

Application of Polygraph Technology in Criminal Procedure

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Abstract

As the product of modern science and technology development, polygraph technology has had significant influences on the operation of criminal judicature. The scientific operating principles and methods of polygraph technology are the technical conditions for its application in domain of criminal procedure, but the key for actual application of polygraph technology in criminal procedure lies in that it has to produce useful effects on the value goals of criminal procedure. The analysis results indicate that polygraph technology has positive effects on realizing judicial fairness, improving judicial efficiency and guaranteeing the rights of criminal suspects and defendants. Under this premise, polygraph technology acts on different stages of criminal procedure by means of technical investigation measure, lie detection measures and other forms to serve value pursuit of criminal procedure. Based on the above mentioned situation, basic principles for application of polygraphy technology in criminal procedure should be established under the guidance of procedural justice concept.

Key words: Polygraph technology; Criminal procedure; Value; Application, Principle

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INTRODUCTION

Science and technology have had profound effects on the operation mechanism and techniques of laws, and polygraph technology, as a kind of science and technology, is playing an unexceptional role in this, and especially has extensive use in the domain of criminal judicature. The so-called “lie detection” is just an informal saying, and its academic name is “multi-parameter psychological test technique (tester)”. When applied in the domain of justice, it is also called for judicial psychological test technique. Firstly, specialized testing personnel or investigation technicians conduct scene investigation, analyze characteristics and processes of criminal activities, and portray mental traces of criminal suspects. Then, after psychological experiments are conducted with comprehensive question organization technology and multiple psychological testers are used, psychological stimulation and physiological reflection of the testees during the test procedures will be described and recorded. Finally, some relations between the testees and criminal activities can be concluded from the above mentioned results. (Yang, 2001) The essence of judicial psychological test technique lies in identifying the authenticity of the testees’ statement by analyzing and judging the descriptions of changes of the testees in physiological parameters caused by psychological stimulations to determine relations between the testees and case facts. As there is wanting in clear and definite provisions and recognition of polygraph technology in Criminal Procedure, the application of polygraph technology in Criminal Procedure stirs up heated discussion among scholars. This paper will talk about the value of polygraph technology in criminal procedure on the theoretical level and summarize the application patterns of polygraph technology on the practical level.

1. APPLICATION VALUE OF POLYGRAPH TECHNOLOGY IN CRIMINAL PROCEDURE

In fact, since the year of 1895 when Italian criminal psychologist Cesare Lombroso utilized scientific instrument to conduct lie detection for the first time, application of polygraph technology has become closely related to criminal procedure. How come this situation appears? Is there any necessary relation? Hereon, it is necessary to conduct some exploration on the value of polygraph technology application in criminal procedure, and this may provide some thoughts to answer the puzzlement encountered in the practical application of polygraph technology.

Criminal procedure refers to activities of specialized state organs in accordance with functions and powers and procedures prescribed by law so as to prosecute crimes on the basis of case facts and solve the defendant’s criminal responsibility by law, including investigation, prosecution, trial and execution and other basic stages.

From the angle of objective value, modern criminal procedure pursues justice, efficiency, human rights, freedom, order and other basic values. The process of criminal procedure is the process of realizing all these basic values. The application of polygraph technology in criminal technology is due to its unique function in realizing the value pursuit of criminal litigation.

1.1 Lie Detection and Judicial Justice

As the primary value goal pursued by human society, justice is the ultimate value goal of modern the judiciary and the basis of life of the judicial system, as well as the inherent essential attribute of the judiciary. “The core of the judiciary is justice; without justice, the judiciary will lose the foundation of existence.” (Xiao, 2002) Judicial justice refers to the justice of the dispute resolution process and results of judicial office by law, including entity justice and procedure justice, also named as substantive justice and formal justice. Entity justice, also named as result justice, refers to justice embodied in the end processing of the case entity which means the justice of court decision. To realize entity justice, the following three requirements should be satisfied: (a) the case has clear facts and solid and sufficient evidences which is the premise of correct application of law; (b) there should be accurate evaluation which refers to clearly distinguishing the dividing line between guilty and innocent and between one crime to the other on the foundation of the first requirement and in accordance with law; (c) the right law shall be applied, conviction and sentencing shall be conducted in accordance with law. It can be seen that identification and affirmation of authenticity of case facts are the basis and premise conditions to realize entity justice. If the case facts can not be found out clearly, and the affirmation stands wrong, no case justness pursued by the judiciary can be realized even if the right law is applied, because affirmation results established on the basis of wrongness are far from justice.

