, from whispered voices to voices with extremely clear sound (timbre voices). In telephonic voices the quality of the sound also varies, in some cases appearing to be generated in the same manner as the microphonic voices (i.e. by modulating the background noise or other sound material available at the time) In other cases such as those reported by D. Scott Rogo, the quality of telephonic voices seems to be almost the same as a normal telephone voice.

The above variability in the samples of microphonic and in the samples of telephonic voices has been found in direct radio voices (DRV) as well. For example, the DRV voices obtained by Friedrich Jürgenson and by Anabela Cardoso differ substantially acoustically from those received by Marcello Bacci. Why should this be? And why is it that on occasions the operator's own voice appears to have been recorded paranormally on the tape (both Eng. Carlo Trajna and myself have experienced this phenomenon). Other instances have been reported in which voices have come from the loudspeaker of the tape recorder while a tape containing normal acoustic material has been playing. Subsequent checks have shown that these voices could not have been recorded on the tape.

In my view the differences in the paranormal voices noted above may depend upon the degree of sensitivity or mediumship of the operator. In particular the conceptual models and expectations (for example the conviction that DRV communications are received through a radio in a same way that normal broadcasts are received) held by the operator may generate or activate an as yet undetected psychic channel in him or her that results in voices being received in the anticipated way. In terms of this possibility, what can we say about the *sensitivity* or *mediumship* of the operator?

Firstly, I believe that sensitivity or mediumship is an ability possessed to a greater or lesser degree by everybody, an ability that appears to improve when a

strongly motivated operator devotes him or herself to experimenting on a regular basis. Secondly, this ability seems to be assisted by deep inner conviction that real communication with other planes of consciousness is possible. In 1985 I described this frame of mind as *Inner Attentive Disposition (IAD)*. Consciousness faces no more profound or perplexing question than what is the role of IAD in the establishment or modification of reality? Western culture relegates the human mind to a passive processor of sensory experiences, but by contrast the mystical traditions of many oriental cultures consider that all experiences are actually created by consciousness so that all tangible reality is in fact an illusion.

Empirical experience with paranormal voices teaches us that the physical and psychological relationships between consciousness and the physical world entail subtle effects and processes that often appear to violate the most fundamental and consolidated scientific paradigms of space, time and causality. In this context it is relevant that the great Danish Physicist Niels Bohr concluded on the subject of the enigmas of modern quantum Physics – which I consider have some bearing upon our research – that "We are both onlookers and actors in the great drama of existence"<sup>9</sup>.

The experimental data that we have been analysing using new generation equipment for recording and data processing and appropriate research protocols and updated interpretation techniques provide a highly significant aid in the search for a bio-psycho-cybernetical interpretation of the phenomenon. They point to a complex interaction/s within what I choose to regard as a *Mind System* - that is a system characterised by effective participation between one or more interfaced minds communicating with each other by virtue of shared psychic models within the minds concerned. These psychic models are capable of producing effects on the physical plane through a form of interaction with matter, an interaction defined in the parapsychological literature as *Psychokinesis* or *PK*. In this context I strongly agree with John Beloff<sup>10</sup> when he says that PK is not a force or energy or

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<sup>9</sup> **Niels Bohr** – *Atomic Theory and the Description of Nature* – The University Press, Cambridge, 1961

<sup>10</sup> **John Beloff** - Presidential presentation at Society for Psychical Research of London, 1975.

physical process but an unexpected result arising from a direct interconnection between the mind, the Universe and all that the Universe contains. Beloff further argues that the PK effect is not necessarily a super-energy located in the mind or in the body, but rather a phenomenon capable of occurring in certain circumstances as a result of a strongly held idea or intention that automatically forces the material world to bring it into manifestation. There is thus no need to postulate any additional process acting as a bridge to bring about the observable result.

Thus the fact that different operators obtain paranormal voices with different acoustic characteristics even if they are using the same experimental methods and the same devices could in my view be due to the fact that different psychic models are present in the minds of each operator, whether at a conscious or an unconscious level. Different psychic situations produce different physical effects dependent upon the mental models interiorised by the respective operators.

I would like to conclude this paper with a final and purely speculative reflection arising from my personal experience in searching for the dynamics that govern Instrumental Transcommunication processes, and touching upon what I imagine exists behind the paranormal occurrences that we are observing and measuring in our research. It is my belief that in the immediate post-mortem state the surviving nuclei of consciousness does not suddenly become omniscient, i.e. does not suddenly know everything of the past, present and future as many people wrongly presume. I believe that the surviving consciousness continues to act for a certain period in terms of the psychic models it acquired while on Earth. The new state of existence may lead to a different and more effective consciousness – a more enlarged perception of reality – but this may come about only through a process of adaptation to the new environment.

Furthermore, the dynamism necessary to create new psychic models may involve the consciousness of both the living and the disincarnate. In many transcommunications technical means or technical problems and other references relevant to humans still on Earth are frequently mentioned. This situation suggests the persistence, in the surviving consciousness, of psychic models acquired during

Earth life. I believe that this is why almost all authentic transcommunications come from personalities who have passed over fairly recently. Consciousness while located in the near post-mortem plane is still influenced by experiences met with on the physical plane and therefore still manifests the same or similar psychic models to those held by people still on this plane. To structure new psychic models it is necessary to have an unfaltering will to supersede all previous existing idea systems with new ones, even if at first sight these new models can appear impossible or impracticable. In other words, in order to reach the desired target it is necessary to have faith that supposedly rational inferences can be set aside. Jesus Christ preached this concept when He spoke of "The faith that moves mountains".