EXPLORING LETTERFORMS

Has the human body inspired the developmental stages of written communication that are reflected in modern Latin letterforms?

—

Numan Shakil

Master’s Thesis 2018 for Master of Arts
Department of Media | Visual Communication Design
Aalto University School of Arts, Design and Architecture
EXPLORING LETTERFORMS

Numan Shakil
Has the human body inspired the developmental stages of written communication that are reflected in modern Latin letterforms?
Contents

Foreword 02

Acknowledgements 03

Abstract 04

Introduction 06
  Introduction to the topic 06
  Research methodology 11
  Research question 11
  Research type 11
  Data collection methods 12
  Data analysis 12
  Scope of research 13
  Aim and objectives 15
  Strengths and weaknesses 15
  Concerns and limitations 16
  Expected outcomes 17

Literature review

Part 1 - Hints in the development of Latin letterforms 20
  Legends & Origin 20
  Evolution & progression 24
  Establishment & comparison of Latin letterforms 45
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 2 - Hints in nomenclature of Latin letterforms</strong></td>
<td>54</td>
</tr>
<tr>
<td>Development of nomenclature</td>
<td>54</td>
</tr>
<tr>
<td>Inspirations and influences behind nomenclature</td>
<td>66</td>
</tr>
<tr>
<td><strong>Part 3 - Hints in the design of Latin letterforms</strong></td>
<td>72</td>
</tr>
<tr>
<td>Geometry and Letterforms</td>
<td>74</td>
</tr>
<tr>
<td>Geometry and human body</td>
<td>76</td>
</tr>
<tr>
<td>Intersections in design of human body and letterforms</td>
<td>79</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>88</td>
</tr>
<tr>
<td>Part 1 - Evidence in the development of Latin letterforms</td>
<td>88</td>
</tr>
<tr>
<td>Part 2 - Evidence in the nomenclature of Latin letterforms</td>
<td>100</td>
</tr>
<tr>
<td>Part 3 - Evidence in the design of Latin letterforms</td>
<td>114</td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td>126</td>
</tr>
<tr>
<td><strong>List of figures</strong></td>
<td>129</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td>134</td>
</tr>
<tr>
<td><strong>Bibliography</strong></td>
<td>156</td>
</tr>
<tr>
<td><strong>Appendices</strong></td>
<td>160</td>
</tr>
</tbody>
</table>
Foreword

Conventional objects surround us on a daily basis, which carry with them a profound history of design decisions. That same pattern can be seen when putting a lens to written communication. This thesis brings a unique perspective to using the aspect of human-centricity to observe the design behind written communication, specifically, Latin letterforms. It also explores the proposition that the human body inspired the several developmental stages of written communication and that those inspirations are reflected in the design of Latin letterforms.

The idea behind this research emerged from a very simple thought. During the second year of my bachelors in design degree at the Indus Valley School of Art and Architecture, a course on typography, where the professor introduced the anatomy of type, sparked a question in my mind. At first, it appeared as a very simple question, why is the counter space of the lowercase letter E called the eye? However, the existing answers to my questions were incomplete and dissatisfactory. Through further research, hints of other characteristics that indicated connections between the human body and the written communication were made, which this study presents in three parts. This study explores the possible answers to the research questions and discovers potential direction that may help towards the development of written communication.

In my knowledge and in my current design practice, there is no literary source that brings forward these ideas together as one body research. Based on my experience, I have made observations that may be subjective and not agreeable to every reader. Additionally, it is important to remember that the scope of this research is limited and it does not intend to include every step of development of written communication. However, it provides its readers with a new perspective, a wide range of information sources and ideas to take forward into their own directions.
Acknowledgements

This journey would have not been possible without the support of specific professors at Aalto University. I would like to thank both of my thesis supervisors, Professor Zachary Dodson, for encouraging to let the research flow in its natural direction, and Professor Rupesh Vyas, for enabling my research to meet its deadlines. I would also like to thank former head of department of Visual Communication Design, Saku Heinänen, and the rest of department's faculty of Aalto University for their belief in my abilities and providing me with a place to pursue my master's degree.

Additionally, the support of an individual outside of Aalto University made this journey easier. I would like to present my gratitude to the expert in the field of typography, professor and writer Paul Shaw, for joining this journey as an external advisor. Thank you for all of the guidance, for providing directions to literary sources and for bringing your expertise to my thesis.

Finally, the support of my family and friends, without whom, this experience in Finland would have been impossible. I would especially like to thank my parents for always being there in spirit, even when we were thousands of miles apart. Not to mention, my brothers, for challenging me to do better at every step.
Abstract

It is generally established that one of the most significant step in advancement of written communication was the invention of phonetic alphabet. Since then, design of the written communication, specifically Latin letterform, has not evolved much. Since the design of Latin letterform is universally established, its design and the inspirations behind its design are often not questioned. This thesis investigates the inspirations drawn from the human body to the various developmental stages of written communication and how those inspirations are evident throughout the development of Latin letterforms.

This study explores the research subject in three parts. The first part reviews possible hints of inspirations originating from the human body in visual form. The second part examines the links between the terms employed for human anatomical features and the development of nomenclature for Latin letterforms. The last part of this study explores the possibilities with which the design of the human body influenced the design of Latin letterforms.

After the exploring the aforementioned three parts, this study concludes that there are direct inspirations originating from the human body, which are evident in the various developmental stages of written communication and especially in Latin letterforms. The evidence is found in all three aspects, in visual form, in terminology, and in overall design of Latin letterforms. Additionally, this study establishes that the current design of written communication lacks human-centricity. The results of this study also present us with an approach that helps enable a wider range of human communicative capabilities, offering the opportunity and a unique perspective to help advance the design of Latin letterforms into a dynamic medium.
Introduction

Introduction to the topic

The advancement of communication has always held significance towards the advancement of mankind and civilizations. In one way, communication has evolved and shaped itself as a result of the evolution of human lives in various cultures, time periods, and origins. In its simplest form, the most important aspects of communication include speech and written script. In a general practice, one aspect of communication informs the other. Written communication, the visual representation of speech has its earliest origins in the form of marks, symbols, or pictures. All primitive societies had their own means of written communication, an early stage of actual writing, or a substitute. Writing is often considered the threshold of history, primarily because its invention enabled speech to be recorded in a visual form, resulting in the removal of the dependency upon oral tradition. Written communication is primarily informed by speech but there are several other aspects that have affected the written communication’s development in its early stages including aesthetics, functionality, and so on. Taking in the design of the ordinary products that surround us, one notices that the human body has inspired and informed various aspects of their design. Similar inspirations from the human body are observable in the evolution of written communication. This study explores whether the human body inspired various developmental stages of written communication that are visible in the design of the modern Latin letterforms.