As polygraph technology can help find out the case facts, the positive effects of polygraph technology on judicial justice lie just in its positive functions on judicial entity justice rather than procedure justice. The lie detection personnel follow certain rules to utilize polygraph to record the series of physiological parameter changes of the testees (the accused) while answering questions. After analysis of atlas recorded by polygraph technology, judgment can be reached on whether the testees have lied while answering questions. As polygraph technology is scientific and of high accuracy, it can provide powerful reference for excluding the innocent and identifying the crime subject in different stages of crime procedure, provide evidences for identifying the authenticity of litigant’s statement, provide reliable evidence for finding out crime facts, provide explicit fact evidence for court decision, and lay fact foundation for realizing entity justice, thus ensuring the realization of judicial justice.

1.2 Lie Detection and Judicial Efficiency

Studies of economics and practices of human society have indicated that resources are limited while human requirements are infinite. Therefore, the optimal allocation of resources has become a major issue faced by human beings. In the domain of the judiciary, the pursuit of efficiency is also originated from the contradiction between human's demands for the judiciary and the limited judicial resources. Therefore, in modern legal country, the principle of efficiency has been popularly recognized as a principle of rule of law in modern Criminal Procedure, which means that the ones who are accused have the right to be trialed within proper time, while the judicial efficiency pursued as modern judicial value refers to requirements for speed and efficiency of every main body behavior in the process of judicial activities which can be manifested on two levels: (a) to rapidly and effectively solve disputes is the most visible and basic expression of judicial efficiency; (b) to strive to gain maximum benefits from minimum resource investment is the core expression for realizing judicial efficiency. (Yao, 2006) Then, what are the influences of polygraph technology on judicial efficiency? This question will be analyzed in the following from two aspects.

1.2.1 Time Efficiency of the Judiciary

“Justice Delayed is Justice Denied”. As an important criterion to measure the goodness of the judiciary, time efficiency of the judiciary requires judicial system to timely restore judicial order to realize the goal of judicial justice. To be specific in criminal procedure, it requires timely discovering criminal facts, punishing crimes, safeguarding national security and social public security, and maintaining social order. Timely litigation requires controlling litigation period, speeding up rhythm of litigation, shunting criminal cases, and simplifying litigation procedures. Considering the particularity and time consuming feature of detective work, how to shorten the investigation period and solve the case soon becomes one of the ways to improve judicial efficiency. While the traditional way is to line up to carry out investigation, and then find and determine criminal suspect, the use of polygraph technology in criminal investigation stage can give full play of its technical advantage to survey criminal suspects, exclude the innocent, determine key criminal suspect, shorten the period of handling the case, and improve investigation efficiency. Meanwhile, the results of lie detection can also provide some references to the judge as for cases with insufficient evidences to shorten the case handling time. From this point, polygraph technology has positive correlation function for judicial efficiency.

1.2.2 Cost Efficiency of the Judiciary

The limited judicial resources require us to save cost to the greatest extent in the aspect of judicial resource investment. In criminal litigation, judicial cost investment

includes investment of parties in action, prosecuting authority's investment in investigating, adopting compulsory measures, and review and prosecution etc before trial, which can be summarized as the investment of involved parties and that of national judicial resources. The investment of parties in action includes monetary costs such as attorney cost, court cost and human cost to present in litigation, while national investment includes human costs for the salary and welfare of the working staff, and facility cost for office construction, office equipment and technology equipment purchase, etc.. The author thinks that polygraph technology has no influence on the cost investment of parties in action, but its application in criminal procedure implies that the nation will have to spend a large sum of money to purchase polygraph and to train lie detection personnel. From this point of view, polygraph technology will undoubtedly increase judicial cost and have negative correlations with judicial efficiency. However, some scholars use Posner's theory of dividing judicial cost into direct cost and error cost as reference and agrees that direct costs include office space of judicial organs, salary of the working staff, transportation equipment, technology equipment, cost of custody of criminal suspects and defendants, and other material consumption, as well as the energy and time consumed from the judicial personnel in handling the cases, while error cost is defined as costs produced from wrong investigation, prosecution and trial. (Pan & Li, 2006) From this point of view, polygraph technology can increase the accuracy of identification of case facts to decrease the error cost. Generally speaking, the more cases there are, the more chances there will be for making mistakes which will increase the effort costs, while polygraph technology equipment can be used repeatedly, and the more cases there are, the lower the use-cost will be. Therefore, while the application of polygraph technology in criminal procedure has reached a certain degree, the spared error cost will be larger than the invested direct cost. Therefore, we can come to the conclusion that in certain types of criminal cases or when there is relatively high use ratio of polygraph technology in criminal procedure, the introduction of polygraph technology helps lower the judicial cost and improve the judicial efficiency.

