

# The Connection of Archival Science with Graphology and Criminology Studies

## Arşiv Biliminin Grafoloji ve Kriminoloji Çalışmalarıyla Bağlantısı

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### Abstract

Graphology is a branch of science that tries to determine individual characteristics and details of a person based on their handwriting. It was started in 1871 with the devoted work of French cleric-archaeologist Jean-Hippolyte Michon. Today, this branch of science is used to evaluate people's emotional development, give career advice, and conduct psychological analysis. Today, some company managers use the science of graphology to evaluate the personal characteristics of job applicants. The science of criminology, which contributes to the science of graphology, is the examination of the social and personal causes of any event. It focuses on crime, criminals, and ways to fight crime. Criminology studies are carried out to ensure justice and are carried out using various laws. However, there are also criticisms that graphology doesn't always yield clear results in criminological studies. To put it more clearly, in the science of evidence (criminology), a broad consensus hasn't been reached regarding the validity of graphology studies. Starting from this point, the benefits and shortcomings of graphology were analyzed in the study, and evaluations were made about the place and importance of graphology in archival science. In addition, the effect of graphology on archiving science was evaluated by focusing on the connection between the science of criminology. The study, which discusses the contribution of graphology to the sciences of archiving and information and records management, has been completed by making various suggestions that will support future academic studies.

**Keywords:** Graphology, criminology, archive, archival science, analysis

### Öz

Grafoloji, kişinin el yazısına dayanarak bireysel özelliklerini ve ayrıntılarını belirlemeye çalışan bir bilim dalıdır. 1871 yılında Fransız din adamı-arkeolog Jean-Hippolyte Michon'un özverili çalışmalarıyla başlatılmıştır. Bu bilim dalı günümüzde, insanların duygusal gelişimini değerlendirmek, kariyer tavsiyeleri vermek ve psikolojik analizler yapmak amacıyla kullanılmaktadır. Günümüzde bazı şirket yöneticileri, işe başvuranların kişisel özelliklerini değerlendirmek için grafoloji bilimini kullanmaktadırlar. Grafoloji bilimine katkı sağlayan kriminoloji bilimi ise, herhangi bir olayın sosyal ve kişisel nedenlerinin incelenmesidir. Suça, suçlulara ve suçla mücadele yollarına odaklanmaktadır. Kriminoloji çalışmaları, adaleti sağlamak amacıyla yapılmakta ve çeşitli kanunlar kullanılarak yürütülmektedir. Ancak grafolojinin, kriminolojik çalışmalar üzerinde her zaman net sonuçlar vermediği yönünde eleştiriler de bulunmaktadır. Daha açık ifade etmek gerekirse delil biliminde (kriminoloji), grafoloji çalışmalarının geçerliliği konusunda geniş bir fikir birliğine varılamamıştır. Bu noktadan hareketle çalışmada grafolojinin yararları ile eksiklikleri analiz edilmiş, grafolojinin arşiv bilimindeki yeri ve önemi hakkında değerlendirmelerde bulunulmuştur. Ayrıca kriminoloji ile bağlantıya odaklanılarak grafoloji biliminin arşivciliğe etkisi de değerlendirilmiştir. Grafoloji biliminin özellikle arşivcilik ve bilgi ve belge yönetimine katkısının ele alındığı çalışma, gelecekte yapılacak akademik çalışmalara destek olacak çeşitli önerilerde bulunularak tamamlanmıştır.

**Anahtar Kelimeler:** Grafoloji, kriminoloji, arşiv, arşiv bilimi, analiz

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## Introduction

It is very important for every writer who produces a scientific study and continues his personal/group work to be able to efficiently evaluate the information he has while creating and shaping his works. In addition, in the academic working world; in the process of revealing the results of scientific studies, the data, information, and documents of studies processed in previous periods should also be able to be reused effectively. All kinds of data that can be accessed are important in terms of contributing to scientific and/or technical studies. In some cases, it is a more appropriate choice to prioritize finding first-hand documents. If first-hand information cannot be obtained, indirectly accessed information and documents can also be evaluated depending on the situation. In any case, the main goal is to improve the access paths and elements of the data and to be able to increase the precise access hit rate to the information to be accessed. The development of information access routes is the processing of a number of different contents and information ratios in a stack and obtaining the necessary parts. There are also various data elements, numerical statistics, and databases among the auxiliary elements of the information access system.

While graphology studies are a positive factor in developing information access activities and increasing the rate of access to information, they may also include missing (problematic) factors at some points. Missing factors are 'blind spots that' graphology cannot reach in obtaining accurate information. In such problematic situations, different ways and methods can be tried in evaluating the existing information and documents. In order to contribute to these methods, the processes of creating collections, classifying and recording collections, linking document groups, carrying out up-to-date announcement services, and making documents easily accessible by distributing them in relevant ways may lead to the use of information centers and/or archives. In special cases where access to information is not deemed sufficient and such studies aren't sufficient, 'much more technical methods' should be followed. In addition to these techniques that can be monitored by information and document managers and guide document management when necessary; different methods may also be needed to read and functionalize special documents in an archive or information center. In some cases, these methods may need to be supported only by human talent, and in other cases, by automation. In fact, it seems that the use of human-computer interactive collaborative organization software has become more preferred in recent years. The change in these environments also depends on the internal and external structure of the material. Among these important technical methods, two branches of science can be listed first. These branches of science are 'graphology and criminology'.

In the study; by using the outputs of graphology and criminology science, all the special content details of the document related to the unclaimed-anonymous document and/or the technical studies to be carried out on signed paper will be determined. The point that should be focused on and wanted to be reached in this determination process is that the boundaries of graphology and criminology studies can also be determined in particular. For example throughout the study, the answers to the following questions can be focused on;

- ✓ Can the real owner of every document and/or signature whose owner is unknown be found?
- ✓ To what extent can all the characteristics of the document owner be predicted?
- ✓ How can graphology studies contribute to the science of archiving?
- ✓ What suggestions can be put forward for the future?

With the contributions of this article; by ensuring that the characteristics of the science of graphology are better known, more contributions can be made to drawing the boundaries of this science. Thus, it will be easier to determine how this science can be used today and what impact it may have on the science of archiving in the future.

## History and Definition of Graphology

Graphology is a branch of science that deals with determining a person's character by looking at their handwriting and signature. In particular, it is aimed to determine the individual characteristics of a person by performing technical applications on his/her handwriting. It is important to determine a person's individual characteristics and whether he or she is prone to crime before even talking to that person and to be able to predict what kind of structure he or she has. Thus, it will be possible to identify and direct the guilty person and to activate the justice mechanism more easily. The character can be deduced from a person's handwriting. The main theory underlying graphology is that handwriting is another expression of personality. Therefore, a systematic analysis of the way words and letters are formed can also reveal personality traits. Graphologists focus on elements such as the size of individual letters, slant, ornamentation, degree of angularity, curvature, and regularity.

The uniqueness of each person's signature and largely unique handwriting helps graphologists work in specific ways.

In order to better understand the conceptual definition of the science of graphology and to reveal its details, the following quotations from the works of some important researchers working on graphology can be elaborated by making.

"Graphology research is based on the detailed examination of suspicious documents that create disputes and are evidence in criminal or administrative investigations" (Cihangiroğlu, 2009, p. 9; Birincioğlu & Aşıcıoğlu, 2005, p. 4). "Graphology is a specialty that requires a lot of knowledge, experience, time, attention, care, compliance with ethical values, and heavy responsibility" (Bafra, 2003, p. 888). "Graphology, handwriting for forensic purposes, signature, typewriter, computer, printing press, etc. the examination and detection of forgery in copies, paper, ink, seals, photographs and documents by letter-printing examinations is the department of forensic sciences" (Çakır, 2004, p. 368).

