

**UNIVERSITY OF PÉCS
FACULTY OF LAW
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**AN INTERDISCIPLINARY APPROACH
TO COMPLEX HANDWRITING
EXAMINATION**

THESES OF THE PHD DISSERTATION

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„Verba volant, scripta manent.”¹

¹ BÁNK József: Latin bölcsességek: szállóigék, velős mondások latinul és magyarul. [Latin wisdoms: common sayings and maxims in Latin and in Hungarian] Szeged, Szent Gellért Egyházi Kiadó, 1993. p. 380.

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I. BRIEF SUMMARY OF THE RESEARCH TASK

1.1. Introduction

It is possible to establish past facts, because the facts of the material world are connected: they presuppose and affect one another, and they make a change in their environment. Every fact leaves a trace. The proceeding authorities carry out a search in the present for traces of the past to enable them to make decisions concerning the future.²

In Wittlich's view, it transpires through a man's lifework whether it is built on lies or stems from sincerity, because a person's inner world has to be in conformity with what the person conveys to the outside world. The creative force existing in a person's inner world has to emanate into every area of his or her life for the person to be in harmony with himself or herself.³ Every person's existence makes the world different from what it would be without him or her. Human existence is a series of good and bad decisions: we love, suffer, play, work, talk to each other and *write*... In some form we always leave a trace in the world. These traces observed "with the eyes of an expert" may reveal the reality.

In Max M. Houk's view, the modern world of justice is expanding. There are an increasing number of judicial experts, and we have more in-depth and more complex academic literature at our disposal. Working in the field of forensic science is an exciting and multidisciplinary profession. This world is made up of a unique mixture of science, law and management, facing an unlimited number of unparalleled challenges encountered by no other field.⁴

² VASS Kálmán: A kézírásvizsgálat helye a bizonyításban. [The place of handwriting examination in evidence] In: GÖDÖNY József (szerk.) Kriminálisztikai tanulmányok 6. kötet. Budapest, Közgazdasági és Jogi Könyvkiadó, 1968. p. 5.

³ WITTLICH, B.: Graphologische Praxis. Die Handschrift – Analyse als Hilfsmittel für Psychologen, Pädagogen und Ärzte. Berlin, Walter de Gruyter & Co., 1961. p. 122.

⁴ CALIGIURI, M. P. – MOHAMMED, L. A.: The Neuroscience of Handwriting. Applications for Forensic Document Examination. International Forensic Science Investigation Series (Series Editor: Max HOUCK), Boca Raton – London – New York, CRC Press, Taylor & Francis Group, 2012. p. ix.

1.2. Reasons for the choice of topic, the purpose of the dissertation, raising the problem and about the topic

Writing is the physical embodiment of thought, but it is indifferent to the thought content of the written words. According to ancient Greek philosopher Demokritos, tragedies and comedies alike are written with the same letters. To translate his statement into present-day terms: texts injuring and endangering social order and people's interests are written with the same letters as writings that forward the causes of mankind. The written word may become an instrument in the commission of crime, therefore writing is important from the aspect of criminalistics and must be well known by the criminalist.⁵

The conditions for the operation of *the forensic expert* (and the institution of forensic expert examination) are guaranteed by legal regulation. New life situations require amendments and new legal regulations, which may differ from country to country. Therefore it is justified to have an overview of this area. One field of forensic expert activity is the handwriting expert examination.⁶

In my opinion, evidence justifying the existence of 21st century handwriting may be found, on the one hand, in the history of writing and on the other hand, in the humanistic foundations of handwriting, that is why I consider it relevant to present these areas.

The history of writing (pictography, ideography, lexigraphy, syllabic script and alphabetical writing), the fact of its adaptation to human needs and it being in a state of change even now (continuously becoming adjusted to the present) provide proof that writing is going to survive in the future as well. Therefore, it is important for people dealing with writing to monitor the process of changes in writing (the course of fading out and transformation of special features of writing or the appearance of new special features of writing).

Besides general knowledge, it is expedient to focus on a specific area. In the case of a Hungarian criminalist the focus should be Roman script, among cursive handwriting types the one taught in Hungary, because these are the ones that occur most frequently in practice. It is important to know the special features and general characteristics of handwriting from a non-

⁵ SZILÁK Jolán: A magyarországi latin betűs folyóírás a 20. században. [Modern Latin cursive script in Hungary in the 20th century] Budapest, BM Tanulmányi és Propaganda Csoportfőnökség, 1977. p. 13.

⁶ Decree No 9/2006. (II. 27.) IM Annex 12

criminalistical aspect (e.g. its components and taught variations), as well as variations from the school norm to enable identification for a criminalistic purpose.⁷

For the above reasons, I discuss the foundations of the pedagogy of writing and the conditions and variations of the teaching of writing in the part entitled “Pedagogy of Writing”, and I cover the types of writing taught as the norm in the specific eras in the part entitled “History of Writing in Hungary”.