The evolution of writing has advanced by leaps when comparing the earliest forms of simple communicative etchings to the fully developed scripts of today. It is commonly believed that the biggest step in the history of writing was the invention of phonetic alphabets, where an abstract shape was assigned a sound. The abstract shape alone is open to interpretation but when it is assigned a sound, it restricts the possible interpretations on the basis of its shape and draws focus to its sound. As a result of colonial empires, the usage of alphabetic script for written communication is prevalent worldwide, with notable exceptions in the Chinese and Japanese languages. Most written scripts employ twenty to thirty basic phonetic alphabets for written communication in established languages. The evolution of the European alphabet illustrates the possible influence and link of one alphabetic script
Figure 1 The chart representing the possible connections of one language with another.
to another (fig. 1). It is noticeable that Early Phoenician had an influence on Greek. In the following stages, Greek had an influence on Etruscan that went forward to inspire the Latin script.

Consequently, the Latin script progressed into the Modern European script. On the Etruscan ‘bucchero’ jug, 6th century BC (fig. 2), one observation is that the Etruscans obtained the alphabets of the Greeks and after slight modification, transferred it to the Romans. Several letterforms on the ‘bucchero’ jug resemble the Latin letterforms that the modern European script contains. Andrew Robinson, in his book The story of writing: Alphabets, Hieroglyphics, and Pictograms asserts that, “the Roman/Latin scripts were modified slightly in turn, on the way to becoming its modern English equivalent.” Scripts drew inspiration from each other but there are several other aspects of written communication that have drawn inspirations, in their development, from other sources.

Similar to what happened when designing the everyday object that surround us, it is possible that humans took inspirations from their own environments and their bodies in order to advance the written communication. Design is human-centric by nature, even when unintended, however, it is difficult to separate the urge of aesthetic exploration from the human-centric behavior. Even though, writing began as a means of recording information, it progressed into communication on a larger spectrum including stories, poems, plays, academic books, legal documents, and so on. Since the invention of phonetic alphabet, written communication has not has not seen further advancement. The current design of the Latin letterforms is so well embedded into our minds that it is challenging to take a critical look at them from a unique perspective. In order to take that needed critical look, this study is divided into three parts, which are explained in the research methodology.

In the course of this study, it is essential to establish terminologies so that the existing overlapping terms within the different fields concerning type design can be avoided. There is ambiguity in many studies between the Roman and Latin letterforms. This study will only be employing the term ‘Latin letterforms’ in order to avoid the confusion between the overlapping terminology of Roman and Latin alphabets. This research will consider all of the different types of Latin alphabets, the whole classification of type, which includes but is not limited to, scripts, black letter, serifs, san serifs, and display type. Even though the main focus of this study is on the Latin letterforms within the English language. It is important to include
the alphabetic scripts of other languages, since there may be overlaps and links between many scripts that will be beneficial for this research.

There were several reasons for this study’s focus on the Latin letterforms. Beside the English language, languages employing the Latin letterforms dominate the western world. Moreover, because of their common use, the Latin letterforms are available in countless variations including with varying weight, size, serif, sans serifs, and so on. Several Eastern countries employ the Latin letterform as a part of using English language in their official setting as well as personal lives. For instance, in India, English is the official language and Hindi is the mother tongue, however, in recent years, with technological advances and cultural development, a third millennial language has emerged known as ‘Hinglish’ that employs the Latin Letterform for Hindi words. An example of this is using the word ‘book’ in a complete Hindi sentence instead of its Hindi translation of ‘kitab’. Moreover, the evolution of the Latin letterforms and their history makes them a very rich subject. The numerous users of Latin letterforms also give this research an opportunity to have the most impact. All of these aspects make the Latin letterforms a companion to the developmental stages of writing as the central topics for this research.
Figure 2 The Etruscan ‘bucchero’ jug
Exploring Letterforms

Research methodology

Research questions
The main research question that this study aims to answer is, how the human body influenced various developmental stages of written communication and whether those inspirations are evident in the advancement of Latin letterforms? Since, the research question of this study deals with two very specific subjects including human body, and written communication. Exploration of the selected research subjects requires the examination to be broad yet contained, the main research question is divided into three following parts:

- The first part examines the inspirations drawn from the human body that are evident in visual form in several developmental stages of written communication, and in the modern Latin letterforms.

- The part second examines the indications showing that terminology employed for the anatomical parts of human body significantly inspired the terminology of the Latin letterforms.

- The third part of this study examines the signs suggesting that the design of the human body influenced the design of Latin letterforms.

Research type
In order to examine the subject matters in question successfully, the research type is of fundamental importance. Exploratory research is chosen as the most suitable research type for this study. The purpose of exploratory research is to discover the subjects that have little prior knowledge established regarding them. In this case, the written communication, Latin letterforms and human body are all well-established and researched subjects but there are almost no studies that bring these subjects together in one body of research to explore the links between them. Exploratory research helps this study to discover a probable well-defined problem regarding the subjects and may help in proposing a new approach, direction, or method to form the basis for further research.
Data collection methods

The research method for this study comprises of both, primary, and secondary research as the source of data collection. The primary data is gathered mainly using the observational method. Commonly, in an observational method the research subjects are observed with the help of participatory, or non-participatory observation. For this study, the selected method is non-participatory as there are no interactions taking place. Even though the observations in this research are based on researcher’s approach, the research is carried out by a practicing design professional with a formal education in visual communication design. Hence, bringing an individual perspective that is helpful for this exploratory research.

For the collection of secondary data, the study will review academic books, journals, articles, seminars, and interviews of the well-known names in the discipline of design, and typography. Employing the secondary data collection method, qualitative data will be gathered in order to discovery the answers to the research questions. Afterwards, the qualitative data will be observed applying the same approach as primary data by employing non-participatory observational method.

Collection of primary and secondary data is the most suited data collection method for this study as it deals with a wide range of disciplines and covers multiple time periods from the history of the written communication. It is challenging to find experts in those specific fields to attain primary data for all the different discourses that this study touches upon, which is why examining the secondary data is the optimal research method for this thesis. Moreover, the collection of secondary data enables this research to acquire a wider area of research that will aid in answering the research question effectively.

Data analysis

The primary and secondary data gathered for this study will be analyzed on the basis of several aspects. One of the essential methods for data analysis is the researcher’s observations, and reflections on gathered data. As mentioned earlier, research is performed by a practicing design professional with a formal design education background, which provides an individual perspective that is beneficial for exploratory research. It is essential to contain the thoughts based on
a certain discipline, therefore, the analysis of the gathered data is based on globally established principles and elements of design that include but are not limited to shape, color, form, symmetry, depth, and visual hierarchy. Lastly, another method for analysis of data includes comments made regarding the research subject by scholars, writers, and professionals from the design industry. The analysis of the gathered data might be not agreeable to every reader, as the visual forms are open to interpretations. However, the unbiased counter interpretations will be presented, and considered for this research.