In order to measure the validity of graphology in every field, it is useful to examine human behavior and relationships with people in detail. "Another element often used to discuss the validity of graphology is the satisfaction rate of customers who pay for handwriting analysis with the services they receive. Although it is estimated that % 50-70 of businesses in France use this method, it is quite difficult for most to find personnel using this method" (Graphology, 2024). According to Eric Singer, one of the leading graphologists of the twentieth century, the study of graphology also examines human behavior. "People can be depicted through metaphorically and culturally endearing bond drawings, no matter how absurd they may seem" (Graphological Drawings, 2024).

Graphology studies can be developed based on people's descriptions and behavioral styles. Graphology is not a prediction of a possible future situation; it is the correct prediction of a situation that actually occurs.

### **How Handwriting Reflects Personal Characteristics**

The evidence frequently used to prove the validity of graphology has content similar to forensic handwriting analysis. A graphologist uses many of the same features when analyzing handwriting, similar to the methods used by forensic document examiners. However, due to his expertise, he prioritizes analyzing personality rather than detecting authenticity or fraud. If the personal characteristics of the owner of the handwriting in the document can be analyzed well, this person can be directly identified and the result can be proven. In this process, the general psychological state of the person whose identity is desired to be determined can also be determined.

On the basis of human behavior, emotional states and the effects of their reflection on handwriting can be seen. For example; people who write large letters like to be noticed and they like to claim their social status in some way. On the contrary, people who write in lowercase letters do not want to be noticed, they have an analytical attitude towards everything and prefer to adopt a low social profile. Again, as another example; while people who write letters close together or combined are thought to be intuitive and intelligent people; It is estimated that people who leave wider spaces between letters are logical and more careful (Handwriting and Character Analysis, 2024). The way the handwriting is written and the use of letters makes it easier to analyze people's characters. It also becomes easier to determine the criminal potential of people who undergo personality analysis.

Of course, this situation may bring the following questions to mind again;

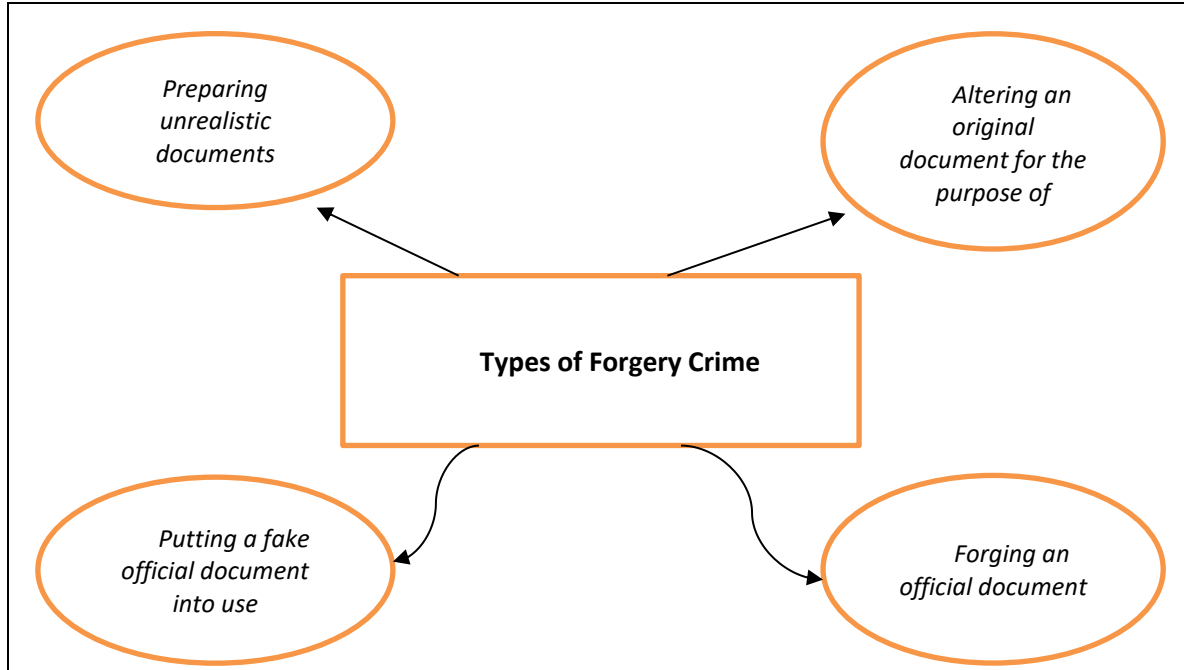
-Can the real owner of every document and/or signature whose owner is unknown be found?

-To what extent can all characteristics of the document owner be predicted?

In fact, when considered objectively, it is not possible to claim that the owners of all documents whose owners are unknown can be found through graphology studies. Graphology enables us to predict the owner of documents to the best of our ability, as provided by previous sources. Equally, it enables the basic personal characteristics of the document owner to be estimated. It is not possible to predict people's private lives exactly as in the science of psychology. In this respect, it should be acknowledged at the outset that graphology studies can only be used to the extent of their potential.

In addition to the science of graphology, it is very important that all these aspects can be determined in detail in order to show their impact on the criminal world. The aim of the science of graphology is to effectively distinguish real from fake and to carry out the necessary technical examinations to ensure that fake data are never accepted as documents and evidence in criminal cases. Forged documents or falsified documents delay the accurate clarification of the crime. Creating a document that does not actually exist and/or making changes by falsifying an existing and real document is a crime of forgery in our laws. The crime of forgery is defined as 204 of the Turkish Penal Code. It is regulated in the article (TCK, 2024) and is a law

that focuses on all areas, especially those that are very related to commercial life. According to TCK 204, the Crime of Forgery in an Official Document; "A person who pretends to be an official document, changes a real official document in a way to deceive others, or uses a fake official document is punished with a prison sentence of two to five years" (Gökcan, 2009, p. 95). What is meant by deception here is that the most important condition for being qualified to 'deceive others' is that the deception is objective. This situation is a fraudulent arrangement of the document in a way that cannot be understood by everyone at first glance. In this regard, the fakeness of the existing official document can only be understood by performing a 'special examination (graphology)'.



**Table 1. Types of Forgery Crime**

Forgery of Documents the most dangerous crime is forgery of an official document. When an official document is forged, that document can be used in any transaction at any level of government. All official transactions in which a fake document is used must be canceled. In this case, it can lead to a very problematic situation in terms of the sustainability of state operations. As an example of this problematic situation, if an academician's undergraduate diploma is fake, it may lead to the cancellation of all documents and titles obtained after that diploma. For example; in an investigation carried out in the Turkish Republic of Northern Cyprus, it was claimed that YÖDAK President Prof. Dr. Turgay Avcı's diploma was fake. "In the fake diploma investigation in Cyprus, the security team appointed by the Supreme Administrative Court prepared a report. In the prepared report, it was examined whether there was any falsification in the diploma stated to belong to Turgay Avcı, the President of the High Planning, Supervision, Accreditation and Coordination Board (YÖDAK) and it has been concluded that it is not fake" (Cyprus Report on Fake Diplomas, 2024).

Regarding the forgery operations performed on documents, Çakır and Aslıyüksek address the following information; "Material forgery in documents is carried out in whole or in part. In a complete forgery, the entire document is a fake. A fake fills out the entire valid document as a fake or edits a similar document that doesn't exist or does not exist in reality. As an example, a blank passport, driver's license, check, birth registration, etc. the receipt, filling, sealing, and signing of documents are examples of this type of forgery. In the case of partial forgery, documents organized as printed text, numbers, signs, and other features are tried to be reflected exactly to the original" (Çakır & Aslıyüksek, 2014, p. 63).

