

Nothing but the truth. The defendant's speech in the forensic psychology at the beginning

PAOLO MARCHETTI

Maybe not all of you know what forensic psychology is. Anyway, the same term helps us to observe the expansion of this field of studies. It consists of an intersection between two subjects, psychology and law, that did not happen a long time ago. No more than a century, I should say.

Medicine has very old terms of familiarity with law (in particular with the trial). The presence of a physician in the penal trial, to establish whether a person is able to answer for his own behaviour in court, is present in different ages from our own, even if in a really different form compared to the present. I will not linger upon this subject. There would be a lot of things to say. But this is not my point of issue. The psychologist's involvement in the trial is, on the contrary, very recent. However also psychology (as nowadays we understand it) is a young science. So, forensic psychology – even if this definition is too concise – is the science that studies the way of thinking and acting of the various trial actors: the

people of the jury, the judge, the witnesses, the victim, the defendant.

Among these and other subjects of study of forensic psychology, today I would like to talk to you only of the last one, that is the person who is suspected to have committed a crime. And I would like to tell you how forensic psychology took interest, since its appearance in courtrooms, in discovering the defendant's guilt by means of interviewing him. After all, the only person who surely knows how the things went, is the one who committed the crime.

On the basis of this undeniable truth, for centuries, torture was used in penal trial to obtain the accused's confession. But in the last decades of the Eighteenth century, on the pressures of the savage criticisms advanced, first of all, by the followers of the Enlightenment (Cesare Beccaria and Voltaire, just to mention two of them), all States soon abandoned this terrible way of interrogating the suspects of a crime¹. However, the passing of torture has not

erased the desire of finding a way to extract the truth, about the facts on which inquirers are trying to shed light, from the accused himself.

Well, having said this, I would like to enter into the reality of the present lesson asking a helping hand of a character of very great stature and generally well known, Sigmund Freud. This will help me introduce the subject.

In June 1906, Sigmund Freud went to the Law Faculty of Vienna, to give a lecture². He was invited by Professor Löffler, who taught Penal Law in that University. The theme of Freud's lesson concerned the relationships between *Tatbestandsdiagnostik* (term that in a neo-Latin language can be translated by the periphrasis "diagnosis of the fact") and psychoanalysis³. But what exactly was, the diagnosis of the fact? For some time, Professor Löffler was performing some experiments with his students. The "game", but obviously it was not a game, consisted in this. A thing was confided to a student, under pledge of secrecy during the examination conducted by a colleague of his. The person who pursued the interrogation, then, started to propose to the interviewee some words (called words-stimulus) to which he had to answer with the first word (called word-reaction) that came to his mind. What they had observed, in these cases, was that if the word-stimulus had some links with the question which had to be hidden, the answer ran into difficulties.

I will give an example. If the secret to hide was the murder of a man with a knife, when words like knife, blade, to cut, to run through, etc. were proposed, the answer was not in line with the others. That is, those ones given to neutral words such as home, sea, sun and so on. First of all, the con-

tent of the answer appeared unusual, often without any visible link with the suggested word; secondly the reaction time drew out, showing a difficulty for the interviewee in looking for an immediate verbal association; thirdly, also the reaction time of the following words drew out, that is, there was a sort of persistence of the effects of the word-stimulus in the next words; finally, if the sequence of words-stimulus was proposed again, the answers to those connected to the unspeakable event changed.

Thus they arrived at the conclusion the words that, somehow, touched the "secret" provoked some reactions that represented as many clues of the fact that the interviewee knew the events about which they were investigating.

Well, now I think that it is clearer why Freud went to speak to students, perhaps judges-to-be or police officers-to-be, of the relationship between "diagnosis of the fact" (that is, these experiments) and psychoanalysis. After all, also in psychoanalytical therapy (especially in the treatment of some forms of neurosis, like hysteria) Freud had begun to apply such a technique, even if not a long time hence. For who does not know it, the reason for which the technique of words-stimulus/words-reaction was used in these kinds of therapies was this: some emotions, very strong and capable of generating an inner struggle, sometimes hide themselves in a part of some persons that the consciousness is not able to reach. These repressed emotions cause a complex, capable of determining some disorders in the subject. So, the therapeutic work consists in giving freedom to these emotions, bringing them again to consciousness. The function of the words-stimulus is exactly to detect, thanks

to the strangeness of the way of answering, the complex hidden in the patient and to liberate him from his disorders.