1.3 Lie Detection and Guarantee of Human Rights

The occurrence of criminal procedure is initiated by criminal acts of undermining national ruling order, but the objective of criminal procedure is not limited to punishing crimes and modern Criminal Procedure has determined guarantee of human rights as one of the basic value pursuits. Human right guarantee in criminal procedure includes protecting civilians by fighting crimes, ensuring sufficient respect for litigation rights of criminal suspects, defendants, victims and other litigant participants, protecting the innocent from criminal prosecution, and ensuring just punishment for the guilty. (Chen, 2002) As polygraph technology is scientific and of high accuracy, it can undoubtedly provide powerful assistance in guaranteeing

human rights. By means of polygraph technology, we can rapidly determine the criminal suspect and find out criminal facts to reach the goal of fighting crimes and protecting civilians; we can quickly exclude the innocent and protect them from criminal prosecution; we can identify the authenticity of statements of crime suspects and defendants to make the whole case clear, providing explicit case facts and laying foundation for ensuring the guilty gaining just punishment.

Certainly, the biggest question posed by the application of polygraph technology in criminal procedure to the guarantee of human rights lies in that it may go against with the privilege that no one shall be forced to incriminate himself. To better reflect human right guarantee of crime suspects and the defendant, while formulating and implementing Criminal Procedure, modern legal countries take presumption of innocence as the basic principle of Criminal Procedure, thus endowing the defendants with the right to fight against forced self-incrimination and endowing criminal suspects and the defendants with the right to keep silent facing the investigation personnel. Lie detection is an activity used to find out whether the testees lie by analyzing the changes of their physiological parameters while answering relevant questions, and it will be a question as whether the application of lie detection in criminal procedure is in conflict with the right to keep silent which will further go against the principle of presumption of innocence and violate the human rights of criminal suspects and the defendants. The author thinks that the right for denying forced self-incrimination can be given up, and criminal suspects and the defendants may give up this right for some reasons. Although polygraph technology has the function to recognize lies, its realization requires the cooperation of the testees as premise, which is greatly determined by personal willingness of the testees. Otherwise, the test results are probably not correct, and this is an issue of implementation process of lie detection. Lie detection under the premise of respecting the testees' willingness will not violate human rights of criminal suspects and the defendants. On the contrary, lie detection results gained from proper processes have significant function in excluding innocent criminal suspects and defendants and ensuring the guilty defendants to get just punishment, thus guaranteeing others' human rights.

2. SPECIFIC APPLICATIONS OF POLYGRAPH TECHNOLOGY IN CRIMINAL PROCEDURE

Justice, efficiency and guarantee of human rights are the three value pursuits of criminal procedure, and realization of them to the maximum extent is the eternal topic of human beings. The above analysis indicates that the application of polygraph technology has undoubtedly provided some thoughts for the realization of these value goals. It can be considered that there is no theoretical obstacle of polygraph technology application in criminal procedure, and that the problem

lies not in value judgment but in the way it takes to work in criminal procedure practices.

