

Legality of the use of truth serum as criminal evidence in the United States of America. The James Holmes case serves as a model

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Abstract

Criminal evidence has evolved in modern times and now depends on scientific methods and foundations. Perhaps one of the most controversial of modern scientific methods is the use of truth serum, which is a process whereby the accused or witnesses are questioned by specialists in the field to demonstrate the appropriate proofs of criminal evidence. This was the case in James Holmes, USA. Technological advances and current scientific developments have brought about a number of important changes and developments in the investigation and search for the perpetrators of various crimes. The means of investigation have become more scientific, without neglecting traditional investigation. The search for evidence now requires scientific skills and sophisticated techniques in step with the times.

Keywords: Serum truth - Criminal evidence - James Holmes - Proof.

Introduction:

Rules of evidence occupy a position of paramount importance across all branches of law, for a right unsupported by proof is tantamount to nonexistence. It is the evidence that substantiates the right and affirms its existence. This significance is even more pronounced in criminal law⁴, where the State's authority to impose punishment loses its legitimacy unless proof is presented before the judiciary establishing both the occurrence of the crime and its attribution to the accused. No individual may be held accountable for a crime or convicted thereof unless the act is attributed to them both materially and morally, and proven accordingly⁵. The importance of evidence in criminal proceedings also stems from the fact that a crime is an event rooted in the past, and the court cannot ascertain its truth except through elements that reveal the circumstances of those past events; namely, the evidence⁶.

With the progress of science and a considerable advance in scientific inventions and their proliferation, criminal investigation methods have become numerous and varied. They have become a major factor

Received: March 22, 2026; Accepted: August 16, 2026; Published: September 20, 2026¹

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⁴Dr. Imad Ahmad Rabee', *The Evidentiary Value of Testimony in Criminal Proof*, Dar Al-Thaqafa Library, Amman, 1st ed., 1999, p. 7. Cited in: Prof. Kawthar Ahmad Khaland, *Criminal Evidence Through Scientific Means: A Comparative Analytical Study*, Tafsir Office, Iraq, 1st ed., 2007, p. 28.

⁵Dr. Saeed Hasballah Abdullah, *Explanation of the Code of Criminal Procedure*, Dar Al-Hikma, Iraq, 2nd ed., 1998, p. 345. Cited in: *op. cit.*, same reference and location.

⁶*Op. cit.*, same reference and location.

in identifying and pinpointing criminals. These include the use of truth serum¹ or, as we say, the narcoanalysis process. This raises the following issues: **What is the authority of truth serum or narcoanalysis in criminal evidence for U.S. legislation to model the case of James Holmes?**

In order to address this question, we have adopted a classic bilateral plan in which we approach researchers and each research has two requirements. The basic concepts of criminal evidence and the seriousness of truth is the first requirement in the concept of criminal evidence, The second requirement is that we approach the concept of truth serum. With regard to the second examination, we address the truth serum in the James Holmes case in the United States of America. Its second claim concerned the opinions of legal and psychological professionals on the use of truth serum and concluded the study with a series of conclusions and recommendations.

As a methodology for this topic, we adopted a descriptive approach in order to address certain definitions and clarify some basic principles of the subject. The study was then illuminated by an analytical approach to analyze and explain the narcoanalysis process from the point of view of American legislation, using the James Holmes case as a model.

First Section: Basic concepts of criminal evidence and truth serum

Criminal evidence is one of the important issues of our modern age for the evolution of modern methods such as the use of truth serum, and this is what we will try to clarify in this study, where we will address the concept of criminal evidence in the first requirement, and then in the second, we will address the concept of truth serum.

First Requirement: the concept of criminal evidence

We will discuss the concept of criminal evidence, addressing its definition in section I, then the types of criminal evidence systems and clarifying the system adopted in the United States of America, and finally, in section IV, modern evidence by scientific means.