Scope of research

This study encompasses various perspectives in order to answer the research question. The exploration will comprise of many different theories, languages, and disciplines. It elucidates upon thoughts from academic disciplines including but not limited to design, its principles and elements, art history, linguistics, geometry, kinesiology, sociology, human anatomy, typography, and psychology. While, the bracket of academic disciplines maybe extensive, the research question has a very specific focus, which will help contain the investigation. Even though the examples will be drawn from several languages but this investigation focuses on English language mainly. The research is divided into the following three parts, which are seen fit for the subject matters.

The first part of the research investigates the inspirations originating from the human body that are apparent in visual form in several developmental stages of written communication, and in modern Latin letterforms. This part of the research attempts to discover and observe the hints of inspiration found in visual form including the visual style, the shape, form, and so on. To acquire a deeper understanding, the study starts from the myths, legends, and stories regarding the history of written communication. Afterwards, the study focuses on two major theories on the history of written communication. The first theory that this study will examine is the pictographic theory, which is based on William Warburton’s study of Egyptian, Chinese, and Aztec manuscripts. The observational part of this theory will include the initial stages of written communication which are found in the form of graphic symbols such as, marks, symbols, picture writing, pictographs, and so on. The second theory states that clay tokens are the originating point of the written communication, the observational parts of this theory will comprise of several steps in the development of clay tokens including complex tokens, seals, and tablets to
name a few. The study will also include the several other developmental stages of Latin letterforms. Besides all the aspects aforementioned, the study will observe various time periods of the developmental stages to better explore the possibilities of inspirations drawn from the human body to the developmental stages of written communication.

Second part of the research will explore the influences behind the development of the nomenclature of Latin letterforms employed in English language, and the reasons why it may have acquired words form the human anatomy. Going beyond the shape of the Latin letterforms, this research takes into account the terminology employed in the field of typography. Looking at the terminology from an aerial view, it is apparent that the terminology of Latin letterform has borrowed terms from the anatomical parts of human body. It is known that professionals in the field of typography practice terms such as, spine of letter S, and eye of the letter E. These terms are noticeably acquired from the terminology employed for the human body but same terms are assigned to the parts of letters in the field of typography. However, little is known regarding the origin of these terms, and the reasons behind them. The study will explore the first known terminology assigned to Latin letterforms, and its progression using several academic secondary data collection sources. Moreover, the possible inspirations behind the terminology of Latin letterforms will also be investigated.

Third part of the research will explore the connections between the two subjects based on the overall design. Human body has held an important place in the evolution of the mankind. It holds its place in almost every discipline that we have today including literature, arts, religion, and culture to name a few. Besides its visual and aesthetic aspect, the connections between the human body and geometry are extremely intriguing. Several celebrated scholars and artists such as, Leonardo Di Vinci, have established relationship between the human body, and geometry. Moreover, several known names have explored the links between geometry, and Latin letterforms. However, there are very rare instances where the links between the human body and Latin letterforms were established using geometry, and design. Human body inspires and informs every design decision for almost every product that surrounds us. This same notion, when applied to the design of Letterforms may bring a new perspective or a direction for the advancement of letterforms. This study will establish possible links between the human body, geometry, and Latin letterforms. Along with the possible links, the idea of human-centricity of the design of
written communication, specifically, Latin letterforms will also be investigated.

Aims and objectives

This research aims to explore the possible inspirations drawn from the human body into several stages of written communication, and in Latin letterforms. There are many theories on the origin of the first alphabet, and its development. This research takes a human-centric approach and explores the notion that inspirations originating from human body in written communication may have informed the design of various scripts but this study focuses only on Latin letterforms. However, to investigate this notion, it is essential to explore the development of written communication in order to find the clear inspirations that may be origination from the human body in direct, or indirect manners.

After the inspirations are established, the study aims to examine the design of written communication and specifically, Latin letterforms to observe the human-centric aspect of its design. Currently, there is no study that brings human body, letterforms, and design together in one body of research. Human body inspires and informs every design decision for almost every product that surrounds us. This study applies the same notion to design of the Letterforms in order to explore an innovative direction, which might bring further human-centricity to help advance design of the letterforms. The main objective of this research is to examine the written communication from a human-centric perspective and possibly find a new direction that may from basis for the further research towards the advancement of written communication.

Strengths and weaknesses

This study, like every other study, comprises of various strong, and weak aspects. One of the strengths of this research lies in the way subjects have been brought together. This study brings together and draws relations between human body, designs, and letterforms, which have never been brought together in one body of research. Because this is an exploratory research, it provides a comprehensive range of discourses and observes the research question in three different parts to explore the research subjects in contained manner. Moreover, the research includes ample amount of academic sources from different times periods, which brings credibility to the observations, and the outcomes of the research. Additionally, the
research subjects are considered from a human-centric design approach, which bring the subjects into a new light.

Along with various strengths, this study encompasses several weaknesses. The research subjects because of their nature and the approach of this study can be examined carefully but the observations will be subjective, and possibly not agreeable to every reader. Another possible weakness comes from limited scope of this study to specific theories and time periods with in the developmental stages of written communication. While the limitation adds additional focus at the same time it makes this study less comprehensive. However, it is impossible to include all the known developmental stages of written communication into the scope of this study. Another possible weakness emerges from the number of theories, and credibility of those theories related to the subject matters but the research has focused on credible sources emerging from the established names in the design industry. Lastly, the deficiency of primary data collection is seen as another weakness but the scope of this study, time limitations, and the selected research type do not allow much opportunity for the primary data to be gathered for the various discussions that this study covers.

**Concerns and Limitations**

The course of this study brought forward various concerns and limitations that hindered the overall research process. One of the biggest limitations was the lack of comprehensive secondary data that consider the research subjects, and construct connections amongst them. There were sufficient volume of studies on the research subjects individually but there were rare instances of studies bringing all the research subject of this study together. While the focus of this study was on observing the developmental stages of writing and Latin letterforms exploring the examples relevant for the English language as the main focus. However, the lack of translated versions of the secondary data sources caused a major limitation during this research, making it extremely challenging to uncover examples that might be comparable to the ones observed in the English language.