As Çakır and Aslıyüksek (2014) pointed out, it is important to be able to detect complete or partial changes made to the document. For this determination, it is necessary to analyze the letterhead signs, signatures, other signs on the paper, and even the quality of the paper on the document. Examination of handwriting and signature is the most important point. Because it can reflect the psychological-sociological state of a person's character in the best way at the moment of signing and signing the signature. If sudden changes in a person's emotional state are noticed, it can also be easily determined that the person has a criminal-schizophrenic nature. In such cases, it is useful to contact the judicial units immediately.

## How Graphology is Used in Forensic Document Examinations

Different elements should be considered when examining the signature.

*“First of all, one of the most important points to look at is whether the name is written legibly. If the name is literally clearly written and easily read, the signatory is a person with clear goals, responsibility, high self-confidence, and balance. If it is difficult to read the signature, the signatory is probably agitated, impatient, and evading responsibility. People with signatures that are difficult to decipher have a structure that makes it difficult to accept authority and are ambivalent about their movements. Another important point is how quickly the signature is discarded. Signing too fast is typical of impatient people who don’t like to wait and like to finish things quickly, slow handwriting usually belongs to a more thoughtful person”* (Criminal Bureau, 2024).

Examination of personal signatures is important when it comes to identifying forged documents. The signature is personalized and very difficult to forge. Personal signatures carry certain personal characteristics that in some cases are impossible to completely forge or steal. The signatures are the seal of identity and contain a lot of data about personal characteristics, according to experts. Signatures, which in most cases are not created one hundred percent consciously can contribute to experts in character analysis due to their technical characteristics.

### Definition and Fields of Study of Criminology

Criminology is a science that investigates the social and personal causes of any event that is suddenly committed or planned, but the person and reasons that led to the event are unknown. The most focused topic of criminology science is crime, criminals, and society’s ways of fighting crime. Criminology studies are carried out on a legal basis and are based on the provision of justice. Various laws are used for this purpose. Following this path, the definition of criminology and its field of study can be indicated in the following ways.

*“Criminology, which benefits from the important methods of natural and social sciences, also benefits from other branches of science that help criminal law”* (Artuk, 2018, p. 6). *“The subject of criminological research is all negative social behavior that stands out, whether it is crime or not. Therefore, not only crimes but also important social problems such as drug and alcohol use, unemployment, suicide, and prostitution are included in the subject area”* (Demirbaş, 2020, p. 2). *“Criminology is of great importance in many ways in the study of the factors that lead to the practical functioning of crime, as well as in the use of the legislative body and the judge and the power of criminal sanction”* (Çalık, 2018, p. 326).

Criminology is a highly technical branch of science that studies methods and processes in accordance with the provisions of criminal law in cases of cultural and criminal crimes that arise in contemporary social life. Since it is a branch of science that studies crime in all its aspects, the importance of criminology is quite great. The task of criminology is to investigate crime, criminality, the criminal community, the victim, and the social control organs that lead to crime. For this purpose, criminology follows the directions of researching adult criminality, juvenile delinquency, and the scope, structure, appearance patterns, development, and distribution of social deviance. Adult guilt explores the causes of social deviation with adolescent guilt theoretically and experimentally. The main task of criminology is to prevent and control adult criminality, juvenile delinquency, and social deviance. Criminology needs to have potential in all technical application areas in order to be able to perform the tasks on it.

Information collection activities include; tracking criminals without deciphering, interrogating people who have previously committed crimes or have the potential to become criminals, and ‘criminal intelligence’, which is an area of activity that can provide the most important content to all this data. Intelligence is based on the principle that a person or the entire society should be followed up before an event occurs, and if necessary, intervention can be made in advance. *“The concept of intelligence can be defined differently from each other in various languages. The common point of these definitions is open and/or secret information acquisition activities”* (Şeşen & Kuzucuoğlu, 2021, p. 95). As Şeşen and Kuzucuoğlu (2021) pointed out, intelligence activities can enable many crimes to be detected before they come to light. Again, intelligence methods can also be used to make it easier to illuminate a complexly committed crime and to quickly punish criminals. In this respect, the practice of criminology is a discipline of study intertwined with intelligence and law.

Criminology also follows two different processes of analysis postmodern theory and critical theory. These processes are based on media analysis, focusing on the interaction between crime and decriminalization. They especially emphasize the issues of image, meaning, and representation. Cultural criminology, for example, explores the stylized frameworks and empirical dynamics of illicit subcultures. *“In this aspect, it can also address the symbolic criminalization of popular culture*



forms and the mediated construction of crime control problems” (Ferrell, 1999, p. 398). Cultural criminology, media, and policing culture among the emerging research fields, the development of the media, and viewers involved in crime are also processes that are closely monitored, especially in developing societies. In the science of criminology, which studies the links between crime, crime control, the cultural sphere, and the collective human actions that shape the meaning of crime, simply finding the criminal and/or deciphering the characteristics of the criminal is not a criterion by itself. In addition, it has the potential to fulfill important breakthroughs in criminal terminology, criminal philosophy, and crime theory. Effective studies can also be carried out in these different areas. Knowing the number of crimes committed in a country, classifying them, and investigating the causes of crime is of great importance for criminological studies.

The technical and specific methods applied in criminological research can be explained in the following sections in the form of two subsections.

### **Crime Measurement Methods**

In criminology, it is important to know how often crime is committed in terms of place and time, to understand its reasons, and to try to prevent crime when necessary. In addition, after a crime is committed, it is important to direct those who commit the crime to the right path or to punish them in the necessary ways when they commit a crime again. In order for the crime to be punished in the most appropriate and fair way, the criteria for the crime must be determined. Crime is measured in various ways. These elements;

- ✓ “Crime statistics,
- ✓ Notifying the perpetrators of the crime,
- ✓ They are indirect measurements” (Demirbaş, 2020, p. 73-74).

Various data can be obtained as a result of the application of crime measurement methods. The data obtained has an important place in elucidating many active and unknown events. By using crime data, the activity areas and boundaries of criminal investigation-prosecution bodies (prosecutor’s office, court, police, enforcement institutions, etc.) can be determined and these units can be directed to carry out more effective operations. Information regarding the workload and working areas of these bodies can be accessed more easily using crime statistics. “With the help of crime statistics, the proportion of the population directly or indirectly involved in crime can also be determined” (Mangone, 2018, p. 83). As Mangone mentioned, it is important to determine the limit of the crime and the rate of those involved in the crime.

In addition, information about which region in the country is more active in which type of crime and passive in which crime area can also be obtained from this data. As a result, the data can also serve to strengthen the existing criminal justice system and, if necessary, prepare new criminal laws to solve problematic situations. The aim here is to fix all problematic areas as much as possible. All activities that are statistically controlled and kept under control contribute positively to the formation and continuity of a more active penal system. Taking advantage of all technological innovations to develop the statistical tracking system would be the best method and choice.

### **Experimental and Survey Methods**

#### **a) Experimental Method**

Unfortunately, in recent years, people continue to seek the possibility of committing or witnessing a crime. However, it is also seen that this situation is due to the fact that today’s people are more immoral and desperate, rather than making it easier and more attractive to commit a large number of crimes. For example, it can be said that committing such indirect crimes has become easier and more commonplace because those who commit theft crimes in shopping malls and grocery stores are usually tried without arrest or do not receive the punishment they deserve. In other words, it is obvious that the public’s common sense has decreased on these issues. Although security elements also make use of technological factors (pocket cameras, mobile phones, social media, etc.) and make more arrests than in the past; they want to show high detention rates in order to appear more effective, especially in front of the media and the public. They have started to release a person who has committed a crime and then arrest him again by making it a news item in the media more frequently. Detention statistics are increasing due to the lack of impartiality and support from the judiciary in this matter. However, conviction statistics are not increasing at the same rate. That is, many of the people arrested are released. In addition, the inclusion of new crime types in the newly adopted criminal laws increases the number in general statistics, albeit slightly.