First Part: Definition of criminal evidence

Criminal evidence is intended to demonstrate to the competent authorities a fact of a legal nature under the conditions defined by law and in accordance with the rules to which it is subject². Proof is considered to be a piece of evidence, a demonstration, or an argument. Proof is what stabilizes the author's right after it has been disordered between the parties to the dispute. One would say "I will only be judged on the basis of evidence", i.e. on the pretext that the claim has been established. The assertion of the right to evidence is also called proof and indeterminate wording, which is attributable to anyone who has confidence in their statement.³

It can therefore be said that criminal evidence is a means of establishing the facts of the case, in accordance with the methods established by law, or of corroborating the occurrence of the crime and its attribution to the accused⁴.

The bottom line is that proof is characteristic; to reveal the truth, whether by convicting the accused of the charge against him or of his innocence, it serves a dual function, not just to accuse the people⁵.

Second Part: Types of criminal evidence systems

¹Dr. Mohammad Farij Al-Atwi, *Investigators' Use of Technological Tools and Their Relation to Crime Detection*, Doctoral Dissertation, Criminology Specialization, Graduate School, Mutah University, Jordan, Academic Year: 2008–2009, p. 2.

²Dr. Mahmoud Naguib Hosni, *Explanation of the Code of Criminal Procedure*, Dar Al-Nahda Al-Arabia, Cairo, no edition specified, 1982, p. 417.

³Mujma' al-Lugha al-'Arabiyya, *Al-Mu'jam al-Wasit*, Part I, Egypt, 3rd ed., 1985, p. 93.

⁴Dr. Saeed Hasballah Abdullah, *Explanation of the Code of Criminal Procedure*, Dar Al-Hikma, Iraq, 2nd ed., 1998, pp. 345–346. Cited in: Prof. Kawthar Ahmad Khaland, *op. cit.*, p. 31.

⁵Prof. Kawthar Ahmad Khaland, *op. cit.*, p. 31.

There are several types of criminal evidence systems: the so-called free evidence system (I), the legal evidence system (II) and, finally, the mixed system, which is based on a combination of the first systems (III).

I. The Free Evidence System

This is also known as the system of persuasive evidence or the absolute doctrine, which does not identify certain evidence, in which the law leaves litigants free to adduce whatever evidence they can to convince the judge, and lets the judge form his or her own conviction from any evidence submitted to them. This approach facilitates the judge's unlimited access to the truth, and makes judicial truth identical to factual truth, recognized by the eye of justice. The free doctrine is taken up by Germanic and Anglo-Saxon law (largely German, Swiss, English and American law)¹.

II. Legal Evidence System

In the course of their development, certain positive laws have seen the shortcomings of the judge's power taken into account and reduced by:

- Carefully restrict and distribute the means of evidence and determine the value of each of them, so that adversaries can no longer prove their rights other than by these means, and the judge cannot give any of them a higher or lower value than that provided for by law.
- The judge's obligation to terminate the proceedings in such a way that justice cannot hold him impartial with his own knowledge is only required by the proceedings before him.
- The judge must not take evidence limited to that which is submitted to him, and must not demand evidence supplied by an adversary before the latter has had an opportunity to discuss it. The most important feature of this doctrine is the restoration of trust and confidence in souls and the stabilization of proceedings².

III. The Mixed System of Criminal Evidence

This is a system that combines a restrictive and a free evidence system, and prevails in many current legislations, which embrace the principles and system of free evidence as a whole, as an exception and for specific offences within the restricted evidence system. Some have argued that the mixed system of evidence is the result of the evolution of the concept of free evidence and certain exceptions to it³.

Third Part: Modern Scientific Evidence

This involves using the scientific and technical methods revealed by modern science in the field of establishing the crime and attributing it to the perpetrator or acquitting him of the charge. Based on that, the expert plays a key role, and forensic evidence is the most important piece of evidence, which is subjected to thorough scientific examination in order to find conclusive proof of guilt or innocence. The rationale behind the system is that criminals themselves have begun to exploit the results of scientific progress and the development of technology to commit crimes or conceal their characteristics in such a way that they are very difficult to detect and identify⁴.