The aforementioned limitations introduced a few concerns that may have affected this research. The lack of secondary data sources enabled the lack of examples that may have helped make this research relevant for other languages. However, this study has drawn limited examples from different languages to trigger a thought
process that may aid in applying the results of this research to other languages. Another concern during the course of this research was the limitation of time. The researcher of this study has provided a wide range of academic sources to support the arguments constructed in this research, however, the arguments were shortened based on the time limitations of this research.

**Expected outcomes**

The expected outcome for this research is to form foundations that may activate further research to explore a unique direction for the advancement of the design of Latin letterforms, and possibly its application to the scripts employed in other languages. It is commonly established that one of the biggest steps in the history of communication was the invention of phonetic alphabets, where an abstract shape was assigned a sound. Since then, no major advancements have transpired in the field of written communication. This study expects to explore inspirations and links between several developmental stages of written communication, and the human body to find examples of human-centric aspects in the design of written communication. Once the possible links and inspiration are established, this study will explore the current design of Latin letterforms to find a possible direction that may be further human-centric. The found direction may enable additional research, and also encourage the possible applications of the researched direction.
Literature review

Part 1 – Hints in the development of Latin letterforms

The legends and origins

“Because the use of symbols is a characteristic of human behavior, it is by definition as old as humankind itself. From the beginnings of humanity, symbols have encapsulated the knowledge, experience, and beliefs of all people. Humans, from the beginning, have also communicated by signs. Symbols and signs, therefore, are a major key to the understanding of cultures.”

Denise Schmandt-Besserat

An abstract symbol that we recognize as an alphabet is only a shape, in a three-dimensional setting, a form; it is a set of shapes that are universally recognized along with the sounds associated to them. There are many theories regarding the origin of an alphabet. Scholars have devoted their lives to be able to find the genesis of an alphabet. It is established that the early form of an alphabet reached the modern world through ancients Greeks. From then to now, the progression in the development of alphabet has given us many variations in different languages that we have today. One of the most common one is the Latin alphabet, which is used in several established languages all around the world. This part of the research paper will draw examples from various information sources to identify the inspirations drawn form human body apparent in visual form throughout the evolution of the Latin letterforms.

Until the eighteenth century, there were no indications on the origin of the first alphabet. Along with many theories on the subject, there are many researches with diverse perspectives regarding the need and function of an alphabet. Andrew Robinson in his book *The Story of Writing* mentions that the absence of evidence engendered myths to fill the gaps. In his books he mentions, “Children are often evoked as inventors of the alphabets because they do not have the preconceptions and investment in existing scripts that adults have.” One prospect in Robinson’s
book is that in Northern Syria, a talented child, uninterested in the task of learning cuneiforms took the inspiration from the Egyptian Hieroglyphs. The child created some new marks and assigned them sounds from his own language. *How The Alphabet Was Made* by Rudyard Kipling cites that the alphabets were created by a child name Taffimai, she designed shapes that she called ‘noise-pictures’. The child explains to her father that the letter O resembles her father’s open mouth when he says ah. According to Kipling’s perspective, Taffimai invented the letterforms.¹⁴ Even though Kipling has speculated about the origin of the alphabets but even in those speculations one can see the hint of inspiration for the visual form of the letter O is the simplified shape of a human mouth (fig. 3).

Donald Jackson in his book *The Story of Writing* mentions that until the eighteenth century, most believed that Gods and creatures were the inventors of writing. Later, the idea emerged that scripts had originated in the form of picture writing.¹⁵ The poem *Enmerkar and the Lord of Aratta* is claimed to be the first form of writing.¹⁶ The poem talks about Enmerkar known as the lord of Uruk-Kulaba sent a representative to request for valuable metals and stones to be able to reconstruct the home of Inanna goddess. In another Sumerian poem, *Inanna and Enki, the Transfer of the Arts of Civilization from Eridu to Brech*, there is a dialogue about the transferring ‘the Arts of Civilization’, written form of communication is regarded as one of the essentials of development by Enlci, the lord of wisdom.¹⁷

Stanley Mayer Burstein cites another instance; he cites Berossus’ *Babyloniaca* where it suggests that a creature from the sea, which was a hybrid between a fish and man, gifted knowledge to the Babylonian
Figure 3 Taffami’s drawings presented in the story.
regarding writing and language. Whereas, S. H. Hooke in *Babylonian and Assyrian Religion* comments that the lord of wisdom is mentioned as the source of secret knowledge including writing. In another occasion, texts drawn from Assyria cities Nabu, also knows as the son of Marduk, as the director of mankind towards arts, and writing. Whereas, in the bible, the law created for the mankind revealed God’s will with *Tables of the Law* “written by the finger of God.” While, in 1668, John Wilkins, an esteemed and prominent English scholar mentioned that Adam was responsible for the invention of Hebrew alphabet: “though not immediately after his creation, yet in process of time, upon his experience of their great necessity and usefulness.” All the aforementioned claims and theories have one aspect in common, they all represent the human desire to make up knowledge in order to fill the gap of the unknown. In this case, the unknown is the origin of the alphabet.

Another theory, which became quite prominent and is considered one of the most significant theories on the invention of writing, is the pictographic theory. The theory on the basis of William Warburton’s study of Egyptian, Chinese, and Aztec manuscripts claimed that every script had progressed from narrative drawings. To further elaborate his theory, he explained that only the pictures moved away slowly from literal images to a different level of abstract characters. In 1738, in London, the notion was presented in his book *Divine Legation of Moses.* His theory practically remained unchallenged for over two hundred years.

“In the nineteenth century, when archaeological expeditions reaped the first great harvests of cuneiform texts and brought them back to Europe, the cuneiform script was regarded as conforming to Warburton’s paradigm,” mentioned Denise Schmandt-Besserat, in her book *How Writing Came About.* George A. Barton, in 1913, while talking about the same theory in his book *The Origin and Development of Babylonian Writing* explains, “the investigator must proceed upon the hypothesis that Babylonian writing, like other primitive writing, originated in pictographs.” The theory was later altered to contain a development from ideographic to phonetic writing. Barton further wrote, “wherever the beginnings of writing could be traced, it took the form of picture writing, so that it seems safe to regard it as a working hypothesis, if not as a law, that all early systems of writing began in a series of pictographic ideographs, that syllabic values were developed from these and in some cases alphabetic values.”
From the pictographic theory to now, there were many views and researches on the first appearance of written communication and its progression into Latin Letterforms. Some of those views are going to be discussed later in this study. However, taking a look at the modern presented theories and research, there is a commonly recognized notion on the emerging place of written communication. Marvin A. Powell cities in his book *Three Problems in the History of Cuneiform Writing: Origins, Direction of Script, Literacy* that there is a general acceptance to the research which suggest that Mesopotamia, was the birth place of writing, in the fourth millennium B.C. Afterwards, it branched out from there to places including Egypt, Indus Valley and Elam. Another general acceptance on the genesis of writing is cited by Geoffrey Sampsons in his book *Writing Systems* that subsequently; in places including China and Mesoamerica, additional scripts progressed and developed. One script informed the other and the years of advancements in the writing resulted in the modern Latin letterforms that are used in the various established languages in western countries.