*“All these situations bring with them the application of the experimental trial and error method. The experimental trial and*  
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*error method is an observation method that can be repeated under controllable conditions and can even control the underlying hypothesis. In this practice, which is also expressed as the observation of those involved in crime, there is a planned perception of people's behavior in their natural environment through the observer"* (Demirbaş, 2020, p. 87).

In addition to the topic that Demirbaş (2020) focuses on, the observation method is followed by taking into account that someone who has committed a crime before has the potential to commit the same crime again and again. Usually, the data obtained from this method also gives accurate results.

### **b) Survey Method**

The survey method largely uses the survey-interview method. Survey research is divided into three types depending on the person asking the question. These are direct questions to the perpetrator, questions to the victim, and questions to the information holder (witnesses). In the survey conducted by asking the perpetrator, the respondent is asked whether he/she has committed any crime within a certain period of time. However, it is not possible to get a satisfactory answer to these questions. Because just as people by nature are very prone to distorting the facts, they are also not at all inclined to tell the truth. "It is often difficult to find the correct answer to a question asked to a person. On the other hand, the result of this method also depends on whether the interlocutor understands which action is a crime. The most common method of detecting unknown crime is victim surveys. Here, the victim is asked whether a crime has happened to the victim within a certain period of time, whether it has happened, and how often it has happened" (Demirbaş, 2020, p. 88).

They are more likely to trust data from victim surveys. Because the person who feels victimized is more likely to accept the painful experiences he has had in the past. As a result, the use of the survey method is one of the important technical methods that can be used to obtain information from people involved in crime or victims and to guide them. While these surveys are applied to people, new suggestions may emerge without them being aware of it.

With the efficient use of these two methods, the acquisition of crime and criminal information from graphological studies will increase. Especially the use of the 'crime statistics method' helps to find criminals faster.

The study continues with the review and analysis of the general literature on Graphology and Criminology Studies.

### **Examination of the General Literature of Graphology and Criminology Studies**

Various sources previously written about Graphology and Criminology Studies can be analyzed in *Table 2* below by examining.

<b>Author, Year, Publication Name</b>	<b>Information Obtained from the Publication</b>
<b>Robert Saudek, 1929,  Experimental graphology</b>	Saudek summarized the topics discussed in graphology before him in his article study. It is known that in 1897 Prayer a German physiologist, wrote a book on the psychology of handwriting. However, the theories he put forward have since been definitively refuted. Nowadays, it is accepted that when it is possible to solve the experimental isolation of various factors of individual letter formations, it will be solved in many related problems related to the technique. According to Saudek, the characterological analysis of handwriting needs a detailed analysis and synthesis, which cannot be explained in this article. Forensic analysis of handwriting develops on different lines. The aim of the graphologist is to decipher the author of the document in question before creating the work and to establish a connection between the characters of the person who created the handwriting and the evidence-based suspicious person. It is also to be able

	<p>to determine which of the several suspicious people identified are fake. In his case, the specialist recognizes the situation that inconspicuous features of handwriting cannot be consistently hidden in handwriting of any length.</p>
<p><b>Fritz A. Fluckiger, Clarence A. Tripp, George H. Weinberg, 1961,</b></p> <p><b>A review of experimental research in graphology 1933-1960</b></p>	<p>According to Fluckiger et al., many articles have been written in handwriting in many countries. However, very few rigorous experimental studies have been conducted. Much of the literature on handwriting focuses on research rather than testing hypotheses. It can be said that it is to propose hypotheses. The literature is full of starting points for empirical research. A multitude of possible interpretations are offered, along with very ingenious and intuitively convincing justifications for them. However, there are only a few definitive studies showing specific relationships. Previous experimental studies include Allport and Vernon in 1933; Wolfson in 1951; McNeil and Blurn in 1952. These studies usually dealt with specific method problems. The trend is definitely towards experimental research rather than speculation in the field of handwriting. However, it is difficult to draw conclusions from the methods and variables being investigated. In other words, the studies haven't reached the desired level of inferences. The purpose of this article is to review the experimental studies in the field and to briefly comment on some of the methods used and the reported findings. When the investigated methods are analyzed, it is clearly seen that the previous findings and data should be improved statistically. As a result, it seems that the field of applied graphology does not include experimental applications in terms of change.</p>



<p><b>Jane F. Brewer, 1999,</b> <b>Graphology</b></p>	<p>As a result of this study, it has been seen that graphology is an important element of the multidimensional evaluation process in helping people to know themselves and others. When opinions about the applicability of graphology are considered, it is emphasized that graphology is a fascinating and very eccentric subject. However, it is claimed that graphology can be used in a very absurd way as a diagnostic tool in the field of health to predict a disease in advance, to prevent its progression by monitoring certain stages of the disease in advance, or to evaluate its recovery. Of course, even if such claims cannot be proven yet today, there may be developments in this area in the future. In fact, an increasing number of studies are also being conducted in this field that support handwriting analysis as a form of psychological interpretation. It cannot be claimed that all these studies can reach a definite result. But according to Brewer, graphology provides a vital approach to understanding ourselves and others. It can ensure that the treatment of the person who is seen to be stressed can be started early. Most importantly, graphology can be very useful in a recruitment interview. As a result, the author hopes that such studies will increase in the future.</p>
<p><b>Siew Hock Ow, Kean Siang Teh, Li Yi Yee, 2005,</b> <b>An overview of the use of graphology as a tool for career guidance</b></p>	<p>According to the authors, two methods are used in handwriting analysis; The French approach and The German approach. According to the French approach, manuscripts are studied atomistically or in the form of individual pieces in accordance with the various elements of handwriting. In the German approach, on the other hand, integrity is at the forefront and they analyze handwriting as a whole. According to him, there are positive and negative aspects in two types. When used in combination with two methods, it shows the most complete characteristics of a person's disposition. Today, the progress of computer technologies has also increased the interest in graphology. In addition, graphologists have started to make more use of computer technology. The desire to perform some special analyses faster, the complexity of the processes, and the desire to improve the ability to produce timely reports to customers have increased the importance of computerization. Graphology continues to be the subject of more and more research and verification every day. However, the validity and reliability of the results and reports produced by the systems can pose a major problem for users. In order to solve this situation, it is necessary to obtain the graphology method to be applied in detail by experts. Since handwriting directly reviews a person's personality and is related to the psychological aspects of the person. It is</p>

	<p>important to determine the results of the analysis to ensure the validity, accuracy, and reliability of the results. Graphology studies should benefit more from modern technology.</p>
<p><b>Carla Dazzi, Luigi Pedrabissi, 2009,</b></p> <p><b>Graphology and personality: An empirical study on the validity of handwriting analysis</b></p>	<p>With this research, it can be seen the points that can be reached by mutually analyzing the different findings between using the results of graphological analysis on correlation data and evaluating the documents of experts working on graphology as predict decently based on their personal characteristics. It is found that graphologists are unable to make non-random inferences through handwriting analysis on 15 personality traits measured by the Big Five Questionnaire, which was put forward to contribute to this study. On the other hand, it is also seen that there are serious doubts about the validity of graphology as an indicator of individual differences in personality traits. Of the 15 reliability coefficients obtained by the evaluators, only 4 are statistically significant. Based on these data, it appears that the two graphologists came to drastically different conclusions when evaluating the same handwriting samples. From this point of view, it has also been determined that the graphological evaluation of personality cannot draw a definite conclusion. As a result, current handwriting analysis methods cannot be compared with personality measures commonly used by psychologists. Because at the moment graphology lacks the proper verification to be fully recognized as a measure of personality traits.</p>
<p><b>Kurtuluş Kaymaz, Necmi Gürsakal, Umut Eroğlu, 2010,</b></p> <p><b>Analyzing the relationship between signature and personal traits: A research on managers</b></p>	<p>In the study, various signatures and the personality characteristics of the owners of the signatures were examined. As a result of the study, it was found that there is no direct relationship between signature and personality traits. Due to the lack of links on personal signatures, the use of signatures naturally loses its validity. It seems that the hypothesis of 'signature reflects personality traits' which was considered before starting the study, is also not valid. Naturally, it follows from this result that; it has been found that it is difficult to obtain accurate data from the signatures of candidates, whether for recruitment or other types of interviews. Together with the analysis of these situations, it has been determined that it is not possible to reach the personal characteristics of a criminal by taking the signature to the foreground while continuing crime analysis studies. This means that any kind of personality analysis based on signature will bring incorrect results. For this reason, it is recommended that different studies be</p>