The system of scientific evidence attracted the attention of positivists, who preferred it to other rules of criminal legislation, and predicted that the system of future scientific criminal proof would replace

¹Prof. Arif Ali Arif Al-Qaradaghi, *Series of Jurisprudential Research on Contemporary Issues: Contemporary Jurisprudential Matters*, Ayom Press, no place of publication, no edition, no publication year, p. 32.

²Dr. Mahmoud Mustafa, *Evidence in Criminal Matters in Comparative Law*, Cairo University Press, Egypt, no edition specified, no publication year, p. 168. Cited in: Prof. Faisal Musaad Al-Enezi, *The Impact of Evidence Through Modern Technological Means on Human Rights: A Foundational Comparative Study*, Master's Thesis in Criminal Justice, Islamic Criminal Legislation Specialization, Graduate School, Naif Arab University for Security Sciences, Academic Year: 2006–2007, pp. 103–104.

³Dr. Mohammad Oudah Al-Jubour, *Lectures on the Fundamentals of Criminal Procedure*, Middle East University, Jordan, Academic Year: 2010–2011. Cited in: *ibid.*, p. 21.

⁴Prof. Kawthar Ahmad Khaland, *op. cit.*, p. 34.

the system of the judge's personal freedom of conviction. It should be noted that this system is currently applied in legislation as well as in the judge's personal conviction, so it is safe to say that it probably is not part of the new system. Some criticize this development as undesirable, because it means that the expert becomes the judge of the proceedings. As a result, the defendant is deprived of the guarantees of his personal freedom established in accordance with constitutions and laws. In particular, the determination of the criminal case raises legal questions on which the expert has no opinion¹.

Second Requirement: the concept of truth serum

Truth serum, or narcoanalysis, is one of the means used to achieve the desired truth in the commission of crimes. In order to get to know this means, we will discuss the historical root of truth in section I, then define the process of narcoanalysis using truth serum in section II. Finally, in Section III, we will discuss the distinction between truth serum pathway narcoanalysis and some similar terms.

First Part: The historical roots of truth serum

Primitive peoples tried to use certain narcotic herbs by mixing them with wine. If darkness fell, the guilty party would confess to the crime they had committed. The ancient Mexican people also used the fruits of narcotic chalices to detect perpetrators. Amazonian tribes also forced the accused to smoke large quantities of herbs until they confessed to their crime².

In 1922, a doctor at the Dallas District Jail injected the culprits with scopolamine and concluded that they had committed the acts attributed to them³.

In 1925, researcher P. R. Vissie published Symptoms Associated with the Use of Scopolamine, in which he reported that a person under the influence of this psychiatric drug is unconscious, when its administration is controlled, so that he is incapable of doing evil, i.e., of lying⁴.

In 1930, scopolamine entered the Texan criminal sphere as a means of psychological analysis⁵. In the same year, the English scientist Hoarsely reported that he had noticed that a person under the influence of certain types of narcotic substances was overflowing with information and secrets, particularly those of which he or she would have been fully aware and conscious. He summarized his idea of the possibility of psychoanalyzing the subconscious by injecting a person with amytal sodium. This process of psychoanalysis is what has come to be known as narcoanalysis⁶.

Since then, real experiments in the use of these substances have taken place with the defendants during the investigation, and several criminal investigations have been published in this regard, including reference to the use of these drugs in the concentration camps of the First World War. American physician Robert House reported using scopolamine with one of the burglary defendants, who confessed to committing one while denying having committed the second. He noted that this substance has an enormous impact on certain brain centers, which offers the possibility of dialoguing with the interrogator under its influence with his secrets, where he does not lose the ability to hear, speak and respond, but the ability to act voluntarily, and he received correct answers in all cases treated in this way⁷.

¹Dr. Imad Mohammad Ahmad Rabee', *Presumptions and Their Evidentiary Value in Criminal Proof*, Dar Al-Kindi, Jordan, no edition specified, 1995, p. 13. Cited in: Prof. Kawthar Ahmad Khaland, *op. cit.*, p. 36.