**Evolution and progression**

When one studies the history, the connections from one time period to another are often discovered. The same may have happened to the written communication, we may not have the evidence but there is a possibility that one writing system may have influenced another writing system. John DeFrancis mentions is his book that a full writing is “a system of graphic symbols that can be used to convey any and all thought.” In Andrew Robinson’s *The Story of writing, Alphabets, Hieroglyphics and Pictograms*, he illustrates the classification of writing system (fig. 4). The flowchart elucidates that the origin of writing started with Pictures, which progressed into ‘Pictograms’ and later ‘Proto-writing’. After ‘Rebus Symbols’, the first ‘Full Writing’ system emerged and in its later stages developed into ‘Syllabic’, ‘Consonantal’, and eventually ‘Alphabetic Systems’.

In *A Study of Writing*, I. J. Gelb has divided the development of writing into three main stages (fig. 5), ‘No Writing’, ‘Forerunners of Writing’, and ‘Full Writing’. He explains ‘No Writing’ as “we normally understand pictures – that is objects of art resulting from an artistic-aesthetic urge – do not fall under the category of writing.” He further adds that, “writing had its origin in simple pictures.” Gelb explains ‘Forerunners of Writing’ as “all the various devices by which man first attempted to convey his thoughts and feelings.” He coins the terms for these devices
Figure 4 Classification of writing systems.
'semasiography,' and 'meaning signification.' He mentions that, "as the word implies, this is the stage in which pictures can convey the general meaning intended by the writer. In this stage visible drawn forms – just like gesture language – can express meaning directly without an intervening linguistic form." He also explains the progression and probable influences between the different stages of development of writing. In an illustration, Gelb provides a broader view on the whole development (fig. 6). After establishing a general understanding of the development of the writing and its timeline, the study will bring forward individual time periods, in no specific order to study them further.

It is not evident if the Ice Age human could speak fully, we can see that they could draw to communicate or for an expression of a thought (fig. 7). Robinson mentions that it is “hard to believe that artists of such vitality and power were incapable of inventing a limited form of written communication." He calls this form of partial

---

<table>
<thead>
<tr>
<th>No Writing: Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forerunners of Writing: Semasiography</td>
</tr>
<tr>
<td>1. Descriptive-Representational Device</td>
</tr>
<tr>
<td>2. Identifying-Mnemonic Device</td>
</tr>
<tr>
<td>Full Writing: Phonography</td>
</tr>
<tr>
<td>1. Word-Syllabic: Sumerian (Akkadian)</td>
</tr>
<tr>
<td>2. Syllabic: Elamite</td>
</tr>
<tr>
<td>3. Alphabetic: Greek</td>
</tr>
</tbody>
</table>

---
Figure 6 Origin of the alphabet, and its timeline.
written communication ‘proto-writing.’ He further cites that “proto-writing long proceeded the emergence of full writing in Sumer in about 3300 BC, and it will always exist alongside of full writing.” The drawing of an engraved horse (fig. 7), found in the caves of the Southern France illustrates a series of ‘P’ engraved inside the figure of a horse. In connected cave, concealed in a small recess lies one horse that is surrounded marks that appear similar to the shape of letter P, which were evidently produced with variety of tools.

The pictography of the North Americans Indians is one of the commonly known from of the proto-writing. Robinson mentions, “The pictograms are for the most part comparatively crude marks and symbols engraved or painted on walls and rocks. The commonest kind is usually known as petroglyphs. But some Amerindian pictograms are more sophisticated.” Amerindian pictogram illustrates two fully-grown human figures along with two figures similar to children, in the background (fig. 8). The grown human figures have visual elements, which look very similar to a speech bubble and kites in the background. One important feature to notice in these pictographs is the sense of space that these people have, you can see the clear use of foreground, and background with a hint of perspective. According Robinson in The Story of Writing, this Amerindian pictograph is the letter written by a Cheyenne man. The letter was addressed to his son and mentioned that he is sending his son fifty three dollars which is represented by fifty-three circles that we earlier called speech bubbles.

Figure 7 Engraved horse with series of shapes that appear similar to letter P.
Figure 8 Letter by a Cheyenne man to his wife, and son.

Figure 9 The list of warriors.
Another example of the Amerindian pictogram is from 1883. The pictogram shows a group of warriors with red marks painted on their faces (fig. 9). The names of those warriors are indicated by the small visual drawn above their head for example the Iron-Hawk, Charging-Hawk, and Red-Crows. This pictogram gives us a sense of the methods that aided these people to communicate by using human figures as a central figure with the addition of other visual elements, not just the actions or stories but also nouns, in this instance, the name of warriors. It is also interesting to see that these people could connect human attributes like strength and power to various animals.

Moving forward to another development, tallies are known as one of the oldest types of proto-writing; they have been used to keep a count of an event or a belonging. Robinson mentions that according to Herodotus, King Darius left members of the Greek army to protect a bridge during his time against Scythians. Before his departure, King Darius gave the Greek army a thong with sixty knots and asked them to undo a knot each day. Once all the knots were undone, they should take the ships home. This way of keeping a tally through a systemic action may have given rise to mark making and further calendars. As illustrated (fig. 10), the marks made by the people from the Ice Age times demonstrate that they were made with various tools during different times. The possible explanation is that the bones signify the lunar notations. The notations kept a record of different phases of the moon and it was used as a calendar.
Another prominent development in the history of writing is the cuneiforms, described as wedged-shaped by Edward Clodd in *The Story of The Alphabet*. Cuneiforms were observed during the fifteenth century but did not have much part in the explanation of the pictographic theory since they were not very known in 1738. During the nineteenth century, archaeologists started bringing the cuneiforms to Europe, that's when the cuneiforms were considered supporting the Warburton's hypothesis, which mentioned, "all the scripts originally developed from narrative drawings". George A. Barton had formed a view that, "Babylonian writing, like other primitive writing, originated in pictographs." He further added that wherever the beginnings of writing could be traced, it took the form of picture writing, so that it seems safe to regard it as a working hypothesis, if not as a law, that all early systems of writing began in a series of pictographic ideographs, that syllabic values were developed from these and in some cases alphabetic values." Schmandt-Besserat counteracted that, "In fact, the idea that the cuneiform script started with picture writing was by no means a perfect fit.