	<p>conducted in this regard in the future. Unlike what is especially suggested on the internet, studies investigating the relationship between signature and personality do not reach strong findings, but only weak and ambiguous results.</p>
<p><b>Eva Gomez Jimenez, 2015,</b></p> <p><b>An introduction to graphology: Definition, theoretical background and levels of analysis</b></p>	<p>The main purpose of writing this article is to understand whether graphology is prone to linguistic analysis. Therefore, firstly, the dual nature of graphology has been explained, thus referring to the study of the writing system and at the same time to the handwriting-based analysis of a person's character. In the study, it was examined in some technical-academic publications made in the past. In the publications examined, it has been discussed with tables in various elements that fill some of the gaps around graphology. As a result of the article, the following conclusion can be easily reached; the perspective of graphology science, which is highlighted in this article, shows that graphology is insufficient as a level of linguistic analysis. The number of applied researches in this field is not at the desired level. Before creating a well-functioning graphology model, it should be measured by which method graphology can develop a discourse. Although graphology is seen to be sensitive to linguistic analysis in some cases, on the other hand, graphology is seen to be visually and typologically strong. As a result, future empirical research should focus on the methodical study of graphological elements. In addition, a more systematic scheme should be put forward in future studies that allow a more diverse set of goals to be defined, classified, and related. Finally, as in advertising or journalism, for example, a graphological theory should also be created based on research on texts that contain visually interesting examples and lend themselves to various analyses.</p>
<p><b>Rafal Ciesla, Jolanta Grebowiec Baffoni, 2017,</b></p> <p><b>Selected issues in handwriting examination, graphology, and their technology in document examination</b></p>	<p>In the study first of all; the general characteristics of handwriting were processed. Handwriting can be considered the most complex human activity, as it involves a large number of brain centers, peripheral nervous system, and neurophysiological processes, since it requires very good manipulation skills and precise movement. Later in the study, it was emphasized that a handwriting specialist in particular should have expert knowledge about the neurophysiological processes that control the execution of handwriting. As a result, it is seen that it is necessary to be familiar with neurophysiological dynamics in order to analyze graphology. As can be seen from the examples considered in the study, it is proved that handwriting examination should be performed with advanced optical image recording technology tools for</p>

	<p>certainty and evidence. The equipment to be used of this type also ensures the preparation of sufficient photographic material, which makes it easier to understand the examination procedure and the results obtained. Graphological research and analyses should be performed in accordance with all these characteristics.</p>
<p><b>Dian Pratiwi, Gatot Budi Santoso, Fiqih Hana Saputri, 2017,</b></p> <p><b>The application of graphology and enneagram techniques in determining personality type based on handwriting features</b></p>	<p>In the study, some psychological tests were performed in order to analyze digital handwriting and personality characteristics and to successfully apply the science of graphology. In order to better measure the results of these tests, the 'enneagram method' has been developed. In the enneagram method, all the characteristics of a person were divided into nine types through a series of questions, and then the amount of the total weight of the answer was calculated. A total of 49 data were collected and the results obtained from the data matched using the enneagram method are as follows: From the 49 data tested, an 81.6 deficiency rate between personality analysis and graphology science was obtained. This ratio has been able to scientifically prove that there is a strong relationship between personality and handwriting. The application of graphology in the analysis of human personality results can proceed in parallel with the application of the enneagram.</p>
<p><b>Deborah Ellen Thorpe, 2018,</b></p> <p><b>Nonsense rides piggyback on sensible things: The past, present, and future of graphology</b></p>	<p>The study focused on especially interesting criminals handwritten letters. The handwritten letters of notorious criminals can clearly show clues that the crime committed was definite and inevitable. From this point of view, they are the topics that are focused on from the point of view of local and international journalists. For example, in the Daily Mail magazine in 2016 graphologist Brigitte Applegarth conducted interviews and research about letters written by the killer of the then-murdered Labour MP Jo Cox. In summary in these letters, along with the examination of the killer's handwriting, it is clearly seen that the killer has an inferiority complex and wants to punish everyone who disagrees with him. In addition, handwriting examination is also important in terms of revealing the personality structure of people who have to live with criminals. According to the author, the actions of cross-comparison of handwriting with personal characteristics, which form the basis of the science of graphology, are also important in terms of showing people's individual-psychological differences. In the case of a criminal investigation, the handwritten evidence of the offender can be examined. This evidence will reveal the information that the person wants to be learned about himself. As a result, graphology, which is the science of</p>

	<p>handwriting today, continues to be considered as a method that is rich in information about the person whose writing is being studied.</p>
<p><b>Alpaslan Hamdi Kuzucuoğlu, Şahin İplikçi, 2019,</b></p> <p><b>The role of an expert in the analysis of known and questioned writings in forensic document examination</b></p>	<p>In the background of Kuzucuoğlu and İplikçi's study; it is important to examine whether the documents dealt with by comparing the handwriting and signatures found in the forensic documents are fake or not. The issue that the study focuses on in particular is the determination of the roles of forensic document specialists (criminologists) within the scope of the study and proving that expert opinion reports are an important factor in the field of forensic document examination. It is important to be able to the legal connection between the place where the incident that is the subject of judicial documents occurred and the document. For this purpose, technical examinations may be carried out during the examination of the document. By analyzing all the developments in the incident, crime scene and crime scene investigation triangle, the importance of crime research (criminology) from the point of view of archival science can be emphasized. For this purpose, the working areas and functions of the Crime Scene Investigation and Detection Units of the General Directorate of Security were discussed in particular. Again, the connection of the topic discussed here with graphology is also seen. Graphology specialists who are interested in trying to guess who wrote the document that is the subject of the forensic document and the character traits of this person. The subject that is emphasized in the forensic document examination is to be able to analyze it with the most scientific method possible for the purpose of this article. In particular, the topic of 'expertise' was also focused on. In the study, the 'becoming an expert witness' situations of people working in the field of 'forensic document analysis (handwriting-signature and forgery)' were analyzed again. As a result, it is emphasized that it is a very difficult process to determine who wrote or signed a document that is the subject of a judicial lawsuit, and the technical studies that need to be done to facilitate this activity are emphasized. The number of technical studies will be increased, the hands of lawyers will be strengthened as concrete evidence in cases, and many cases will be brought to a conclusion much faster.</p>
<p><b>Zübeyir Oluğ, 2019,</b></p> <p><b>Protection of items in the judicial escrow office and management of</b></p>	<p>In Oluğ's dissertations work; the importance of preserving the evidence related to investigations and prosecutions in Judicial Custody Units and keeping these documents in a more disciplined and efficient manner with the archiving logic is emphasized. The evidence that forms the basis of</p>