Becoming acquainted with *the humanistic foundations of writing (pedagogy of writing, psychology of writing, biology of writing and the relationship between handwriting and health)* also contributes to extensive support the fact that handwriting constitutes „brain writing”⁸. The acquisition and use of writing develops the corresponding areas of the cerebral cortex, it is a fact that if you use something, you develop it.⁹ Research has been launched to explore the relationship between handwriting and health, to exploit the possibilities hidden in writing diagnostics and to corroborate the positive effects of writing on health. All this serves as new evidence in support of the fact that the survival of handwriting is in the best interests of mankind.

Furthermore, the individual nature of handwriting may be traced back to the biological (and psychological) roots of handwriting, which may render possible identification for criminalistic purposes.

For these reasons, I discuss the biological foundations of handwriting in the part entitled “Biology of Writing” and I deal with the psychological foundations of handwriting in the part “Psychology of Writing”.

In my field I endeavour to partake in ensuring *equal opportunities and accessibility*. Therefore I have completed an expert training in intercultural sign language communication, and based on the knowledge and experience acquired there, I started researching the situation of the deaf. *In one of my own independent inquiries I explored the domestic and foreign possibilities of their access to learning* with the aim to enable an increasing number of deaf people - by ensuring and facilitating their further training - to obtain a degree in medicine or engineering, or even criminal expert qualifications. My results are set forth in the part of the dissertation on the pedagogy of writing *In my other independent research I approached*

⁷ SZILÁK, 1977, p. 13-14.

⁸ TREMMEL Flórián – FENYVESI Csaba – HERKE Csongor: Kriminalisztika. (Forensic Science) Budapest – Pécs, Dialóg Campus Kiadó, 2009. p. 138.

⁹ LIGETI Róbert: Az írástanulás pszichológiája. [The Psychology of Learning to Write] Budapest, Tankönyvkiadó, 1982. pp 27-31.

deafness from the aspect of criminal investigation and examined if a deaf person's handwriting has a criminalistic identification value. My results are presented in the chapter of the dissertation that deals with handwriting.

I had a two-fold motivation to look for answers to the new challenges arising in the field of the examination of writing. On the one hand, it resulted from the fact that I had been granted the opportunity to carry out assistant lecturer's tasks at the Department of Criminal and Civil Procedure (formerly: Criminal Procedure and Forensic Science) at the Faculty of Law, University of Pécs. Moreover, this takes place in the frames of the criminalistic school of the historic criminal workshop of Pécs also hallmarked earlier by the name of László Vargha, today of Flórián Tremmel, Csaba Fenyvesi and Csongor Herke. The other source of my motivation was that besides my degrees in law and psychology I am also a qualified forensic handwriting expert and graphologist.

Based on my experience, I think the more angles one approaches a thing from, the better one may get to know and understand it and the more one may learn about it. Therefore in my opinion the experts concerned (e.g. handwriting experts) can work effectively and make the right decisions if they approach their task from an interdisciplinary aspect. In other words, if they are in the possession of the main professional knowledge of other disciplines also dealing with writing (psychology, biology, medicine, pedagogy) and thereby they become holistically thinking experts "*with an interdisciplinary knowledge base*".

I would like to draw attention to the importance of applying an interdisciplinary approach and emphasize its advantages with regard to handwriting examination. In this spirit, in the dissertation *I expound my proposition about the complex 2+1 pillar model of the examination of writing*, of which the history of writing, pedagogy of writing, psychology of writing, biology of writing, writing diagnostics and writing therapy (besides document examination and the auxiliary sciences) all constitute integral parts. The body of knowledge of the fields constituting the model enables handwriting examination experts to carry out their task applying an interdisciplinary knowledge base and allows us to define the proper place of handwriting expert examination in the system of sciences.

1.3. The hypotheses of the dissertation

I have formulated my hypotheses in the spirit of the objective of my dissertation, i.e. providing an outline of the possibilities hidden in an interdisciplinary approach to complex handwriting examination.

1. By presentation of the history, continuous evolution and role of writing, it is possible to justify the use of handwriting in the 21st century.
2. The individual nature (identifiability for criminalistic purposes) of handwriting may be justified by the humanistic roots of handwriting and the basic principles of criminalistics.
3. A deaf person's handwriting has a criminalistic identification value.
4. Following the study of the foreign model, the Hungarian system of deaf education may be made more efficient.
5. Following the comparison of old and effective, foreign and Hungarian criminal procedural acts, the Hungarian regulation of the institution of forensic expert examination may be rendered more straightforward, through minor changes in the text of the Criminal Procedure Act of 2017.
6. The examination of the signature is of utmost importance.
7. The use of IT methods and programmes (cybernetics) will become everyday practice in handwriting examination.
8. By comparing handwriting expert examination and graphology, it is possible to present their identical and different features as well as the boundaries of their respective competence.
9. It is possible to determine gender based on one's handwriting.
10. It is possible to develop a complex system of the examination of writing.
11. Handwriting expert examination may become an independent discipline.