To add further to the idea, William A. Mason explains, "We must admit, that even in the earliest and most archaic inscriptions discovered, it is not always easy to recognize the original objects." He further added, "Owing to the limitations of primitive culture, the inexperience of the scribes and the lack of artistic ability, each scribe drew the characters in his own crude, faulty way, often incorrectly; so that it is quite impossible always definitely to distinguish the character and identify it with the object intended." These words not matter how relevant; were not applied to the pictographic theory during that time and Babylonian scribes were accused for the inconsistency between the predetermined ideas and realities mentions Schmandt-Besserat.

At Uruk, new ideas were brought forward when hundreds archaic tablets were discovered during 1929-1930, and the archaic tablets challenged the idea of the pictographic theory. Scholar Adama Falkenstein mentioned that during the time when development of writing took place in Mesopotamia, the pictorial signs were rarely found. He further added that the true pictorial signs for example, "wild boar" was not just rare but had seldom use. Those that were truly pictorial, like the signs for "plow", "chariot", "sledge", or "wild boar" were not only few but of uncommon use, represented by a single occurrence on one tablet alone. The common signs were abstract, the sign for "metal" was a crescent with five lines, the "pictograph" for "sheep" was a circle with a cross. Schmandt-Besserat remarked that the Uruk
tablets seriously strained the pictographic theory by showing that when writing began in Mesopotamia pictographic signs were rarely used. Edward Chiera supported Falkenstein’s analyses with the pictographic theory. Schmandt-Besserat cites his argument that, “the Uruk texts represented an already evolved script and that a previous stage, consisting of true pictographs, probably had been written on a perishable material, such as wood, bark, papyrus, or parchment which had disintegrated in time and could never be recovered.”

During the twentieth century, sufficient information was gathered to challenge the pictographic theory seriously. Schmandt-Besserat cites that, “From Champollion in 1822 to Ventris in 1953, each great decipherment eroded the premise upon which the pictographic theory was built and determined that the early scripts all had phonetic features.” Later, anthropologist Andre Leroi-Gourhan shared his views in *Le Geste et la Parole*, he commented that, “the linguists who have studied the origin of writing have often conferred to pictographic systems a value which derives from literacy.” Schmandt-Besserat mentions that Leroi-Gourhan “noted that the only true pictographic scripts were recent phenomena; that most had emerged in groups which did not have writing prior to contacts with travelers or colonists from literate countries.” Leroi-Gourhan put forward that, “therefore it seems impossible to use Eksimo or Indian pictography in order to understand the ideography of preliterate societies.”

The researches have challenged the pictographic theory and now it is commonly established that writing originated from tokens, and cuneiforms originated from tokens. Schmandt-Besserat shares her view and mentions, “The immediate precursor of cuneiform writing was a system of tokens.”

In the book *How Writing Came About*, Denise Schmandt-Besserat describes clay tokens as “small clay objects of many shapes – cones, spheres, disks, cylinders etc.” The main purpose of clay token was to aid as counters in the primal times and their traces can be connected to the Neolithic period beginning around 8000 BC. The clay tokens went thorough progression with the progressing economy; in the beginning they helped keeping check of the products employed in farming, later the tokens expanded to keep order of the manufacturing good in the workshops. Schmandt-Besserat cities in her book that, “The development of tokens was tied to the rise of social structures, emerging with rank leadership and coming to a climax with state formation.” Hence, essentially writing developed as a result of the economic growth for barter system and as a way to facilitate trade.
Figure 11 Various types of clay tokens.
Moreover, reacting to the growth in bureaucracy, ways of storing clay tokens in archives were fashioned. One of the methods fashioned for storing clay tokens were clay envelopes, a hollow ball made out of clay, in which the tokens were arranged and sealed. A problem with the envelopes was that they concealed the tokens inside. Accountants ultimately solved the problem by marking the forms of the token on the envelopes before sealing them. The number of markings on the clay envelope illustrated the amount of goods. Schmandt-Besserat argues that, “the sub situation of signs for tokens was a first step toward writing.” She further asserts that, “fourth-millennium accountants soon realized that the tokens within the envelopes were made unnecessary by the presence of markings on the outer surface. As a result, tablets, solid clay balls bearing markings replaced the hollow envelopes filled with tokens. These markings became a system of their own, which developed to include not only impressed markings but also to further legible signs created with a pointed stylus. Both these kind of representations, which were derivative of tokens were “picture signs,” or “pictographs.” Schmandt-Besserat’s argument is based on the examination of a collection encompassing eight thousand tokens or counters originating from one hundred sixteen cities including Iran, Iraq, Turkey, and the Levant.

In Recherches sur le Neolithique de Syrie, Henri De Contenson mentions, “the manufacture of small objects modeled in clay and hardened with fire was a particularly important activity at Tell Aswad, especially in level ii, in the first half of the seventh millennium...these were...artifacts of geometric shapes, such as balls, disks, and small cups.” Cyril S. Smith in A Matter of Form states that the clay tokens consisted of very simple geometric shapes, which included but were not limited to cones, triangles, spheres, disks and cylinders (Fig. 11, and 12). Following the forth millennia, the
clay tokens progressed into a different stage around 3500 BC. During these times the new geometric shapes and forms of tokens emerged which were called “complex tokens” by Schmandt-Besserat in her book. She mentions that, “new naturalistic forms appeared in the shape of miniature tools, furniture, fruit, and humans.” According to her findings, 3500 BC. was the time period during when geometric shapes turned additionally complex and moved further towards naturalistic form including “miniature tools” (fig. 13), “furniture” (fig. 14), “fruit” (fig. 15) and “humans” in (fig. 16 and 17). Similar ideas are seen in other developmental areas of clay tokens such as clay envelope covered in seal impressions (fig. 18). Schmandt-Besserat has not mentioned whether there was a specific purpose for using impression that look like human body. However, it is probable that these seal impressions that appear similar to the human body were to indicate identity concerning the owner of the clay envelopes. One can notice that the idea of clay tokens progressed from the basic geometric form similar to the marks and picture drawings made by the cavemen and moved towards the idea of the representation of various organic form including the human body.

Moving further into the history of clay tokens, one finds many similar examples that point towards the direction that clay token may also have drawn inspiration form the human body. For instance, this clay tablet demonstrates four circular marks impressed onto it along with the four lines going from thick to thin (fig. 19). One can argue that it is a basic geometric shape or it appears similar to the modern version of the Latin lowercase letter I. These marks also profoundly resemble to the contemporary icons that are practiced in wayfinding design (fig. 20). The poster Symbol Signs
Figure 14 Bed.

Figure 15 Pomegranate.

Figure 16 Human Head.