<p><b>archival records</b></p>	<p>investigations and prosecutions should be archived regularly, classified, preserved in archival standards and made accessible. In our country, where millions of lawsuits are filed every year, considering that there are hundreds of pieces of evidence for each case filed, it should not be underestimated how serious the issue is. For example, as of 2019, about 500,000 pieces of evidence are kept in Bakırköy Judicial Depository, and these pieces of evidence should be classified according to academic standards, protection conditions should be improved, and their access should be facilitated. If forensic documents cannot be archived in efficient ways, it will also become very difficult to use forensic documents in graphology and criminology studies.</p>
<p><b>Laurens Schlicht, 2020,</b> <b>Graphology in Germany in the 1920's and 1930's</b></p>	<p>According to Schlicht the use of graphology; as an analysis of people's character or personality has always been discussed. The only purpose of using graphology in this sense is that these techniques belong to areas accepted by formal, institutionalized science. Graphology basically reveals a subject-policy and epistemic conflict about the possibility and scientific form of character interpretation in general. As Ludwik Fleck put forward as a preliminary idea, in a rather vague way, research applications need to be developed in absolute forms. Units working on graphology may also have contributions in this regard. In addition, intensive studies are also being carried out in the courts to accept the services of people who request expertise in the interpretation of handwriting.</p>
<p><b>Giuseppe Marano, et. al., 2020,</b> <b>Graphology: An interface between biology, psychology and neuroscience</b></p>	<p>When Marano's and et al. article is considered; it can be seen that handwriting represents one of the most important elements of development in human culture. Each written word somehow tells the story of those who produced them, partly in a language of movement, partly in the language of symbolic images. According to graphological examination techniques, handwriting spontaneously takes on a unique situation in every person, which gradually acquires more and more personal characteristics throughout life and its associations are reflected. The purpose of this article is to create the first approach to the discipline and the perspectives of graphology by researching the latest technology over time, starting from the beginning. Therefore, in the scientific field, terms have been considered that increasingly summarize its status over time. As the research on this subject has been deepened, it has also been realized how more dedication can be made. With the development of graphological studies; the lands discovered by graphologists have changed in parallel or over time,</p>



	<p>inspired by the most diverse perspectives and culture, from China to Switzerland, the United States and different countries of the Old Continent to the East and the Middle East. The fields of study have also expanded from legal sciences to the determination of personal characteristics compatible with the labor market, including the management of human resources, to directing contributions to medical, psychological, psychopathological, neuropsychiatric-pediatric and neuroscience disciplines. With the expansion of graphological studies, it will also be possible to see that the characteristics of a person have matured and evolved. For all these reasons, it should be aimed to initiate an effective collaboration to improve the praise given to psychological speculation by graphology as a 'social science perspective' and studies on this subject should be developed in the future.</p>
<p><b>Francesco Galvano, Maria Elena Caporale, Conchita Siliquini, 2023,</b></p> <p><b>Graphology in forensic contexts unveiling personality and behavior through handwriting analysis</b></p>	<p>Today, graphology has become a powerful tool in research contexts by solving personality traits and behaviors through handwriting analysis. Among the fields in which it is used; graphology has spread over a very wide area, from job interviews to forensic environments where it helps to identify the authors of controversial documents and analyze testimonies. Forensic graphology consultants, who combine graphological analysis with psychological and scientific expertise, play a very important role in maintaining objectivity and reliability. In today's multidisciplinary research environment, handwriting analysis is intertwined with others. Being able to develop the concept of graphological expertise as scientific research undoubtedly improves the ability to reveal its details. Forensic graphology is emerging and developing as a powerful tool that combines interpretive art with modern science, illuminating hidden paths to the truth in courtrooms and society in general.</p>

**Table 2. Analysis of the Literature of Graphology and Criminology Studies**

When the general literature on graphology and criminology is examined and analyzed in *Table 2*, the following elements clearly stand out:

✓ The number and nature of experimental designs used in graphology research are quite different and diverse. In some studies that can be considered holistically, the goal is to be able to reveal estimated / analyzed information about a certain personality trait of the author's handwriting. For example, information about the author's age, gender, or intelligence can be clearly determined as a result of graphological studies.

✓ It can also be seen that handwriting may carry one or more individual characteristics. For example, it can be seen over time that the results obtained vary depending on the degree to which the author has a certain feature of the writing pressure applied.

- ✓ Although it may seem like a very difficult process to determine who wrote or signed the document in a case, the technical work that needs to be done to obtain more active information about it can also be determined. By increasing the number of technical studies, the hands of lawyers will be strengthened as concrete evidence in cases, and many cases will be brought to a conclusion much faster.
- ✓ In fact, it can be said that graphology can be evaluated as a work of art in the hands of a specialist who understands and applies this subject very well.
- ✓ The ability to perform graphology studies efficiently will help him to progress very quickly in his criminological research.
- ✓ Graphology helps develop multidisciplinary research environments. Graphology has a wide range of applications, from various job interviews to identifying the authors of disputed documents to forensic settings helping to analyze testimony.
- ✓ Forensic graphology continues to evolve as an important tool that combines interpretive art with modern science.
- ✓ The ability of experts working in the field of graphology and criminology to conduct careful and meticulous studies will also make significant contributions to the science of archiving.

### **The Relationship of Graphology and Criminology Studies with Archival Science**

Signature archiving processes developed through graphological studies and crime statistics results developed through criminological studies directly contribute to archiving science.

In order to examine in detail the relationship between Graphology and Criminology Studies and Archival Science, it is useful to examine archiving science in detail.

#### **Archives Throughout History and the Importance of Archiving**

Since the early ages of history, people have felt the need to record all their sociological, anthropological, technological and technical activities in a text or medium. The fact that people live their lives with these desires has led to an increase in their need for a recording medium at a higher rate. This process, which started primarily with wall shapes (Antiquity) has been continued in different formats, especially clay tablets and papyrus, with the invention of writing. For the first time in history, M.D. after the year 3200, Sumerian Cuneiform Script was started to be used by Sumerians in daily life. "Sumerian Cuneiform Script began to be used to meet practical needs, such as keeping records and keeping accounts of tangible objects of economic value. As time passes, it has become a more complex and developed system in which abstract concepts can also be expressed" (Albayrak, 2016, p. 22). As stated by Albayrak, the development of writing has also led to unexpected advances in civilization. Along with this important process initiated by the Sumerians, in parallel with this situation, the transition of people to a settled life has accelerated. The discovery of the wheel and other tools in the continuation of the discovery of the manuscript is also very important in terms of repeatedly demonstrating the importance of the recorded information.

With the development of writing genres in the world, the number of written sources has increased significantly and the issue of preserving and maintaining written sources has come to the fore. Parallel to the development of this situation, the need for archive areas increased and, as a natural process, the construction of archive areas accelerated. The increase in the number and quality of archive areas has led to the development of archives. Archive areas have moved from their classical function to a more advanced stage.

Today, archives include literature, politics, law, sociology, etc. it has become more advanced than a place where resources produced in different disciplines are stored. Archive areas are now a living organism. Archives continue to develop in electronic environments by constantly updating themselves over time and taking advantage of the blessings of technology. The content and quality of archive areas change every day. Today, archives are largely shifting towards digital media. With the increase in the number of digital archives, the rate at which archiving processes can become faster and serve more people is also starting to increase. With the change in the format and content of archive areas, archives can now become places where judicial and administrative documents are carefully stored.

#### **Archiving and Management of Forensic Documents**

Since the period when written sources were first developed (2500-3000 BC), recording the crimes committed has been at least as valuable as finding the criminal. Because by recording the crimes committed, it will be possible to find the

perpetrators of future crimes more easily. From the point of view of forensic sciences, the activities of recording all crimes committed from the past to the present are of great importance. Because with the efficient storage and management of judicial documents, it will also be possible to find the perpetrators of crimes to be committed in the future more easily. The storage of forensic documents in detail and in accordance with the rules can also enable the 'development of a better crime tracking management'. For this purpose, it is necessary to be able to keep track of the diary with the development of archive areas in terms of storing judicial documents and ensuring their continuity.