²Dr. Mohammad Farij Al-Atwi, *op. cit.*, p. 26.

³*Op. cit.*, p. 26.

⁴Dr. Ghazi Mubarak Al-Dhneibat, *Hypnosis in Criminal Investigation: Between Legitimacy and Application*, Scientific Symposium on the Legal and Sharia Aspects of Using Modern Scientific Methods in Criminal Investigation, Amman, April 23–25, 2007, Center for Studies and Research, Naif Arab University for Security Sciences, Kingdom of Saudi Arabia, p. 9.

⁵Dr. Hussein Mahmoud Ibrahim, *Modern Scientific Methods in Criminal Evidence*, Dar Al-Nahda, Cairo, no edition specified, 1981, no page number. Cited in: Dr. Mohammad Farij Al-Atwi, *op. cit.*, p. 26.

⁶Dr. Hassan Mohammad Rabee', *Protection of Human Rights and Newly Developed Methods of Criminal Investigation*, Doctoral Dissertation, Alexandria University, Egypt, Academic Year: 1984–1985, no page number. Cited in: Dr. Mohammad Farij Al-Atwi, *op. cit.*, pp. 26–27.

⁷Robert House, "Use of Scopolamine in Criminology," *American Journal of Police Science*, 1931. Cited in: Dr. Ghazi Mubarak Al-Dhneibat, *op. cit.*, p. 8.

Second Part: Definition of narco-analysis with truth serum

The method of analysis by certain narcotic substances is an artificial method that causes a human being to faint, weaken his voluntary system or feeling and paralyze his function, so that all his thoughts appear on his tongue in an uncontrolled manner¹.

Truth serum is also a narcotic used to create a kind of disturbance in an individual's voluntary control, resulting in a relaxed situation in which a person's will is suppressed without affecting cognition or memory, and making a statement within themselves without suppressing perception, distinction and freedom of choice².

Psychologists also regard the use of narcotics as psychological narcoanalysis, which aims to uncover the subconscious and attempts to bring to light ideas, tendencies, habits and memories in the subconscious³.

Third Part: Distinction between truth serum path narcoanalysis and some similar terms

The use of truth serum or, as we say, the narcoanalysis process is similar to some of the terminology and certain processes used in the field of criminal evidence using criminal psychology, so we will address the distinction between narcoanalysis and psychoanalysis (first) and then the distinction between narcoanalysis and hypnosis (second).

Firstly: Narcoanalysis and psychological analysis

Narcoanalysis is a particular psychoanalytical method, and although there is a similarity between the two means of research, they differ fundamentally. Psychoanalysis aims to reach the memories and desires of the human ego's subconscious self to study the subordinate's personality, without involving the loss of his or her control, feelings and voluntary control. Narco-analysis is used to influence the will of a subordinate person in order to obtain information from him or her that would have been proprietary to his or her will and freedom of choice⁴.

Secondly: Narcoanalysis and hypnosis

Hypnosis is a kind of sleep for certain mind machines that appear to be artificially hypnotic by suggesting the idea of sleep and, in the case of sleep, reduces the sleeper's external contact, limits itself to the sleeper's personality, obscures the sleeper's poetic self and keeps the subconscious self under the sleeper's control, thus paralyzing the basic function of the human mind⁵. Thus, narcoanalysis involves presenting an anesthetic substance to the interviewee, while hypnosis involves suggesting that the person sleep through the intermediary of a specialist.

Second Section: Truth serum at the James Holmes Case, USA

The use of truth serum (narcoanalysis) evolved in the United States of America thanks to the presence of doctors who specialized in this field and carried out extensive research. Doctors began to consider the use of this method in the field of criminal evidence, striving to question the accused or take into account his mental integrity and way of thinking during the commission of the offence. Among the cases that attracted the attention of the general public, as well as legal professionals and psychologists, was the James Holmes case.

First requirement: Definition of the James Holmes case in the United States of America and its connection with the truth serum

¹Dr. Mustafa Al-Awji, *Human Rights in Criminal Proceedings*, Nawfal Publishing, Beirut, 1st ed., 1989, p. 613.