It seems to Freud that the use of this technique in the trial and in therapy had many affinities. After all, they were two similar equations – he said – in which x , the unknown to be discovered, was situated in a different position. Even if there were surely some differences between the two situations. First of all, indeed, in judicial practice the interviewee was well aware of the “secret” that he had to hide. In the field of psychoanalytical therapy, on the contrary, the patient did not know what he had placed in his unconscious. Secondly, while in psychoanalytical treatment the patient and the therapist cooperated during the sessions in sight of a kind of “reward” that the sufferer would have received thanks to his good will, that is, his recovery, in judicial practice the suspect culprit would have done his all not to facilitate the work of the interrogator.

These and other reasons led Freud to express some misgivings about the use of such a technique in the field of penal justice. Again – Freud went on – in penal legislations of civilized countries, it was not permitted to surprise the accused with unusual modes of examination. And this would have obliged the investigators to inform the supposed culprit of a crime about the experiment to which he was to be submitted, making him shrewd in the answering process.

In spite of these reservations, Freud applauded the initiative, and suggested to the students and their professors to work hard on the technique and to perform many experiments. Till they arrived at the point where the results could be considered relatively certain.

During his lecture, Freud reconstructed the scientific path that had led to the discovery of the word-stimulus/word-reaction technique. At the origin of all, were the experiments performed by Wilhelm Wundt (the recognized founder of modern psychological sciences) during the eighties in his laboratory of psychology in Leipzig⁴. Other researchers applied themselves, then, to the study of reaction times through associative tests (I would like to remember a pioneer of these investigations in Italy, Giorgio Buccola)⁵. But all these experiments had been performed without specific purposes, not aiming towards a particular goal, and in a while they became stuck.

Nevertheless, in the early twentieth century, these studies were resumed in two different directions⁶. On the clinical plane they had been adopted by the Swiss psychiatrist Bleuler, and especially by his collaborator Carl Gustav Jung, for the cure of some type of neuroses. In the legal field, the use of the word-stimulus/word-answer technique had been investigated by Hans Gross (professor of penal law in various Austrian universities and true founding father of forensic psychology), in particular the issue had been studied by two of his students: Julius Klein and Max Wertheimer⁷.

In actual fact, the two ways of using the associative technique had not taken completely separate paths. Jung had immediately sensed the possibility of using these experiments to find the culprit of a crime. Actually, at a certain moment, he accused Wertheimer and Klein of having used his research who did not recognise him as deserving the credit of the intuition⁸. But then he changed his mind, admitting that the two young students of Gross had started

to work on this subject without knowing his studies. So there was no plagiarism.

Jung's interest for the forensic use of the associative technique lasted a long time, insomuch as in 1937 (more than thirty years after his first experiment) he was called by the Court of Assizes of Zurich to verify if through this method it were possible to detect the guilt of a dental mechanic, suspected of having committed a crime⁹.

The first time Jung used this means to identify a criminal was around 1905¹⁰. An acquaintance of his consulted him because he suspected that a young man, who was a regular visitor to his house, had stolen some money from him. For this reason he asked Jung to use hypnosis to detect if the young man were the real perpetrator of the theft. Jung answered him that the use of hypnosis was not useful in the specific case, but he declared himself ready to help him through a new method that he had elaborated shortly before. Once the young man was convinced, by means of an *escamotage*, to cooperate, Jung was able to recognise him as the culprit of the thefts and obliged him to confess. This was the stratagem: Jung persuaded the young man that a little trouble of his could be easily removed using some psychoanalytic sessions. But in the first meeting, Jung persuaded him of the importance, for the success of the therapy, to undergo the test of verbal associations. In this way he could trap him by means of well calculated words-stimulus.

In any case, the conviction that it were possible to detect the culprit of crime using this technique diminished after some time. And Jung himself recognized the method could not lead to any certitude¹¹.

I have just spoken of hypnosis. Of the call for help, made by Jung's acquaintance,

for detecting the young thief through this technique. The thing must not seem bizarre, because hypnosis is also connected with the issue of the discovery of truth in the penal trial.

The history of hypnosis is long, but the first one who asserted its therapeutic virtues (around the end of the eighteenth century) was a strange character, that is, the German doctor, Anton Mesmer¹². Mesmer was persuaded of the existence of a fluid that governed the life of the universe. This fluid could be transmitted from one person endowed with some particular qualities to another, causing the recovery of the subject suffering from some pathologies. But the patient, in order to be cured, had to be placed into a state that Mesmer called artificial somnambulism, that is, hypnosis.