II. BRIEF DESCRIPTION OF THE COMPLETED EXAMINATIONS AND ANALYSES, METHODS OF ELABORATION

2.1. Methods applied in the dissertation

I classified my methods applied during the writing of my dissertation into two main types. I named these types as: the more passive (more receptive) and the more active (more operative) types.

For me, the more passive (more receptive) method meant becoming acquainted with the relevant academic literature and legal regulations.

My research into academic literature (in the spirit of the interdisciplinarity of the topic) extended to acquiring knowledge of the science of biology, psychology, medicine, pedagogy, history (history of writing), criminalistics and the science of law and their Hungarian and foreign, printed and electronic academic literature (monographs, co-authored books, textbooks, journals, and academic papers).

In the case of legal regulations I placed special emphasis on the solutions provided by criminal procedure acts concerning judicial experts.

Following the elaboration of Hungarian legal regulations from a historical perspective, I examined the regulation in force.

Then I reviewed foreign legal regulations (legal procedure acts of 20 countries: France, Germany, Italy, Austria, Spain, the Czech Republic, the Netherlands, Romania, Sweden, Malta, Lichtenstein, Switzerland, Canada, Mexico, South African Republic, Kenya, Western Australia, New Zealand, Kazakhstan and Mongolia of 5 continents: Europe, America, Africa, Australia and Asia) concentrating on the institution of forensic expert examination in general, and handwriting expert examination in particular.

As for the more active (more operative) method, I used it alongside the passive method in my three independent researches.

2.1.1. Methodology of my own research into the education of the deaf

I reviewed Hungarian academic literature and with the aim of learning about a Hungarian practical example I contacted the Support Service of the University of Pécs.

Then I approached by email the American Gallaudet University and the University of Jyväskylä in Finland (the two most important foreign higher education institutions dealing

with deaf education). Out of them, I managed to establish genuine contact with the former Gallaudé University.

I formulated my recommendations for modernizing and rendering more effective Hungarian deaf education following the study of the tried and tested American practice and foreign academic literature.

2.1.2. Methodology of my own research examining the criminalistic identification value of a deaf person's handwriting

I carried out a full graphological analysis of writing samples of deaf persons (I explored macro-, mezo-, basic and microstructural features, dynamic characteristics and I also paid attention to analysis from the aspect of letter symbolism).

Following this, I compared the received examination results with the data contained in academic literature relating to hearing people and drew my conclusions.

2.1.3. Methodology of my own research into the possibility of determining gender based on one's handwriting

Proceeding from the viewpoints contained in academic literature on handwriting examination and graphology, I developed a complex (containing knowledge of both handwriting expert examination and graphology) 12-element system of criteria (scheme of analysis).

With its help I compiled a “check list” consisting of the writing specifics to be examined (which contains 4 main, 6 subsidiary and 2 supplementary items).

Based on this I examined the writing samples and evaluated the results.

In my dissertation I approached the topic under examination through a descriptive, critical, comparative and analytical method with a holistic view following an interdisciplinary approach. My aim was to deal with as many disciplines and points of interconnection as possible and to discuss the topic under examination approaching it objectively and with the intention of problem-solving.

III. BRIEF SUMMARY OF SCIENTIFIC RESULTS, THEIR UTILIZATION AND POSSIBILITIES FOR THEIR UTILIZATION

3.1. Brief content overview of the dissertation

My dissertation is divided into seven main parts: (I.) Introduction, (II.) Justification for the existence of writing (and handwriting), (III.) Humanistic foundations of handwriting, (IV.) Forensic (handwriting) expert examination, (V.) Handwriting examination, (VI.) Scientific grounding of handwriting examination, and (VII.) Summary.

The *Introduction* (I.) deals with my reasons for the choice of topic and the purpose of the dissertation, to the hypotheses and the presentation of the applied methods.

In the chapter entitled *Justification for the existence of writing (and handwriting)* (II.) I formulated *my definition of the notion of writing* (a human communication system, which renders perceptible the various languages through agreed signs displayed on a written medium). This part presents the main stages of *palaeography (world and Hungarian handwriting history)*.

It makes mention of *alphabets falling outside the scope of alphabet letter systems of ordinary writing*.

It deals with the transformation of the hardware and software for writing. It is here that I raised the idea of introducing a *4th generation writing system*.

The chapter entitled *Humanistic foundations of handwriting* (III.) – stressing the individual nature of handwriting – discusses *the humanistic (pedagogical, psychological and biological) foundations of writing*. Then the relationship between handwriting and health is presented.