Cited in: Prof. Kawthar Ahmad Khaland, *op. cit.*, p. 67.

²Prof. Imam Mohammad Amaluddin, *Criminal Responsibility in Positive Law and Islamic Sharia*, Dar Al-Buhuth Al-Ilmiyya, Kuwait, 1st ed., 1983, p. 403.

³Dr. Ghazi Mubarak Al-Dhneibat, *op. cit.*, p. 10.

⁴Dr. Imad Ahmad Rabee', *The Evidentiary Value of Testimony in Criminal Proof*, Dar Al-Thaqafa Library, Amman, 1st ed., 1999, pp. 248–249. Cited in: Prof. Kawthar Ahmad Khaland, *op. cit.*, pp. 67–68.

⁵Prof. Faisal Mussaid Al-Anzi, *op. cit.*, p. 173.

The James Holmes case is a case that has occupied the American public in the United States of America, particularly in relation to the truth serum (narcoanalysis). In this paper, we will attempt to give a definition of the James Holmes case in the United States of America in Section I. Next, we will discuss the method of using narcoanalysis or truth serum in Section II. Finally, in Section III, we will discuss the views of legal and medical professionals on the use of truth serum in the James Holmes case.

First Part: Introduction to the James Holmes case in the United States of America

James Eagan Holmes is the defendant in the July 20, 2012 indiscriminate shooting at the Aurora City Cinema Hall in Colorado, USA, during the premiere of a Hollywood movie famous for Batman, and the deliberate shooting resulted in a massacre that killed 12 people and injured 70¹. James, born December 13, 1987, is a PhD researcher at the University of Colorado, Denver. An American national, he was not known for his violence, had no criminal record prior to the incident and was renowned for his intelligence. Some reports indicate that he was somewhat introverted and associated with the Lutheran Church².

Prior to the massacre, James Egan Holmes purchased small arms such as a Glock22 pistol, tear gas, a semi-automatic rifle and a bulletproof shield. He also mined his house and blew it up before carrying out the operation³.

The police arrested him not far from the scene of the crime, after questioning him and confronting him with the charges brought against him. Based on the evidence found on him, such as weapons and the like, the Public Prosecutor's Office charged him on July 30, 2012 with premeditated murder⁴.

The defendant's trial was delayed until December 27, 2015 due to multiple psychiatric examinations and an assessment of Holmes' mental state, and the case was adjourned several times for consideration of the evidence submitted, but what catches our attention before the formal announcement of the opening of the trial is that the defense lawyers wanted to prove that the defendant was insane and that there was no point in trying him, since insanity is considered preventive of the trial. The unconstitutionality of the court judge's obligation to enter the trial and insist on the accused's insanity would lead him to decide to subject the accused to a narcoanalysis, namely the use of truth serum, the degree of consciousness and the mental state of the accused during the commission of the crime, and the supervision of the diagnosis by the public prosecutor during the use of the truth serum and by specialists and psychologists. The decision provoked public opinion and led to many jurists and psychologists giving their opinion in this field⁵.

Second Part: Method of using narcoanalysis or truth serum

Narco-analysis is psychological research that involves disrupting an individual's voluntary control and removing subconscious obstacles to the identification of information stored in the human psyche, resulting in emotional effects and previous trauma in the case of cognition. This analysis is carried out by specialists in the field⁶. Narcoanalysis is carried out in the following stages:

First, prepare the test subject psychologically, by relaxing on the bed and resting his or her head on a pillow in a quiet, dimly lit area, to prepare him or her to accept the injection process⁷.

¹Mr. Lauren Fruen, CINEMA SLAYING Who is James Holmes and where is he now? Aurora shooting gunman who killed 12 in Colorado movie theatre massacre, 26th July 2017, 6:35 pm, <https://www.thesun.co.uk>

²Mrs. Susan Gembrowski, Ms. Marisol Bello and Ms. Trevor Hughes, "A closer look at Aurora shooting suspect James Holmes", (July 21, 2012), 03:05 PM, <http://usatoday30.usatoday.com>.