Official medicine of those times denied Mesmer's theories with great vigour. Even if he continued to enjoy a good reputation in various European countries between the 18th and 19th century. In spite of the formal denial of the academic world, some persons, in a quasi-secret way, went on with the practice of hypnosis in the following years, even with therapeutic aims.

But to see hypnosis at the centre of attention of medical science, we must wait for about a century. That is, the eighteen seventies. The subject would be very long. I will try to summarize things.

The interest of medicine for hypnosis re-emerges, in particular, in France, where two different schools were founded by two eminent psychiatrists of that time: Bernheim in Nancy and Charcot in Paris¹³. In the opinion of Charcot, hypnosis was a kind of artificial neurosis. In other words, through hypnosis, it was possible to induce a condition similar to a neurosis

in the hypnotised subject. For this reason not all the subjects could be hypnotised, but only those who had an evident neurosis (in particular of a hysteric kind) or, in any case, a latent one. That is, people who were inclined to this mental disorder. Charcot, moreover, thought that hypnosis did not have any therapeutic effects.

Bernheim, on the contrary – and with him all the Nancy school – asserted that, on the basis of hypnosis, there was suggestion. Of course, suggestion was a force that worked even beyond hypnosis, but in this condition it took on a particular power. So, the subject placed into a hypnotic trance became a kind of robot, ready to obey all orders of his hypnotiser. In Bernheim's opinion, then, almost all persons could be hypnotised, and through hypnosis it was possible to cure several pathologies, when their origin was psychological and not physiological (that is, it was not the result of an injury of a function or an organ). This last position, over time, became the most followed one, and it is on the basis of Bernheim's indications that hypnosis research progressed, even if with results very far away from the initial positions of the psychiatrist from Nancy.

Besides several physicians, a lawyer and professor of law at the University of Nancy, Jules Liégeois, took part in the team of scholars who gathered round Bernheim. Liégeois, in particular, was interested in various implications that hypnosis could have on law¹⁴. In fact, if the hypnotised subject was an automat in the hands of his hypnotiser, there were a lot of situations that might have legal repercussions. First, the hypnotiser could abuse of the unconsciousness state of the man hypnotised (but I would say, more frequently of the

woman hypnotised) to commit a sex crime (and several cases of this kind became famous penal trials in those years). Then, the hypnotised subject could be induced to sign a bill of exchange or a will not wanting to. In the end, the hypnotised subject could be used to commit crimes in a hypnotic condition, like thefts and murders. Either in a hypnotic state, or in an apparently normal situation, that is, after the hypnotic session and owing to a hypnotic suggestion destined to have an effect after some time.

But there was also another question that might have judicial implications. So, if the hypnotised subject answered with uncritical attitude to the orders of his hypnotiser, hypnosis could be used to question the suspect of a crime to prove his guilt or his innocence.

Some researchers, in several European countries, began to work to verify if through hypnosis it were possible to do all these things. In Italy, for instance, Cesare Lombroso published in 1887 – in a review that he had started, named «Archivio di psichiatria» – an article in which he reported an experiment of his own, conducted inside a prison¹⁵. Lombroso, who had been called to cure a prisoner, had used hypnosis to eliminate some troublesome symptoms shown by the woman. But during the session he did not confine himself to intervene on the symptoms; he tried, even more, to drive her to confess her crime. But it had all been useless. What's even better, the woman put into hypnosis, surely guilty, as the trial had showed beyond all doubt, continued to repeat the version of the facts given in the courtroom. So she declared herself uninvolved with the crime that she had been charged with.

In the end, all of those who were interested in hypnosis concluded that the hypnotised subject was not exactly a robot in the hands of the hypnotiser. Even in deep hypnosis, in everyone, a residue of will was left that kept the hypnotised subject from doing those actions that were shown to be alien to his nature. So, no one would have committed a crime only because of a hypnotizer's order (unless he had not any objections to committing it), and no one would have confessed to an offence only for the fact that someone had ordered to do it in a hypnotic trance.

Well, hypnosis had failed as a method to penetrate the secrets hidden by a person, even before the technique of verbal association showed its inadequacies on the plane of judicial practice. On the other hand, regarding hypnosis, it must be not omitted that a lot of lawyers who at that period were interested in hypnosis, had shown their opposition to the use of this means of interrogation. By almost unanimous opinion, despite the being method painless, the logic that governed this kind of practice was too similar to the logic of torture to be accepted in a civil country. So, as torments deprived the person under investigation of his own will and obliged him to confess, through pain, even improbable facts, so too did hypnosis put the subject into such a disordered condition of consciousness, so that it was impossible to be sure of the truthfulness of his words¹⁶. Anyway, even if these experiments did not give birth to the expected results and were open to challenge, they helped to channel the attention of those who were interested in judiciary practice to an attentive psychological observation of the actors of the penal trial; in particular to the suspect of a crime.