The part on the *pedagogy of writing* covers – old and modern – methods having a dominant role in the world's (Sumerian, Babylonian, Greek, American, Anglo-Saxon, Chinese, Japanese, Indian and European) and Hungarian teaching of writing. It deals with one area of accessibility, namely, the teaching of deaf people. In this field I carried out *independent research* (1.)¹⁰ and formulated proposals for rendering more efficient and up-to-date the teaching of deaf people in Hungary.

¹⁰ See: in part 3.2. Checking the hypotheses of the dissertation and achievement of its objectives, 4. Following the study of the foreign model, the Hungarian system of deaf education may be made more efficient, Verification of the 4th hypothesis.

The part on the *psychology of writing* covers the evolution of the psychology of learning to write into an independent special field, the role of writing in personality development, the principles of learning to write (e.g. Pavlov's research), the mental functions required for writing, the process of development of writing skills.

The part on *the biology of writing* examines handwriting as a sensomotoric activity. It deals with the complex process of executing handwriting and the relationship between the central nervous system and the writing movement. It discusses in detail the fact that handwriting constitutes a dynamic stereotype.

The part on *the relationship between handwriting and health* draws attention to the possibilities hidden in the writing diagnostics. It expounds in detail the positive effect of writing on mental and physical health. It emphasizes that because of the individual nature of handwriting, the word "*brainwriting*" used by Meyer and Pophal is much more appropriate instead of "*handwriting*".

The chapter on *Forensic (handwriting) expert examination* (IV.) presents criminalistic and criminal procedural knowledge.

Within *criminalistics* the chapter sets forth in detail its system of connections, structural division, identification theory and the possibilities of biometric identification.

As an *international outlook* I examined evidence, experts and particularly handwriting experts in the criminal procedural acts of 20 countries (France, Germany, Italy, Austria, Spain, the Czech Republic, the Netherlands, Romania, Sweden, Malta, Lichtenstein, Switzerland, Canada, Mexico, the South African Republic, Kenya, Western Australia, New Zealand, Kazakhstan and Mongolia) of 5 continents (Europe, America, Africa, Australia and Asia). It is to be emphasized that out of the 20 foreign countries examined the criminal procedure acts of 12 countries (Germany, Italy, Romania, Malta, Lichtenstein, Switzerland, Western Australia, Canada, Mexico, South-African Republic, Kazakhstan and Mongolia) include passages relating specifically to handwriting experts.

The chapter discusses *the (former and effective) Hungarian criminal procedural regulation of expert evidence*. Concerning this topic I have formulated *six recommendations* about amendments to the normative text of individual passages of the Hungarian act on criminal procedure in force.

The chapter on *Handwriting Examination* (V.) contains the various functions of writing and the relationship between law and literacy. It is in this part that I formulated *my definition for the notion of handwriting* (visible manifestation of a type of brain activity displayed through agreed graphic signs mediated by the hand, which characterizes the writing

person and renders him or her identifiable). The chapter outlines the main stages in the history of handwriting expert examination and graphology. It is here that I summed up the relevant elements of the dissertation by László Vargha entitled “Handwriting examination”. In addition, I have also discussed the situation regarding graphology in Hungary.

The major part of the chapter contains *the comparison of handwriting expert examination and graphology*, presenting their identical and different features based on 11 aspects (nature of identification; character of expert opinion; methods; means; focal point of writing characteristics; criteria regarding the material under examination; subject matter; signature; functions; areas of application; what questions may be answered). During my research into the aspect of “What questions may be answered”, I dealt with 5 questions (gender; age; personality traits; level of education and occupation; as well as establishing the extraordinary state of the person executing the handwriting). About my findings I compiled a table of key words for better perspicuity.

I introduced *my independent (explorative) research carried into the question “Does a deaf person’s handwriting have a forensic identification value?”* (2.). Based on the data of my analysis certain special characteristics appeared strikingly as a tendency¹¹ in the handwriting of deaf persons.

I presented *my independent (explorative) research* (3.) out into the topic “*Is it possible to establish a person’s gender based on his or her handwriting?*” which has also revealed some distinct tendencies¹² as to what characteristics of a person’s handwriting point to it coming from a man or a woman.

The chapter entitled *Scientific grounding of handwriting examination* (VI.) sets forth in detail the criteria for constituting a science. I have analysed and presented in a table to what extent handwriting expert examination and graphology meet the Daubert criteria, and I have suggested a solution to the problems. I have discussed: (1.) the common paradigm, (2.) the general acceptance of the applied method (including the possibilities hidden in cybernetic handwriting examination; and the question of validity, presenting in detail the impact of the Daubert case too, (3.) the requirement of publication, (4.) the provision of an explanation and a solution (touching upon the possibilities hidden in an interdisciplinary and complex approach to the examination of writing: by expounding “small complexity” and “big complexity” (designations created by me), (5.) the significance of probability and of the

¹¹ See: in part 3.2. Checking the hypotheses of the dissertation and achievement of its objectives, 3. A deaf person’s handwriting has a criminalistic identification value. Verification of the 3rd hypothesis.