Figure 17 Human leg.
Figure 18 Clay envelope covered in seal impressions

Figure 19 Impressed clay tablet.
Figure 20 Clay token in basic geometric forms.
Figure 21 Impressed tablet.

Figure 22 A clay tablet representing different visual style.
demonstrates various contemporary icons, designed in 1974 by the designers Roger Cook and Don Shanosky. Meggs comments on the poster and says that, “these signs combined overall harmony with a visual consistency of line, shape, weight, and form. This effort represented an important first step toward the goal of unified and effective graphic communications transcending cultural, and language barriers in a shrinking world.”

The tablet mentioned earlier is not the only tablet that demonstrates a stylized representation of the human body. In another clay tablet, one can observe a similar idea serviced, which is further comparable to the icons that we employ today (fig. 21). Furthermore, we see this idea of the human representation in clay tablets, and envelops in diverse visual styles. For instance, one can notice the clear practice of the human body representation impressed onto the tablet (fig. 22). The three clear human figures impressed on the clay appear to be interacting in a sitting positing. Unlike the other tablets discussed previously, this tablet retains a distinctive visual style; it includes additional details, organic shapes and nominal abstraction compared to the other tablets.

Around 3100 BCE, Sumerian discoveries including seal, brick design, and the basics of writing had reached Egypt. Edward Clodd in *The Story of The Alphabet* states that about five thousands years BC, Egyptians had already fashioned alphabetic signs. However, their development did not reach to the point of individual usage and one was the reasons for that was the “conservative instincts of the race which, fostering veneration for the old.” He cites professor Whitney and explains that, “it is like a language which has never forgotten the derivations of its words, or corrupted their etymological form, however much it may have altered its meaning.” John Baines comments on Egyptian hieroglyphs that, “early cursive and hieroglyphic writing was a limited instrument. Continuous language was not recorded…writing was adequate for some administrative purposes but not for encoding discourse or for any more than a few abstractions.”

Continuing the same trail of thought, English Egyptologist and an inventor of systematic methodology in the discipline of archaeology, Flinders Petrie presented that the decision of not advancing to the nominal stylistic visual communication was rewarded for “having the most beautiful writing in the world.”

Continuing the same trail of thought, English Egyptologist and an inventor of systematic methodology in the discipline of archaeology, Flinders Petrie asserts that, “the treatment of everything was essentially decorative.” He further adds
Figure 23 First known Hieroglyph, dated about 3100 BCE.

Figure 24 Rebus principle.
that, “the love of form and drawing being in Egypt a greater force than amongst any other ancient people. Babylon and China, from want of sufficient artistic taste, allowed their pictorial writing to sink into a mere string of debased and conventional forms.”

Contradicting the Babylon and China, Egyptians retained the artistic elements in their writing system until the end. It is commonly known that the early Egyptians gave beauty and aesthetics a lot of importance that importance for aesthetics is also reflected in their writing system.

The first known Hieroglyph is dated about 3100 BCE (fig. 23). In the first glance, there are clear human figures that appear to be in action. Explaining the hieroglyphs, Meggs comments that, “Hieroglyphics consisted of pictograms that depicted objects or beings. These were combined to designate actual ideas, phonograms denoting sounds, and determinatives identifying categories.” After confrontation with the difficulty in expressing complete ideas in visual form, they formulated a rebus that employed images for sounds, which enabled them to express their ideas better. According to this principle, “Words and syllables are represented by pictures of objects and by symbols whose names are similar to the word or syllable to be communicated. These hieroglyphs mean bee, leaf, sea, and sun.” The rebus principle practiced in Egyptian hieroglyphs is demonstrates their skills and the understating of their aesthetics (fig. 24).

*Egyptian Dictionary* and *Egyptian Grammar* written by Champollion
brought the hieroglyphs in new light. Champollion’s understating and conclusions on hieroglyphics helped many other Egyptologists to resolve the Egyptian history embedded in hieroglyphs. The illustration (fig. 25) displays the letters that are positioned next to every hieroglyphic in the cartouches of Ptolemy and Cleopatra representing the probable phonetic sounds interpreted by Champollion. Along with other objects and animals, there is a visual of a human hand in the set of hieroglyphs.

In The Story of Writing, Andrew Robinson mentions that there are about twenty-four uniconsonantal signs in the hieroglyphic script. He asserts that, “Egyptians had an alphabet nearly 5000 years ago, why did they need all the other signs in the hieroglyphic script? Why did they choose to make their writing system more complicated than it needed to be? There is no clear answer.” Some scholars believe that the elite from ancient Egypt wanted to keep the knowledge of reading and writing exclusive; while other scholars are convinced that their writing system may seem challenging for us to understand but might not have been for the ancient...
Robinson presents a set of hieroglyphic alphabet (fig. 26) that seems to depict the concrete words in a visual form. The stylized drawings of these hieroglyphic alphabets are presenting a number of animate and inanimate objects. The Egyptian hieroglyphic alphabet, similar to the other writing systems mentioned earlier, includes the visual representation of several anatomical parts of the human body, for instance, leg, mouth, hand, and arm. Furthermore, hieroglyphic words presented by Robinson appear to visually depict not just the human body parts but full human bodies (fig. 27). It is also evident that the human body is presented in different genders, when there is a word “lady, mistress,” the representation of that word visually appears as a female. Whereas, when there are “brother,” or “lord,” the representation appear to be portraying a male figure.

Shedding light to the same idea of presentation of human body in ancient Egyptian times, John Baines in *Visual and Written Culture in Ancient Egypt* comments that, “a vital feature of Egyptian representation is its use of the human figure as the organizing principle of scale and composition.” While explaining the rules on proportions, He further adds that, “Its definitive form is the ‘canon of proportion,’ a set of rules for the ideal and proper proportioning of the human figure which can be extended to the design of whole compositions.” While he is elaborating about representation of the human body in ancient Egyptian culture and not just writing, it would not be incorrect to assume some of these representations.
might have influenced the ancient Egyptian writing system.

The clues of the possible influences are visible in the occasions discussed earlier on the hieroglyphic alphabet and hieroglyphic words. Baines mentions that, “this central significance of the human figure is a powerful cultural statement, which has been variously interpreted.” 120 He elaborates further and states, “the principal meaning of the human figure is, however, probably not humanity in general, but the ideal representative or protagonist of ‘human’ action—the king—as well as the gods, whose only ‘direct’ iconography is human.”121 Through out the history the representation of human body had and still is given ample attention. As observed, the human body held a prime focus in ancient Egyptian times.