But this short history of the search for truth does not finish here. There is another chapter to add. And maybe, in this case, the result of the matter has not to be considered a real failure.

Among the various things that Wundt and his researchers studied in the Laboratory of Leipzig were human emotions as well¹⁷. It was not the first time that someone spoke of them. From way back physicians, philosophers, poets and novelists had widely discussed the issue. Everyone under his point of view, obviously. But they all agreed on one issue, emotions, as a fact that involved the inwardness of a man, could not be considered objectively. That is, they could not be measured. The experimental approach to the psychology of Wundt, on the contrary, lead him to try to work on emotions not only to give them a descriptive look, but also a quantitative dimension. Among the first researchers who tried to study this subject in a scientific way there was an Italian physician too, that is, Angelo Mosso. In particular Mosso was interested in fear, and he wrote a very important treatise on this subject, published in 1884¹⁸. The goal of Mosso was to verify the effects of fear on the respiratory and cardiovascular systems. To that end, he invented an instrument that was named after him, that is, the sphygmograph of Mosso. The device was used for the measuring of the heartbeat. This was taken through the slight movements that occurred in the water of a basin where the hand of the examined subject had been immersed. The movements were transcribed by a rubber pipe on which a needle covered with carbon black was attached and which, moving, plotted the graph of the cardiac frequency changes onto paper.

The fact that these studies, which developed in the experimental psychology sphere, quickly moved into the legal investigation field, as up to this point it has been said, it would not represent a surprise. In Italy Cesare Lombroso was not late in verifying the effectiveness of these techniques in detecting the guilty party of the crime. In a couple of articles, published in the «Archivio di psichiatria», Lombroso reported two experiments of his own. In the first one¹⁹ he had been called by an investigating magistrate to conduct a psychiatric examination, because a hardened pickpocket, arrested for the umpteenth time, showed signs of insanity. Lombroso through the use of a device, the plethysmograph (that applied to a finger measures the peripheral blood flow), had concluded that the repeat thief was actually a mere simulator. In a nutshell, pretending to be a lunatic, he was trying to escape being punished. But Lombroso did not stop here. He arrived at the conclusion that the suspect was not guilty of the crime he was charged with, but of another one, which had gone unpunished until then. The reactions of the suspect to the pictures of the first crime, shown him, had not provoked any emotive reactions, on the contrary the response to the experiment in the case of the second crime had been different. Acquitted of the crime he was charged with, the recidivist (upon whom the inquirers had started to investigate thanks to the suggestions of Lombroso) was convicted for an offence he hoped to get away with. In the second experiment Lombroso²⁰, by means of a hydro-sphygmograph, had contributed to prove the innocence of a man charged with the rape and the murder of a little girl. Lombroso had shown the suspect some evocative pictures

of the crime and other neutral ones, and he had not detected any emotive variations. Clear sign, concluded the psychiatrist from Verona, that he was not involved with the matter.

The research on emotions measurement, anyway, increased in Italy and in other European countries. But if the study of emotions continued with alacrity, the experimentation on the possible implementation of the results of these discoveries in the penal trial stopped, at least in the Old Continent.

So, to arrive at the end of this story, we must take a long journey. We must cross the Atlantic Ocean, and land in the United States of America.

At the beginning of the Twentieth century a German psychologist, Hugo Münsterberg (who had studied in Wundt's laboratory, but then moved to Harvard University, in the USA), wrote several articles²¹ in which he criticized American lawyers because they completely ignored the progress made in Europe by science, in using innovative detective techniques during the juridical investigation.

One of the most important American professors of law at that time, that is, John Henry Wigmore²² answered, a little resentful, to these criticisms. The tone of Wigmore's answer was, more or less, this: the problem was not the carelessness of his colleagues, but the fact that the research done in Europe, besides not having reached the features of absolute reliability, were not translated into English. For this reason American lawyers could not be accused of any other ignorance but the superficial knowledge of German, French, Italian and Spanish. On the other hand – concluded Wigmore reasoning like a lawyer – while

in a European penal trial, the person suspected of a crime was obliged by law to be questioned by an investigating magistrate, in the American criminal procedure the accused could make use of the right not to answer, refusing to undergo any hearings or depositions. And this refusal could not be absolutely admitted as evidence for his prosecution. The consequence of this procedural difference was obvious. If someone had found a device able, in an indisputable way, to detect the truth, no one culprit, except those completely insane ones, would have voluntarily undergone such an experiment.