¹² See: in part 3.2. Checking the hypotheses of the dissertation and achievement of its objectives, 9. It is possible to determine gender based on one’s handwriting. Verification of the 9th hypothesis.

calculation of probability (including the applicability of the Bayes theorem and the question of probability scales), as well as (6.) training (setting forth my proposals about including teaching material on handwriting expert examination and graphology in the individual training programmes). I have summed up my conclusions in a table. I have emphasized that, with regard to their relationship with criminalistics, handwriting expert examination constitutes a specific type of criminal technical examination and a special subfield of criminalistics, while the body of knowledge of graphology may play an important role currently not in the field of criminalistics, but among the methods (diagnostic procedures) of psychology.

I have presented the current system of the forensic examination of writing. I have made a proposal about the branches of the examination of writing (handwriting examination and document examination), and also about modifying the boundaries of the competence of handwriting experts and document experts (modification of certain boundaries of competence contained in Section 25 and Section 27 of Decree No 31/2008 (XII. 31.) IRM of the Ministry of Justice and Law Enforcement (transferring the examination of typewritten texts from the competence of handwriting experts to that of document experts). Concerning the branch of document examination, I have discussed in detail methods enabling the identification of modern technical devices.

I have emphasized that with regard to the examination of writing I consider textual linguistics as a particularly important auxiliary science and I have also dealt with the possibilities offered by it for criminalistics (What questions can it answer?).

At the end of the chapter I have made a recommendation (illustrated in a table) about *introducing a complex, 2+1 pillar model¹³ (conceived by me) of the examination of writing* in the 21st century (handwriting examination and document examination + auxiliary sciences). I have also presented the place of handwriting expert examination in the system of sciences (illustrating my idea in a diagram¹⁴).

In the chapter entitled *Summary* (VII.) I discussed the checking of the hypotheses and the achievement of the objectives. Finally, I gave a summary outlining and grouping the results and proposals of the dissertation in a form that may be utilized by legislation, law enforcement and various sciences.

¹³ See: In part 3.2. Checking the hypotheses of the dissertation and achievement of its objectives, Point 10. It is possible to develop a complex system of the examination of writing. Verifying the 10th hypothesis

¹⁴ See: In part 3.2. Checking the hypotheses of the dissertation and achievement of its objectives, Point 11. Handwriting expert examination may become an independent discipline. Verifying the 11th hypothesis

3.2. Checking the hypotheses of the dissertation and achievement of its objectives

Brief outline of the checking of my hypotheses formulated at the beginning of my dissertation and of the achievement of my objectives.

1. By presentation of the history, continuous evolution and role of writing, it is possible to justify the use of handwriting in the 21st century.

Verification of the 1st hypothesis:

- Not even the early societies could do without the use of written records and this still applies today, but the technical solution will change. I consider it possible to introduce the 4th generation writing system, which - going back to the earlier phases of the development of writing (picture-writing, ideography, lexigraphy and syllabic script), mixing and absorbing them into itself – is equal to its task.
- Research into the diagnostics of writing and foreign research results presenting the positive effects of handwriting on mental and physical health corroborate that handwriting is needed even today.
- The acquisition and continuous practice of the ability of handwriting develops specific areas of the cerebral cortex, therefore the survival of handwriting is in the interests of the whole mankind.

2. The individual nature (identifiability for criminalistic purposes) of handwriting may be justified by the humanistic roots of writing and the basic principles of criminalistics.

Verification of the 2nd hypothesis:

- The international and domestic practice of writing pedagogy helps to reveal the individual peculiarities underlying the process of learning handwriting.
- Writing psychology reveals individual mental functions required for writing.

- Writing biology proves that the creation of handwriting requires the coordinated functioning of organs of locomotion, organs of senses and the nervous system. Handwriting is a chain or interlinked series of conditioned reflexes, in which the first movement acting as a stimulus gives rise to or activates the next and then the next movement. Handwriting is a dynamic stereotype, which develops in each human being in an individual form. Therefore I can agree with Meyer, who considered that “brainwriting” was a more suitable term instead of handwriting.
- The presentation of the basic principles of criminalistics contributes to understanding the possibility of identification.