In addition, it is useful for the personnel performing the archiving process (whether they have received professional training or not) to follow a certain archiving method when performing the archiving process. For example, when examining forensic documents a forensic document specialist may keep some important-unimportant notes. These notes should definitely be archived separately from the original of the forensic document, but in such a way that they will never spoil the relationship status. Thus, an archiving process can be performed without decoupling the connection between the original crime record and the interpreted crime record. It is recommended that the bond between the forensic document specialist and the archivist-archivist be strong. If a strong connection cannot be provided, it may be difficult to draw positive conclusions from forensic documents. The negative results of the examination of the existing judicial documents will also have a negative impact on the documents that will be produced later in a chain.

When examining forensic documents, first 'detailed document analysis' is performed. Document analysis is the process of commissioning the content of a forensic document together with the information regularly obtained from the documents examined and the necessary comments received. In other words, document analysis is a method of systematically developing information from documents. In addition, forensic document experts can develop various technical methods to improve the data they obtain from document analysis in cases where different forensic events occur. For example; survey, interview, observation, experimental methods, etc. methods can be followed. By utilizing each of these methods and synthesizing these methods, 'crime statistics' are also revealed. The most critical point in these procedures is that it is important to accept from the very beginning that meticulous and detailed information can be obtained from well-kept crime archives and to act accordingly. In criminal archives that are kept effectively, the emphasis is on not omitting a body of information and, in particular, preventing a situation that would be allowed to occur by chance. Keeping the criminal archive strong and supporting it with technology will enable the construction of more developed forensic archives over time.

### **Development of Archiving Methods and the Importance of Electronic Archiving**

Today, monitoring e-archiving activities and allocating a high budget to these studies is a vital element for the effective examination of forensic documents and the sustainability of criminology science. In most cases, it is of great importance that information can be accessed very quickly from anywhere in the country. For example, electronic forensic systems can come to the fore in quickly querying a criminal's GBT and recording the results. In addition, digital archiving of forensic documents is cheaper and more practical than physical archiving. In addition, electronic archives can also enable more than one law enforcement agency to work collaboratively. In the past, the importance of this situation in the coordination and comparison of criminal records of the gendarmerie and police law enforcement forces in Turkey has been brought to the agenda from time to time, and some incomplete and problematic situations have emerged according to the legislation in accordance with the conditions of the day.

With today's technology, all these difficult situations have been prevented. Considering all these reasons, developing judicial documents with electronic archiving applications and supporting all kinds of technological developments in this regard has become an important activity. In today's conditions, there is no point in showing unnecessary resistance to the elements developed in the field of archiving and ignoring the developments of time and technology with the ideas of ancient times. Electronicization and its benefits are an inevitable process for the development of human life day by day. It is very important to make forensic document management ready for the world of artificial intelligence and metaverse. Nowadays, the use of artificial intelligence is increasing in all public and private business areas. "In order for artificial intelligence to provide more objective inferences, the captured outputs must be integrated into human decisions within the context of the current situation. Statistical methods should be used to monitor algorithm output to detect possible biases" (Özer, Perc & Suna, 2024, p. 7). In the future, with the support of statistical science and the development of human intelligence, metadata and artificial intelligence arguments will become the most important factors in many business fields. Perhaps in the future, it will even be possible to track or catch criminals with artificial intelligence tools. Various films are being shot on this subject even in Hollywood. For example, the movie "Minority Report, takes place in Washington in 2054 and is about a government organization called the Pre-Crime Unit (PRC). The main subject of the movie is the crime thanks to three prophets named

Agatha, Dashiel and Arthur, who see the future and are depicted as 'precogs'. It can be detected before it is committed and criminals can be caught. The fact of crime and the fact of guilt can be determined on the basis of previous predictions. This method works with the support of computers and artificial intelligence and allows crime rates to be calculated" (Minority Report, 2024).



**Figure 1. Minority Report Movie Show Poster**

In summary, e-archiving activities are a very important application area in terms of efficient examination of forensic documents and the sustainability of criminalistics science. In addition, archiving forensic documents in digital form provides a faster and more practical access and usage process than physical archiving. Documents stored electronically can be organized, searched and transferred to relevant locations more transparently. It also allows multiple law enforcement agencies to work collaboratively. For all these reasons, the development of forensic documents with electronic archiving applications is an important field of study.

### **Evaluation and Recommendations**

Today, the speed of development of archiving science, determination of the determination of development and the peak point at which archiving science will develop can never be known. When we come to the year 2024, electronic archiving has become a priority regardless of the public and private sectors with the influence of developing technology. Now the archiving of electronic documents is at the forefront more than the archiving of documents in paper media. As a natural result of this situation; in order to produce all kinds of documents to be archived electronically, to digitize documents previously available on paper and to maintain electronic archiving which is the most important factor, in an efficient and functional way, a higher rate of work status has emerged. It should be recognized that electronic archiving is an important necessity of our time. In addition, in the process of editing and defining electronic documents, the development of traditional archival principles and the addition of different interpretations have become a priority. The transition to digital provides various opportunities for the archival profession to study and interpret the principles and further develop them. The support of archival experts in this regard can also be seen more clearly in recent years.

With the development of forensic sciences and graphology, the situation of doing more work in this field has started to emerge in many countries of the world. The countries that have been brought to the forefront by graphologists by carrying out technical studies on them are expanding from China to Switzerland, from the USA to different countries of the Old Continent. Graphology and criminology are gradually ceasing to be areas that deal only with criminals. These fields have started to find a field of study for him, from legal sciences to the very middle of the labor market, including human resources management. It is especially important for the development of graphology science in our country. It is of great importance to keep graphology studies and personnel awareness high in personnel recruitment processes and personnel policies of corporate/private enterprises in many sectors. It is important to keep the psychological condition of the personnel healthy and not to put into operation a personnel who may cause problems by anticipating them in advance. The article explains in detail how the sciences of graphology and criminology are linked to archival science. It offers suggestions on how graphology and criminology studies can be used in archiving processes. However, there is some criticism of the validity of graphology and it is noted that this discipline does not always provide reliable results.

It is possible to develop the science of archiving with the influence of graphology and criminology studies. Some suggestions

can be put forward for archival experts and forensic scientists to carry out joint studies on this issue. These recommendations can be a guide for technical/academic studies to be conducted on this topic in the future. The recommendations can be materialized as follows:

- ✓ It is observed that the number of specialists working in the field of graphology and criminology is quite low in our country. Educational activities on this issue should be brought to the forefront and a larger number of specialists should be trained urgently.
- ✓ In order to perform forensic document analysis faster and more effectively, powerful equipment and technical equipment support should be provided. Opinions and technical support should be obtained from various expert institutions/people on this issue.
- ✓ A larger number of academic publications on graphology and criminology should be made at universities. In order to contribute to this proposal, a special budget should be provided for the regular addition of each of the databases in this field to the publishing houses and information centers of universities. (By the Higher Education Institution / Y.Ö.K.)
- ✓ In order to be able to follow the current developments in the field of forensic document examination, forensic science personnel should be subjected to in-service trainings where they can constantly learn new techniques and technologies.
- ✓ It is necessary to develop appropriate environments for experts working in the field of forensic document examination and criminology to work together with archival specialists. In this context, importance should be given to membership in international scientific societies, participation in international professional meetings and cooperation between organizations. In matters such as education, research and publication provision; with the T.C. General Directorate of Security, T.C. The Presidency of the State Archives should be in constant elbow contact.