By the way, that Münsterberg's accusations were not absolutely baseless, is shown by the fact that Wigmore himself was interested in promoting the translation of the main European criminological works into English.

So, within a few years, in the USA too, research about the judicial applications of the results obtained in the field of experimental psychology was initiated²³. The psychologist William Mastrom proposed the use of a device for measuring blood pressure during an interrogation. On the basis of its changes – he asserted – it was possible to identify the moment in which the subject did not tell the truth. And this, because when the interviewee lied he went red, sweated profusely, breathed with difficulty. Following these conclusions, also other researchers begun to study devices able to detect liars (the so called lie-detectors). In particular, the technique proposed by John Larson, a police officer of Berkeley (in California), who tested a new device capable of measuring the changes of the breath and of the cardiovascular activity during an interrogation must be remem-

bered. Between the two researchers (who showed two different ways of verifying the truth of the interviewee's words) a bitter dispute broke out, that had its climax during one of the most famous legal matters in American history of the 20th century, that is, the kidnapping and the murder, in 1932, of the son of no more than two years old, of Charles Lindbergh, the first and celebrated long-distance flyer of the Atlantic Ocean.

As the saying goes, while two dogs are fighting for a bone a third is running away with it; and the third, in this case, was Leonard Keeler, who patented his version of the device in 1931. He introduced new improvements to the lie-detector, making it a real polygraph (term derived from Greek *polys* and *graphos*, that is, "many graphic transcriptions").

The polygraph – better known as lie-detector – is the device that established itself not only in courtrooms, but also in other sectors of society. For instance for personnel selection, in the case of confidential tasks.

Technically the polygraph – today totally computerized – is an instrument that measures, at the same time, the changes of emotional tone, moving from the assumption that probably a person, in a troublesome situation, shows a recordable alteration of heartbeat, of blood pressure, of breathing rhythm, of perspiration and of psycho-galvanic reflex (that is, the variation of the skin resistance to the passage of an electrical stimulus).

For completeness of information I must say that, at the present moment, no one can assert, with absolute certitude, that the results of a lie-detector are totally reliable. In other words, sometimes a person can lie, without the device realizing it.

Well, I am at the end of my path. I would just like to remind you that the use of these instruments is forbidden under Italian law (as well as by most other European legislations). In the Italian criminal procedure code there is an article (art. 64) that states: «methods or techniques able to influence the freedom of self-determination or to affect the capacity of remembering or valuing facts of the interviewee cannot be used, even with his consent». So, not only may the interviewee not be obliged to undergo this kind of experiment, but he cannot even ask to do it, while giving his consent, in order to persuade the judge of his innocence.

Unlike, in English-speaking nations this means is sometimes used. But in this case, as I said before, the defendant can

chose to take refuge in an absolute silence, and he can decide to take part in the trial only if he considers that this procedural strategy is useful for him. And then, the test of the lie-detector can be used only after an express request of the interviewee.

The reason for this difference of rules is connected to the dissimilar significance that the truth, established in a penal trial, has in the two juridical cultures. The Anglo-American area, known as common law, and that one of the continental European area, known as civil law. But the story would bring us too far. And the time allowed me has ended.

¹ P. Marchetti, *Testis contra se. L'imputato come fonte di prova nel processo penale dell'età moderna*, Milano, Giuffrè, 1994.

² S. Freud, *Tatbestandsdiagnostik und Psychoanalyse*, in «Archiv für Kriminalanthropologie und Kriminalistik», XXVI, n. 1, 1906, pp. 1-10; tr. it. *Diagnostica del fatto e psicoanalisi*, in *Opere*, Torino, Boringhieri, 1972, vol. V, pp. 237-250.

³ G. Zilboorg, *The Contribution of Psycho-Analysis to the Forensic Psychiatry*, in «The International Journal of Psychoanalysis», n. 37, 1956, pp. 318-324, p. 321.

⁴ U. Undeutsch, *Highlights of the History of Forensic Psychology in Germany*, in *Psychology and Law: International Perspectives*, edited by F. Losel, D. Bender, T. Bliesener, Berlin-New York, Walter de Gruyter, 1992, pp. 509-518, p. 509.