3. A deaf person's handwriting has a criminalistic identification value.

Verification of the 3rd hypothesis:

- In the test material of my independent (explorative) research (2.), I have noticed characteristic features appearing as a tendency.
- Results diverging from the average appeared mostly in the case of topographic characteristics (layout): shifting of the block of writing (90% in the upper and middle part), the minimal size of the left margin (80% very small, 20% slightly smaller), the minimal size of the right margin (50% missing, 40% small, 10% normal), the size of the upper margin (90% small, 10% normal), and the size of the lower margin (90% large, 10% small).
- I have found with regard to the examined handwritings of deaf people that 100% were not divided into sections, 100% were written with simplified letter forms, their overwhelming majority was with a forward slant (90% with a forward slant, 10% not slanted), 100% were written with closed ovals and overwhelmingly executed with heavy pressure (90% strong, 10% normal).
- It is to be noted as data supporting the results of my earlier research¹⁵ that 100% of the analysed handwritings of deaf men were characterized by an angular connective form.

¹⁵ See: HENGL Melinda: Lehetséges a nem meghatározása a kézírásból? [Is it possible to establish a person's gender based on his or her handwriting?] In: GAÁL Gyula – HAUTZINGER Zoltán (ed.) Tanulmányok "A

4. Following the study of the foreign model, the Hungarian system of deaf education may be made more efficient.

Verification of the 4th hypothesis:

- During my own research (1.) into the field of deaf education, domestic problems came to the surface. Following some international enquiries, I established contact with the Gallaudet University in Washington.

On reviewing their operation, I formulated recommendations to improve the domestic situation:

- (1) unification of the Hungarian sign language,
- (2) creating a demand for further education among the deaf society,
- (3) establishing a secondary education system for the deaf,
- and (4) setting up a higher education system for the deaf.

I also consider it important to bring the domestic legal regulatory background more up-to-date.

5. Following the comparison of old and effective, foreign and Hungarian criminal procedural acts, the Hungarian regulation of the institution of forensic expert examination may be rendered more straightforward, through minor changes in the text of the Criminal Procedure Act of 2017.

Verification of the 5th hypothesis:

- Following the review of the parts relating to experts (particularly handwriting experts) in the criminal procedure acts of 20 countries on 5 continents, as well as several old Hungarian criminal procedure acts and the one currently in force, I formulated 6 recommendations about amendments to the text of the Hungarian Criminal Procedure Act in force.¹⁶

változó rendészet aktuális kihívásai" című tudományos konferenciáról. Pécs, Magyar Hadtudományi Társaság Határőr Szakosztály Pécsi Szakcsoport, 2013. pp. 387-394.

¹⁶ See: in part 3.3.1. Recommendations for legislation

6. The examination of the signature is of utmost importance.

Verification of the 6th hypothesis:

- Because of the spread of computers and the internet (emails, blogs etc.) handwriting examination will focus on the examination of the signature in the future.
- The signature:
 - o on the one hand, it is becoming outstandingly important in the determining the identity of the origin of the hand and in the identification of persons, because documents (contracts, invoices, cheques, receipts, drafts etc.) will always contain a signature,
 - o on the other hand, it may be used well to explore personality traits.

7. The use of IT methods and programmes (cybernetics) will become everyday practice in handwriting examination.

Verification of the 7th hypothesis:

- Through the possibilities offered by “offline” methods (FISH, SCRIPT, EXPERT, PRESS, CEDAR, TRIGRAPH, VSC4Plus).
- Through the possibilities offered by “online” methods (SIC Natura procedure, Graphometer, SignPass, WANDA).

8. By comparing handwriting expert examination and graphology, it is possible to present their identical and different features as well as the boundaries of their respective competence.

Verification of the 8th hypothesis:

- I compared handwriting expert examination and graphology different features based on 11 aspects (nature of identification; character of expert opinion; methods; means; focal point of writing characteristics; criteria regarding the material under

examination; subject matter; signature; functions; areas of application; what questions may be answered).

- I examined based on 5 questions what questions may be answered by handwriting expert examination and graphology (gender; age; personality traits; level of education and occupation; as well as establishing the extraordinary state of the person executing the handwriting).

- Today one may also observe the consistent division of competences at the international level (ABFDE, SWAFDE, SAFDE, GFS, ENFSI).

- The competence of handwriting experts covers personal identification, establishing the person executing the handwriting and the examination of authenticity.
- The competence of graphology is to reveal personality characteristics (personality diagnostics).

9. It is possible to determine gender based on one's handwriting.

Verification of the 9th hypothesis:

- In my own (explorative) research (3.) also I have found several characteristic features that may be more frequently observed in male or female handwriting. Some tendencies have become outlined as to what is more characteristic of a woman's or a man's handwriting.