³Ms. Shelley Jofre, The Batman Killer- a prescription for murder?, BBC UK, 26 July 2017, website: http://www.bbc.co.uk/news/resources/1dt-sh/aurora_shooting.

⁴The Gazette, Key dates in the James Holmes theater shooting trial, July 16, 2016, 03:42 PM, <http://gazette.com/key-dates-in-the-james-holmes-theater-shooting-trial/article/1555743>.

⁵op, cit.

⁶Mohammed Farij Al-Atwi, op. cit., p. 28.

⁷Mohammed Farij Al-Atwi, op. cit., p. 28.

Secondly: a certain dose is injected intravenously, but in limited quantities, to avoid unacceptable results in certain cases, such as coma and death, depending on the person's sensitivity to the influence of the truth serum. The choice of expert for this type of analysis must therefore be made with the utmost care¹. The injection takes place in the morning, without the person drugged by the truth serum having eaten anything².

The final stage is, then, when the subject of drug influence approaches the unconscious state. This is where the will disappears and the person begins to talk about their private life, revealing things they would not have revealed in their natural state of consciousness, bringing to the surface pressures repressed deep in their subconscious, talking about their forgotten past, getting rid, under the influence of this anesthetic state, of all the secrets that burdened them and that they would not wish to uncover³.

Second requirement: Legal and medical experts' views on the use of truth serum in the James Holmes case

The use of narcoanalysis (truth serum) to prove the insanity of James Holmes during the commission of his crime has generated controversy, leading several legal and psychiatric professionals to offer their opinions on the validity of the decision, which we will discuss in Section I and Section II respectively.

First Part: Experts' views on the use of truth serum in the James Holmes case

Counsel for James Holmes was triggered when the judge ruled that, if the defense was based on the defendant's insanity during the execution of the murder, he would issue a court order to subject the defendant to narcoanalysis or truth serum under the supervision of the prosecutor. The judge considered this process to be part of the psychological evaluation and not evidence against the accused.

The background to the case was relatively similar to that of a case in France, in which a French policeman had used violence against a detainee during the suppression of an insurrection in a prison, where he claimed to have lost the ability to speak. The examining magistrate ordered that he be referred to a medical commission for disclosure. The commission, made up of three psychiatrists, injected him with a thiopental sodium anesthetic and found that he was fabricating speech incapacity. In denying him his right to silence, the French courts ruled against him on the grounds that the doctors' mission was to ascertain his state of health, not to interrogate him⁴.

The defendant's lawyer, James Holmes, criticized the operation for several reasons:

Initially, Narcoanalysis infringes on the rights of the accused. Among his rights is the right to silence, approved by the Federal Constitution of the United States, and no one may be compelled to testify against himself, in accordance with the Fifth Amendment to the Federal Constitution of the United States of America⁵. The defendant, as an American citizen, is protected in accordance with his constitutional rights, and his rights must be respected, with no derogations allowed. This is what we explore from the content of the Fourteenth Amendment in its first paragraph of the U.S. Constitution⁶.

¹Sultan Al-Shawi, *Principles of Criminal Investigation*, University of Baghdad Press, Baghdad, no edition, 1981, p. 236. Cited by: Kawthar Ahmed Khaland, op. cit., p. 68.

²Mohammed Farij Al-Atwi, op. cit., p. 28.

³Ibid.

⁴Ghazi Mubarak Al-Dhunaibat, op. cit., p. 16.

⁵Amendment five of The Constitution of the United States of America (1789): "No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation".

⁶Amendment 15 section 01 of The Constitution of the USA: "All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws".

Secondly, it has been legally established that no means of coercion, material, moral or otherwise, may be used to infringe the freedom of the accused to obtain a confession. and, in particular, given the attention paid by the various legislations to the accused. It is coercion even if the consent or request of the accused is made in a state of unconsciousness, and any confession resulting from such coercion is invalid.