2.1 Polygraph Technology as a Measure of Technical Investigation

As a kind of science and technology, the application of polygraph technology in investigation of criminal cases is not only the reflection of constant development and advancement of science and technology in the domain of criminal procedure, but also the objective requirements for realizing criminal processes to control crimes and value goal of guaranteeing human rights. (Song, 2000) In Chinese criminal investigation practices, we introduced MARK-II Polygraph produced by America in 1982, and in 2000 many provincial and municipal investigation organs in China had applied polygraph technology. Except for some remote provinces and cities as Tibet, Qinghai and Jilin etc., polygraph has generally spread all over the country, and in Shandong province, the rate of its application in the public security organ at or above the county level has reached 50%.¹ In prosecuting authority's handling of duty crime cases, the frequency of application of polygraph technology is also relatively high. It is reported that there have been around 2,000 cases detected with the application of polygraph in worldwide, and that its success rate has reached 98%.² In the aspect of legal specification, the National Security Law of the People's Republic of China (1993), the Police Law of the People's Republic of China (1995), and the Amendment to the Criminal Procedure Law of the People's Republic of China (2012) have explicitly formulated the legal position of measures of technical investigation. As polygraph technology has important function in completing criminal investigation tasks, it can be widely used in criminal investigation stages.

Firstly, it helps in rapid recognition of criminal suspect, exclusion of the innocent and protection for the innocent from responsibilities. To find criminal suspects and exclude the innocent are the primary tasks in criminal investigation, and though the traditional investigation method can also complete the tasks, it takes longer time and large amount of human resources and material resources and the efficiency is low, especially in some major difficult cases. The application of polygraph technology can rapidly exclude the innocent from masses of criminal suspects and determine the criminal. It can also save large quantity of police force and time to realize sufficient utilization of police resources. Secondly, it can effectively investigate the statements and justification of the criminal suspect to verify the crime plots and motivation, to specify investigation orientation and to find out the truth of the case. Although oral confession is no longer the "king of evidence", it still takes an important position as a main basis to find out the truth. In investigation practices, the breakthrough of

¹ Please refer to Liu Ju (2000, July 23). Polygraph in China. *Beijing Evening News*.

² Please refer to Yu Huaxin: Polygraph Is Not Magic Tool to Corruption, China Court Net: <http://www.chinacourt.org/article/detail/2013/11/id/1144827.shtml>

many cases still rely on the statement and justification of the criminal suspect, as this information can specify the investigation orientation. Based on the clues hidden in the oral confession, relative authority can timely collect evidence materials, capture accomplices and find out the truth of the case. The function of polygraph technology in recognizing whether the testees are telling a lie can be given full play and makes a lie come into light. Finally, it is to the benefit of guaranteeing the rights of the criminal suspects, decreasing or avoiding the occurrences of confession by torture. The importance of oral confession appeals investigation personnel to spend plentiful energy on the statement and justification of criminal suspects. To gain authentic and effective oral confession, they would use any kind of means which leads to the occurrences of confession by torture. There are many factors resulting in confession by torture, the lack of reliable and credible criminal investigation technology is undoubtedly one of them. With its unique function, polygraph technology has some special effects on fixing this situation.

2.2 Polygraph technology as an Auxiliary Tool for Judge to Handle Cases

In China, polygraph technology, as the auxiliary tool for judge to handle cases, has been widely used, and especially in the domain of civil procedure, it is often used in helping the judge to solve difficult cases where there are only the statements of the plaintiff and the defendant but no other evidences such as loan dispute.³ In criminal procedure, polygraph technology has also been used as auxiliary tool for judges to handle cases, and the lie detection results are taken as references for difficult cases with insufficient judge evidences. For example, in 1989, an intermediate people's court in Liaoning province reviewed a rape case in which the defendant was sentenced 14 years of set term of imprisonment, and after carrying out lie detection on the defendant, the result showed that his statement was true. The court adopted the lie detection result and declared the defendant to be not guilty by combining with other doubtful evidence. In 1998, when an intermediate court tried a mug struggling case, it applied polygraph technology to four defendants to carry out lie detection, and the lie detection result provided reference for identifying evidences of this case.