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## References

- Albayrak, İ. (2016). The transition from symbols to cuneiform writing and the arrival of writing in Anatolia. *Archivum Anatolicum*, 10(2), 21-22. <https://dergipark.org.tr/tr/pub/aran>
- Artuk, M. E. (2018). Definition of criminology. *Istanbul Medipol University Faculty of Law Journal*, 5(2), 5-14. <https://dergipark.org.tr/en/download/article-file/1102274>
- Bafra, J. (2003). Handwriting-the problem of the importance and qualities of expert witness in signature and document examination. *Journal of the Istanbul Bar Association*, 77(4), 887-896.
- Birincioğlu, İ. & Aşıcıoğlu, F. (2005). *Forensic document examination*. Beta Publishing.
- Brewer, J. F. (1999). Graphology. *Complementary Therapies in Nursing&Midwifery*, 5, 6-14. doi: 10.1016/S1353-6117(99)80065-1
- Ciesla, R. & Baffoni, J. G. (2017). Selected issues in handwriting examination, graphology and their technology in document examination. *Nowa Kodyfikacja Prawa Karnego*, 45, 63-80. doi: 10.19195/2084-5065.45.6
- Cihangiroğlu, B. (2009). *Forensic sciences*. Publications of the Gendarmerie Criminal Department.
- Criminal Bureau*, (2024). <<https://kriminalburo.com/>> Access Date: 3 March 2024.
- Cyprus Report on Fake Diplomas, (2024). <<https://www.gazeteduvar.com.tr/kibrista-sahte-diploma-raporu-davali-da-davaci-da-memnun-degil-haber-1672538>> Access Date: 1 July 2024.
- Çakır, İ. & Aslıyüksek, H. (2014). Tools and devices used in the field of forensic document examinations. *Archive World*, 16, 25-33. <https://dergipark.org.tr/tr/download/article-file/1184156>
- Çakır, İ. & Üner, H. B. (2004). Physical applications in forensic medicine. *Turkish Physical Society 22. Physics Congress in the Bodrum Abstract Book (p. 368)*. Turkish Medical Association.
- Çalık, B. (2018). Legal place, origin and development of criminology in the determination of crime. *Turkish Studies Social Sciences*, 13(26), 307-327. <https://turkishstudies.net/DergiTamDetay.aspx?ID=14072>



- Dazzi, C. & Pedrabissi, L. (2009). Graphology and personality: An empirical study on validity of handwriting analysis. *Psychological Reports*, 105 (3), 1255-1268. <https://journals.sagepub.com/doi/10.2466/PRO.105.F.1255-1268>
- Demirbaş, T. (2020). *Criminology*. Seckin Publishing.
- Ferrell, J. (1999). Cultural criminology. *Annual Review of Sociology*, 25, 395-418. Linked data: doi: 10.1146/annurev.soc.25.1.395
- Fluckiger, F. A., Tripp, C. A. & Weinberg, G. H. (1961). A review of experimental research in graphology 1933-1960. *Perceptual and Motor Skills*, 12(1), 67-90. doi: 10.2466/pms.1961.12.1.67
- Galvano, F., Caporale, M. E. & Siliquini, C. (2023). Graphology in forensic contexts: Unveiling personality and behavior through handwriting analysis. *Behaviour Analysis Team Research Proposal*. doi: 10.13140/RG.2.2.25537.33125
- Gökcan, H. T. (2009). The Crime of Forgery in an Official Document (TCK m. 204). *Ankara Bar Association Journal*, 67(3), 93-126. <https://dergipark.org.tr/tr/download/article-file/397586>
- Graphological Drawings*, (2024). <<https://daily.jstor.org/graphology-isnt-real-science/>> Access Date: 27 February 2024.
- Graphology*, (2024). <<https://u.osu.edu/vanzandt/2018/03/08/graphology/>> Access Date: 26 February 2024.
- Handwriting and Character Analysis, (2024). <<https://kikwell.com/grafoloji-el-yaziniz-karakteriniz-hakkinda-ne-soyluyor/>> Access Date: 01 July 2024.
- Jimenez, E. G. (2015). An introduction to graphology: Definition, theoretical background and levels of analysis. *Miscelánea: A Journal of English and American Studies*, 51, 71-85. <https://papiro.unizar.es/ojs/index.php/misc/article/view/7169/6020>
- Kaymaz, K., Gürsakal, N. & Eroğlu, U. (2010). Analyzing the relationship between signature and personal traits: A research on managers. *Journal of Business, Power, Industrial Relations and Human Resources*, 12(3), 29-40. doi: 10.4026/1303-2860.2010.148.x
- Kuzucuoğlu, A. H. & İplikçi, Ş. (2019). The role of an expert in the analysis of known and questioned writings in forensic document examination. *Police Academy I. International Forensic Sciences Congress (1st ICFS) December 2, 2019, Police Academy*.
- Mangone, E. (2018). From calamities to disasters: Pitirim Aleksandrovic Sorokin's insights. *Human Arenas*, 1, 79-85. <https://doi.org/10.1007/s42087-018-0001-2>
- Marano, et al. (2020). Graphology: An interface between biology, psychology and neuroscience. *Psychological Disorders and Research (PDR) Journal*, 3(3), 2-13. doi: 10.31487/j.PDR.2020.03.05
- Minority Report, (2024). <<https://turkiye.ai/minority-report-gercek-mi-oluyor/>> Access Date: 03 July 2024.
- Oluğ, Z. (2019). *Protection of items in the judicial escrow office and management of archival records*. Unpublished Master's thesis. İstanbul: Marmara University Institute of Turkic Studies.
- Ow, S. H., Teh, K. S. & Yee, L.Y. (2005). An overview of the use of graphology as a tool for career guidance. *CMU Journal*, 4(1), 91-104. <https://www.thaiscience.info/journals/Article/CMUJ/10325045.pdf>
- Özdemirci, F. (1999). Document management and total quality in organizations. *Turkish Librarianship*, 13(2), 101-111. <http://www.tk.org.tr/index.php/TK/article/view/1602>
- Özer, M. Perc, M. & Suna, H. E. (2024). Artificial intelligence bias and the amplification of inequalities in the labor market. *Journal of Economy Culture and Society(JECS)*, 1, 1-10. doi: 10.26650/JECS2023-1415085
- Pratiwi, D., Santoso, G. B. & Saputri, F. H. (2017). The application of graphology and enneagram techniques in determining personality type based on handwriting features. *Jurnal Ilmu Komputer dan Informasi (Journal of Computer Science and Information)*, 10(1), 11-18. doi: 10.21609/jiki.v10i1.372
- Saudek, R. (1929). Experimental graphology. *Science Progress in the Twentieth Century (1919-1923)*, 23(91), 468-486. <https://www.jstor.org/stable/43429884>
- Schlicht, L. (2020). Graphology in Germany in the 1920s and 1930s: Amateurs, psychologists, and the police on the scientific nature of graphology. *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin*, 28, 149-179. <https://link.springer.com/article/10.1007/s00048-020-00246-8>
- Şeşen, Y. & Kuzucuoğlu, A. H. (2021). Intelligence activities in the context of data and information security. *Library Archive and Museum Research Journal (Lamre)*, 2(2), 93-110. <https://dergipark.org.tr/tr/download/article-file/2181158>
- Thorpe, D. E. (2018). Nonsense rides piggyback on sensible things: The past, present, and future of graphology. (eds). Tweed, H.C., Scott, D.G. *Medical Paratexts from Medieval to Modern. Palgrave Studies in Literature, Science and Medicine*. Cham: Palgrave Macmillan. doi: 10.1007/978-3-319-73426-2\_9
- TCK, (2024). <<https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=5237&MevzuatTur=1&MevzuatTertip=5>> Access Date: 1 March 2024.