10. *It is possible to develop a complex system of the examination of writing.*

My recommendation concerning the verification of the 10th hypothesis:

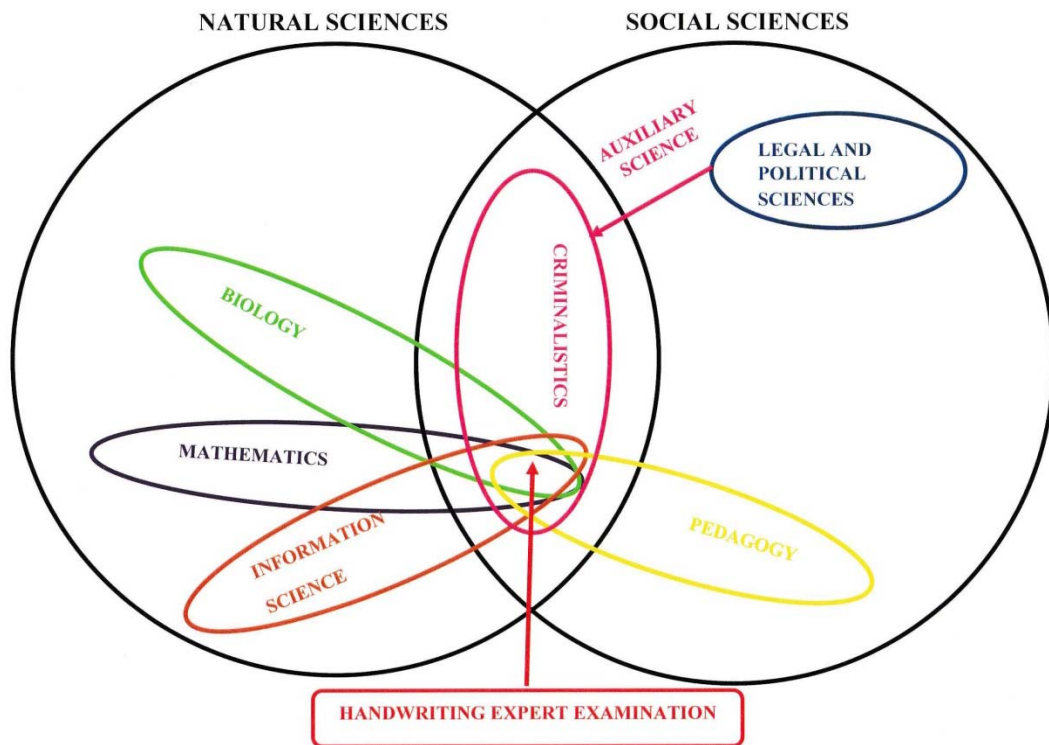
- In my view, it is justified to introduce a 2+1 pillar model for the complex system of writing examination (my idea is shown in the table below).

THE COMPLEX SYSTEM OF THE EXAMINATION OF WRITING			
HANDWRITING EXAMINATION		DOCUMENT EXAMINATION	AUXILIARY SCIENCES
<i>General part</i>	<i>Special part</i>		
<ul style="list-style-type: none"> - History of handwriting - Writing pedagogy - Psychology of writing - Biology of writing - Writing diagnostics - Writing therapy 	Handwriting expert examination	- Forensic document examination (Supplementing the present competences of the field of document expert examination with the examination of typewritten texts.)	<ul style="list-style-type: none"> - Text linguistics - Information science - Etc.

11. *Handwriting expert examination may become an independent discipline.*

My recommendations for the verification of the 11th hypothesis:

- Treating the examination of writing as a complex 2+1 model.
- The place of the discipline of handwriting expert examination in the system of sciences (my idea is shown in the chart below).



3.3. Summary outlining the results and recommendations of the dissertation in a classified form

3.3.1. Recommendations for legislation

I. Modifying the text of the Hungarian Criminal Procedure Act in force:

1. Amending section 197 (5) and section 198 (3) of the Hungarian Criminal Procedure Act in force to ensure consistent use of terminology (instead of “hearing of experts in parallel in the presence of each other”: hearing of experts ~~in parallel~~ in the presence of each other).
2. Following the renumbering of the subsections of section 200 of the Criminal Procedure Act in force, inserting as subsection (1) a subsection providing a reference (to a separate act on the detailed regulation of the rights and duties of experts).
3. Amendment of the current subsection (1) of section 200 of the Criminal Procedure Act in force in the interests of clarity (linking the cases of breach of duty by experts with a section of the act referring to them).
4. Amendment of section 517 (1) of the Criminal Procedure Act in force with regard to section 515 (3) (Concerning the regulation of attendance at the trial, inserting the expressions “where the court deems it necessary”).
5. Amendment of section 189 (6) of the Criminal Procedure Act in force to provide for differentiated time limits concerning the submission of expert opinions (inserting a three-month time limit in the case of complex expert opinions).
6. Amendment of section 194 of the Criminal Procedure Act in force with the aim to facilitate the taking of handwriting samples regarded problematic in Hungary based on the foreign (Swiss) pattern (with regard to prescribing the duty to actively cooperate and sanctioning refusal to cooperate).