Theoretically, in criminal procedure, the responsibility of providing evidences to prove the defendants to be guilty shall be undertaken by People's Procuratorate and People's Court has no responsibility to provide evidences. Therefore, as for cases which have no clear fact evidences, People's Court can give a favorable sentence

³ Please refer to Zhou Weiliang. (2013, December, 5). First adoption of polygraph in lawsuit settlement by the court: To judge whether the loan is true, *Guangzhou Daily*; Sun Qiguan: Xiangshan Court Takes Polygraph to Conclude a Debit and Credit Dispute, Xinhua Net. Retrieved from http://www.zj.xinhuanet.com/adnews/index_adnews/2013-03/01/c_114854315.htm; Xie Panpan: Loan Dispute of Tens of Thousands: A Zhejiang Court Adopts Polygraph to Judge Truth and Falseness, China News Net, available from <http://www.chinanews.com/fz/2014/06-25/6320286.shtml>, etc..

for the defendant according to the allocation of responsibilities in evidences. Then, why is there still need for assistance of lie detection technology? The direct reason surely lies in that it can increase the information content of judicial work, improve case handling efficiency, help the judge to make decisions and strengthen the judge's confidence. However, the most fundamental reason lies in the following aspects. On the one hand, in China, the court still does not uphold absolute neutral stance in the process of handling criminal cases, and there still remains a tinge of fighting crimes which shows its function to be excessive activeness and insufficient neutrality. This leads to the fact that when there is insufficient evidence or doubts, People's Court would not give sentence of being not guilty easily. Instead, it undertakes partial functions of public prosecution organs in essence and collects evidences by using its power to "bring the defendant to justice". On this point, polygraph technology can help the judge to analyze and determine the authenticity of the defendant's statement, and make the vague language to be explicit thus providing evidences for the judge to decide a case. On the other hand, responsibility system for misjudged cases has some influence on the judge to decide a case. The issuing of responsibility system for misjudged cases was aimed at making the judges to carefully and dutifully try cases and to give just sentences. In practices, however, this system has become a constraint for judges' behaviors. The duty of the judge denies him to refuse to give sentences, and with the restriction of procuratorial investigation right, the judge can not give an easy sentence of not guilty, while any mistake will influence the judge's "official career". Therefore, faced with this dilemma, the judge has to turn to the advanced equipment, polygraph.

2.3 Lie Detection Result as Evidences

From the perspective of comparative method, the function of polygraph technology in criminal procedure has been paid general attention to in most legal countries, but there are still both opponents and supporters in the application of lie detection result as evidence in litigation. (Shen & He, 2009) There are opponents as Germany and supporters as America and Japan. In China, though there has been frequent use of polygraph technology in criminal procedure, the innate immaturity and nonstandard use of polygraph technology, and excessive reliance on lie detection result to handle cases have led to the occurrences of misjudged cases, resulting in very cautious stance on whether lie detection result can be used as evidence. Supreme People's Procuratorate clearly points out in the reply to Instruction Request on Whether CPS Multiple Psychological Test Conclusion can be Used as Litigation Evidence by Sichuan People's Procuratorate in 1999 that polygraph technology conclusion of multiple psychological test is different from the conclusion stipulated by Criminal Procedure. As it does not belong to the genre of evidence stipulated by Criminal Procedure, it can only be used in investigating and judging evidences but not as evidence. However, in the aspect of academic discussion, there is heated discussion

on whether lie detection result can be used as evidence. Considering the maturity of polygraph technology and changes of legislation, the author believes that arguments for supporting the application of lie detection result as evidence can be elaborated from the following three aspects:

Firstly, some scholars question the reliability of lie detection result, but along with improvement of the science of polygraph technology, the reliability of lie detection result has been dramatically improved.⁴ In China, the research and development and application of polygraph technology have reached a high level. Certainly, no matter how well the polygraph technology develops, with the limitation of polygraph technology itself, cognitive differences among testees, and imperfect lie detection procedure, the accuracy of lie detection result can never be able to reach 100%. However, this can not be used as a reason to oppose lie detection result to act as evidence. In fact, the widely accepted use of DNA identification as evidence can not reach the accuracy of 100%. As for the difficulty in judging the authenticity of statements and justification of the criminal suspects and defendant, the accuracy of lie detection result is actually high enough. The fact is that the accuracy of lie detection result does not influence the evidence capability of lie detection result but the credibility which means whether lie detection result has the function of proof for the case facts and how it is.

Secondly, the saying that there is no correlation between lie detection result and case facts so it can not be used as evidence stands incorrect. Scholars holding this opinion believe that the test of changes of physiological parameters of the testee by polygraph is an application of mechanical means and that though there exist links between these physiological parameters and whether the testee lies, it can not be assured that what is elaborated is case facts. (Fan, 2001) Actually, this is a misinterpretation. As we all know, the correlation of evidence refers to the objective link between the evidence facts and facts to be proved, and this objective link can be indirectly of direction. Although lie detection result can not directly tell whether the testee is the criminal suspect, the judgment of authenticity of the testee's answers to questions can point out the right investigation direction, and provide clues for capturing criminals and collecting direct evidences. This is exactly a manifestation of correlation.