Furthermore: truth serum or narcoanalysis of the person's insanity based on his or her perception can lead the accused to talk about the substance of the case, and the burden of proof lies with the prosecution.

Following this, the narcoanalysis serum is dangerous to the accused's health, such diagnoses put their client at risk and his right to physical integrity is legally guaranteed.

Lastly, the right of denial is considered to be a right of the accused and his defense rights and therefore a violation of the law.

Second Part: Medical experts' views on the use of truth serum in the James Holmes case

From a medical point of view, doctors have divergent opinions: some support the notion of narcoanalysis and consider that it is a procedure that can reveal the accused's consciousness, whether or not at the time the crime was committed, while others consider that the procedure is not dangerous and that it can reveal certain elements of the accused's personality.

However, some doctors, like Dr. Michael Aronov, a specialist in clinical psychiatric medicine, considered insanity to be a legal defense rather than a medical diagnosis, and that if they tried to establish a medical procedure to attempt to set a legal standard, it would not work, and considered that when a person underwent anaesthetizing substances (truth serum), the aim in such a situation is to bring the man out of his psychological inhibitions and reveal the hidden part or something he does not realize he knows. Yet, Dr. Michael Aronov felt that inhibition of the brain and central nervous system did not mean that all that would come out of the man would be truthfulness, because truth serum releases the power of speech, and speech is a combination of ideas and impressions and thus, there is no conclusive medical evidence that truth serum is a reliable means of assessing the truth of James Holmes¹.

Conclusion:

In this day and age, it is no longer possible to rely solely on traditional methods of criminal evidence; instead, we must keep pace with the evolution of modern scientific means. Technology evolves, crime evolves, and some crimes have become difficult to prove in the conventional way. The alternative is therefore to use scientific means that are more effective than traditional ones, making it easier for us to arrive at the desired truth. These include narcoanalysis, or the truth serum used by psychologists to detect subconscious patterns and facilitate evidence, and which can reveal facts relating to the details of other crimes, particularly in the field of serial killers, complex crimes and so on. In the United States, the narcoanalysis process has come up against (truth serum) the principle of the right to silence, which is a constitutional principle and a right of the accused to be respected, as we have already mentioned. The use of this right can force the accused to testify against himself. But in practice, American justice uses narcoanalysis in the field of mental and psychiatric evaluation and introduces it into the field of medical expertise in general, as we saw in the James Holmes case. But, the case of James Holmes is complicated because submission to the truth serum can verify mental integrity, which led to his indictment for first-degree murder and the jury's consensus on his execution, forcing lawyers to reverse insanity so as not to know the defendant's true status so that he could at least be sentenced to life imprisonment, which is what happened when he was sentenced to life imprisonment due to the jury's

¹Ryan Jaslow, "Truth Serum" eyes in James Holmes trial: What is it?, CBS NEWS, March 12, 2013, 05:45 PM, Website: <https://www.cbsnews.com>.

unanimity on the death penalty, forcing the judge to pronounce a sentence of 3318 years, the longest life sentence in the history of the United States of America, without the possibility of parole.

In addressing this issue, we have reached a series of conclusions:

-The narcoanalysis (truth serum) process is a modern and contested means of criminal evidence. Jurisprudence on this issue is incompatible with the opinion of a proponent and an opponent.

- The process of narcoanalysis is achieved by involuntarily anesthetizing the accused and accessing his psychiatric trauma through interrogation while he is in a state of unconsciousness.

- The use of truth serum in the United States of America is contrary to constitutional principles and the rights of the accused.

- The legislation of the United States of America has not been subjected to the preventive technique of narco-analysis in particular, but has surrounded the accused with a set of constitutional guarantees.

In accordance with this study, we recommend the following:

- The promotion of studies on modern criminal evidence .

- The need to establish psychologists in the field of narcoanalysis, in particular to examine certain exceptional situations requiring expertise.

- The establishment of specialized research teams in the field of criminal evidence using modern techniques, and coordination of cooperation between research laboratories.

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