II. Modifying the scope of competence of the individual forensic expert fields:

1. Modification of certain boundaries of competence contained in Section 25 and Section 27 of Decree No 31/2008 (XII. 31.) IRM of the Ministry of Justice and Law Enforcement (transferring the examination of typewritten texts from the competence of handwriting experts to that of document experts).

3.3.2. Recommendations for law enforcement

In the spirit of interdisciplinarity:

1. In the interests of the fast analysis of signatures appearing on testimonies and records, incorporating specific and practical graphological studies into the training of lawyers for prospective practising lawyers, prosecutors and judges.
2. I consider it a good solution the list of topics covered by the trainings of the Hungarian Judicial Academy should include, besides lectures conveying knowledge about other disciplines, also topics dealing with handwriting examination.
3. The specialization of judges in specific criminalistic expert fields (through further training courses) in order to ensure that judges adjudicating in the individual courts have a general overview of the main expert fields.

3.3.3. Recommendations for different sciences (special fields)

1. Handwriting examination:

- Application of the tendencies that may be formulated also making use of the results of my own (explorative) research into the determination of gender based on a person's handwriting.
- Unification of terminology.
- Increasing involvement of interdisciplinary experts (interdisciplinary) and expert teams.
- A complex approach to handwriting examination founded on an "interdisciplinary knowledge base" ("small complexity" and "big complexity").
- A complex 2+1 pillar model of the examination of writing.

2. Criminalistics:

- Joint, supplementary and supporting application of the results of the polygraph and handwriting examination in honesty testing in order to increase joint validity.
- Establishing, expanding and up-dating modus operandi registers containing handwriting samples.
- Exploiting the identification value of the deaf person's handwriting. (Based on tendencies manifested in the results of my own research).

3. Legal and Political Science:

- I consider it a good solution teaching of basic handwriting examination (handwriting expert examination and graphology) studies integrated into the training of lawyers.
- I consider it a good solution incorporating graphology (handwriting analysis) studies applicable in everyday practice into the training of police officers.

4. Psychology:

- I also think that it is high time to include the teaching of basic graphology (handwriting analysis) studies in the psychologist training programmes of universities (bachelor and master's courses) and specialist psychologist programmes (clinical psychologist, criminal psychologist), thereby broadening the repertoire of diagnostic tools.
- Full-scale application of graphotherapy.
- Wider utilization of the results of handwriting examination in criminal profiling.

5. Pedagogy:

- I consider it a good solution in the training of primary and secondary school teachers introducing basic graphology (handwriting analysis) studies.
- Full-scale application of graphotherapy.
- Modernization of Hungarian deaf education. (Based on the results of my own research.)

6. Medicine:

- Carrying out further research into graphotherapeutic possibilities contributing to mental recovery.
- Carrying out further research in order to exploit the possibilities offered by the application of the writing diagnostics.

IV. LIST OF PUBLICATIONS ON THE TOPIC OF THE DISSERTATION

2019

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HENGL Melinda: Kriminálisztikai szövegnyelvészet. [Forensic textual linguistics] pp. 108-114., 7p. In: BARÁTH Noémi Emőke – MEZEI József (ed.): Rendészet-Tudomány-Aktualitások A rendészettudomány a fiatal kutatók szemével. Budapest, Magyarország: Doktoranduszok Országos Szövetsége, Rendészettudományi Osztálya, (2019) p. 295

2018

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2017

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2015

HENGL Melinda: Összeillünk? Komplex párkapcsolati összeillés-vizsgálat. [Do we match? Complex partner compatibility testing.] GRAFOLÓGI 21 : 204 pp. 21-27., 7 p. (2015)

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HENGL Melinda: A siketek felsőoktatásának aktuális kihívásai. [Current challenges in the higher education of the deaf] pp. 152-160. In: MÉSZÁROS Attila (ed.): A felsőoktatás tudományos, módszertani és munkaerőpiaci kihívásai a XXI. században. Győr, Magyarország: Széchenyi István Egyetem, (2014)

HENGL Melinda: Comparison of the Branches of Handwriting Analysis. CASOPIS NAUOA - SERIA PRAVO 5 : 2 pp. 1-27. (2014)

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HENGL Melinda: Lehetséges a nem meghatározása a kézírásból? [Is it possible to establish a person's gender based on his or her handwriting?] pp. 387-394. In: GAÁL Gyula; HAUTZINGER Zoltán (ed.): Tanulmányok "A változó rendészet aktuális kihívásai" című tudományos konferenciáról. Pécs, Magyarország: Magyar Hadtudományi Társaság Határőr Szakosztály Pécsi Szakcsoport, (2013) p. 512

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Decree No 31/2008 (XII. 31.) IRM of the Ministry of Justice and Law Enforcement