Finally, the idea that lie detection result does not belong to the genre of evidence stipulated by Criminal Procedure is already out of league. The revised Criminal Procedure Law of the People's Republic of China in 2012 specially uses a chapter to stipulate the legal position of technical investigation measures, and Term 152 of the Law specifically stipulates that "materials collected by adopting technical investigation measures can be used as evidence in criminal procedure." Although the Law does not clearly show that the polygraph technology belongs to the scope

⁴ Please refer to The Queensland Police Union, June, 1997.

of technical investigation measures, there should not be much doubt in its being one of the technical investigation methods combining the stipulation in Program Rules of Criminal Cases Handled by Public Security Organs (2012) Term 255 and criminal investigation practices. Lie detection result can play and has played the role of criminal evidence in judicial practices, providing auxiliary evidence for criminal procedure, filling up the blank in evidence, and providing scientific means and support for identifying the authenticity of other evidences. This function of investigating and judging the evidence credibility is just the role should be played by criminal procedure evidences.

3. BASIC PRINCIPLES FOR THE ESTABLISHMENT OF POLYGRAPH TECHNOLOGY APPLICATION IN CRIMINAL PROCEDURE

As polygraph technology has shown its positive function in realizing criminal justice value, and it keeps developing and perfecting, the application domain of polygraph technology in criminal procedure keeps deepening and expanding, and arguments towards it are also gradually coming into silence. As what scholars have stated, in China the key for application of polygraph technology lies not in the issue of value judgment, but in how to regulate its application to avoid abuse as well as in how to guarantee its accuracy to the maximum extent. This involves many technical problems as applicable condition for lie detection, the specific procedure, and investigation and judgment for lie detection results. However, compared with these technical and operational topics, the author believes that the most important and fundamental issue at present should be the establishment of basic principles of application of polygraph technology by combining the value pursuit and justice of procedure of criminal procedure.

Firstly, principle of legality. The application of polygraph technology shall conform to stipulations of the law, and this is decided by the public law nature of Criminal Procedure. The basic contents include: no individual or institution has the right to conduct lie detection without authorization of law; act of lie detection not conforming to procedures stipulated by law is ineffective; lie detection result gained beyond the scope of law does not have force of law. The requirements include: legality of personnel who conduct polygraph technology, legality of polygraph procedure, and legality of force of polygraph result.

Secondly, principle of voluntariness. The application of polygraph technology in criminal procedure shall be based on the voluntariness of the testees, which is the premise of ensuring accuracy of lie detection result as well as requirement for guaranteeing human rights. The basic contents include: the testee has the right to decide for himself whether to accept lie detection and has the right to

demand termination at any time. Therefore, lie detection shall be conducted under the condition where the testee agrees and signs on written agreement, and no unfavorable judgment for the testee shall be reached if the testee refuses or terminates the lie detection.

Thirdly, principle of being in favor of the defendant. The application of polygraph technology shall have the tendency to protect the defendant. As in criminal procedure, the defendant is already in a disadvantageous position being unable to fight against national public power, it requires us to make a favorable sentence for the defendant when the lie detection result is in favor of the defendant and there are no other evidences and the existing evidences can not overthrow the lie detection result. However, while the lie detection is unfavorable for the defendant, no direct sentence against the defendant shall be made based on this result, and it shall be used together with other evidences. If the testee has questions on the unfavorable lie detection result, he has the right to demand reasonable explanation from the polygraph institution (personnel) or ask for lie detection for another time.

Finally, principle of necessity. In criminal procedure, whether to apply polygraph technology shall be decided by the criminal procedure activities and the cases themselves, which can avoid abuse of polygraph technology in criminal procedure and is also restricted by the technical cost. Therefore, we should be clear on the use conditions of polygraph technology, and only when traditional technical means and methods can not solve the problem and application of polygraph technology can work or when certain types of cases can not be solved without the assistance of polygraph technology can it be used.

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