⁵ G. Buccola, *Sul tempo di reazione in un caso di demenza paralitica*,

in «Archivio di psichiatria», n. 2, 1881, pp. 170-173.

⁶ Undeutsch, *Highlights of the History* cit., pp. 509-510.

⁷ M. Wertheimer, J. Klein, *Psychologische Tatbestandsdiagnostik. Ideen zu psychologischen-epimentellen ethoden zum Zwecke der Feststellung der Anteilnahme eines Menschen an einem Tatbestande*, in «Archiv für Kriminal-Anthropologie und Kriminalistik», n. 15, 1904, pp. 72-113.

⁸ C.G. Jung, *Zur psychologischen Tatbestandsdiagnostik*, in «Zentralblatt für Nervenheilkunde und Psychiatrie», n. 28, 1905, pp. 813-818; tr. it. *La diagnostica psicologica del fatto*, in *Opere*, Torino, Boringhieri, 1984, vol. I, pp. 231-235.

⁹ C.G. Jung, *Zur psychologischen Tatbestandsdiagnostik. Das Tatbestandsexperiment im Schwurgerichtsprozess Näf*, in «Archiv für Kriminologie», n. 100, 1937, pp. 123-130; tr. it. *La diagnostica*

psicologica del fatto in un processo in assise, in *Opere*, Torino, Boringhieri, 1987, vol. II/2, pp. 431-441.

¹⁰ C.G. Jung, *Die psychologische Diagnose des Tatbestandes*, in «Zeitschrift für Schweizerische Strafrecht», n. 18, 1905, pp. 369-408, later in «Juristisch-psychiatrische Grenzfragen», IV, n. 2, 1906, pp. 3-47; tr. it. *La diagnosi psicologica del fatto*, in *Opere*, Torino, Boringhieri, 1987, vol. II/2, pp. 109-146, pp. 126 ff.

¹¹ C.G. Jung, *Le nuove vedute della psicologia criminale: contributo al metodo della diagnosi del fatto*, in «Rivista di psicologia applicata», n. 4, 1908, pp. 285-304 (now in *Opere*, cit., pp. 371-387, p. 378).

¹² H.F. Ellenberger, *The Discovery of the Unconscious. The History and Evolution of Dynamic Psychiatry*, New York, Basic Books, 1970; tr. it. *La scoperta dell'inconscio. Storia della psichiatria dinamica*, Tori-

- no, Boringhieri, 2003, pp. 66 ff.
- ¹³ Ellenberger, *La scoperta dell'inconscio* cit., pp. 99 ff.
- ¹⁴ J. Liégeois, *De la suggestion hypnotique dans ses rapports avec le droit civil et le droit criminel*, Paris, Alph. Picard, 1884; Id., *De la suggestion et somnambulisme dans leurs rapports avec la jurisprudence et la médecine légale*, Paris, Doin, 1889.
- ¹⁵ C. Lombroso, *L'ipnotismo applicato alla procedura penale*, in «Archivio di psichiatria», n. 8, 1887, pp. 243-246.
- ¹⁶ C.B. De Quirós, *Las nuevas teorías de la criminalidad*, Madrid, 1898; tr. en. *Modern Theories of Criminality*, Boston, Little, Brown and Company, 1911, pp. 242-243.
- ¹⁷ R. Thomson, *The Pelican History of Psychology*, Harmondsworth Middlesex, Penguin Books, 1972; tr. it. *Storia della psicologia*, Torino, Boringhieri, 1972, pp. 66-73.
- ¹⁸ A. Mosso, *La paura*, Milano, Treves, 1884.
- ¹⁹ C. Lombroso, *La polizia scientifica*, in «Archivio di psichiatria», n. 7, 1886, pp. 611-612 and Id., *Le più recenti scoperte ed applicazioni della psichiatria ed antropologia criminale*, Torino, Fratelli Bocca, 1893, pp. 273-278.
- ²⁰ C. Lombroso, A. Bonelli, *Innocenza di gravissima imputazione dimostrata dalla Antropologia criminale*, in «Archivio di psichiatria», n. 23, 1902, pp. 539-545.
- ²¹ Articles collected in H. Münsterberg, *On the witness stand*, New York, McClure, 1908.
- ²² J.H. Wigmore, *Professor Muensterberg and the Psychology of Testimony*, in «Illinois Law Review», III, n. 7, 1909, pp. 399-445.
- ²³ F. Sidoti, A.R. Casto, *Macchina della verità. Inventata in Italia ha successo in USA, perché?*, Roma, Laurus Robuffo, 2007.