Ancient Egypt evidently signifies the primary stages of Western world today.122 Lance Hidy writes that, “our cultural debt to the idolatry of pagan Egypt was largely expunged from history by Christian revisionists.”123 Greeks gained sufficient knowledge from the Egyptians; a lot of their creations are still present in our modern world. Meggs gives an examples and states, “our use of visual symbols originated with the Egyptians; from them we inherited the zodiac, the scales of justice, and the use of animals to represent concepts, cities, and people.”124

Establishment and comparison of the Latin letterforms

The development of Greek civilization brought the advancement of numerous achievements of the modern world. Along with all the other advancements, alphabets were not forgotten. Meggs explains that, “the Phoenician alphabet was adopted by the ancient Greeks and spread through their city-states around 1000 BCE.” The first known writings are from about eight century BCE, however, the Greek alphabets that is often considered main driver of the evolution of graphic communication, might have advanced before that time.125 The Greeks acquired the Phoenician and later altered five consonants into vowels.126

Looking at tradition, history and mythology, the transportation of the alphabets from Phoenicians to Greek point in the direction of Cadmus of Miletus of which the date are unknown.127 Meggs comments in his book that, “Cadmus invented history, created prose, and designed some of the letters of the Greek alphabet. These alleged accomplishments raise the possibility that Cadmus may have brought the alphabet to Greece.”128 According to The Story of Writing by Andrew Robinson, “there was more
than one alphabet in ancient Greece. The alphabetic signs of classical Greece, which are still in use in Greece today, are known as Ionian Alphabet.”

Most countries are familiar with the Latin alphabets because it is the closest to the modern European alphabet, which are included in the official scripts of many different languages. In *Megg's History of Graphic Design*, Meggs explains a brief history of Latin alphabet and mentions that, “the Latin alphabet came to the Romans from Greece by way of the ancient Etruscans.” The Latin alphabets consisted of twenty-one letters including A, B, C, D, E, F, G, H, I, K, L, M, N, O, P, Q, R, S, T, V, and X. He further continues explaining that during the first century BCE, “Greek letters Y and Z were added to the end of the Latin alphabet because the Romans were appropriating Greek words containing these sounds.” During the middle ages three additional letters became a part of the alphabets to attain twenty-six letters that are a part of the modern English alphabets. The letter J is an extension of the letter I, letter I was “lengthened in fourteenth-century manuscripts to indicate use with consonant force, particularly as the first letter of some words, Both U and W are variants of V, which was used for two different sounds in medieval England.” During twentieth century, “U was designed to represent the soft vowel sound in contrast to the harder consonant sound of V. The letter W began as a ligature, which is a joining of two letters. In twelfth-century England two V letterforms were joined into VV to represent “double U.”

As mentioned earlier, “the alphabetic link between the Greeks and the Romans was, as we have seen, the Etruscans.” However, Meggs presents a chart (fig. 28) that illustrates the visual similarities between Cretan pictographs, Phoenicians, Early Greek, Classical Greek, Latin and Modern English. To explain the charts he asserts, “the hundreds of signs and symbols required by cuneiform and hieroglyphics were eventually replaced by twenty or thirty easily learned elementary signs.” He states the contradictory theories and mentions that “often conflicting theories have been advanced about the origins of the alphabet; suggested sources include cuneiform, hieroglyphs, prehistoric geometric signs, and early Cretan pictographs.” Continuing the same line of thought on conflicting theories, it was earlier discussed that according to Schmandt-Besserat’s argument in *How Writing Came About*, it was presented that writing was established from a set of counting devices, tokens.

In Schmandt-Besserat’s work discussed earlier, it was established by the given examples that the human body had influenced the tokens. In the chart (fig. 28), the influence of human body in the writing system of Cretan pictographs can be seen visually. The early
name and probable meanings, for instance, the word “Ayin” may translate to “eye” in Cretan pictographs based on the given chart; it visually represents the human eye in a vertical position. In the later stages, the eye was stylistically simplified and appears to have transformed into the letter O of the modern English alphabet.

In *The Story of Writing*, Andrew Robinson presented a similar chart but it does not include the Cretan pictographs (fig. 29). The chart starts from Phoenicians and shows the stages of progression into the Latin alphabet. In this illustration, it is evident that the Phoenicians became further stylistically simplified and progressed into the modern set of alphabet that we have today. Edward Clodd in *Story of Alphabet* provides a comparison, which brings the Greek and Latin alphabet into the light of Egyptian, and Hebrew writing system (fig. 30). This illustrative comparison shows the progression, similarities and dissimilarities between those writing systems but it is also evident that there are some similarities between the Cretan pictographs and Egyptian writing system, for instance; observing (fig. 30) and (fig. 28) closely, the visual representation of words including “Mouth” can be comprehended as almost identical.

Whereas, another table presented by Clodd illustrates the “Genealogy of the English Alphabet.” Clodd cites table borrowed from Canon Taylor’s History of the Alphabet and asserts that, “the order of the letters (an unexplained problem in the history of the alphabet) approximates to that of the Phoenicians, and their names are based on the same principle as that of the Latin. Running our eye down the table we note that our alphabet provides for certain phonetic variations by turning the Latin I into I and J, and VV or UV into double U = W.”

Several researchers and scholars have presented their comparisons of different writing systems throughout the development of the written communication. Many of those comparisons, as shown in different charts included the Greek, and Latin alphabet. I.J. Gelb in *Study of Writing* mentions that, “the development of full Greek alphabet, expressing single sounds of language by means of consonant and vowel signs, is the last important step in the history of writing. From the Greek period up to present, nothing new has happened...” He further comments while comparing the similarity of our modern writing system with Greek’s and states that, “we write consonants and vowels in the same way as the Greeks did.” In our present alphabetic writing system, we use Latin alphabet for many languages because “even in its modern form, our writing differs little from the Latin writing of more than two thousand years ago.”

Even after several ancient and contemporary theories provided by the scholars on
Figure 28 Comparison on of Cretan Pictographs to other writing systems.
<table>
<thead>
<tr>
<th>Phoenician</th>
<th>Modern name</th>
<th>Greek name</th>
<th>Latin name</th>
</tr>
</thead>
<tbody>
<tr>
<td>'aleph</td>
<td>a</td>
<td>alpha</td>
<td>A</td>
</tr>
<tr>
<td>beth</td>
<td>b</td>
<td>beta</td>
<td>B</td>
</tr>
<tr>
<td>gimel</td>
<td>g</td>
<td>gamma</td>
<td>G</td>
</tr>
<tr>
<td>daleth</td>
<td>d</td>
<td>delta</td>
<td>D</td>
</tr>
<tr>
<td>he</td>
<td>h</td>
<td>epsilon</td>
<td>E</td>
</tr>
<tr>
<td>waw</td>
<td>w</td>
<td>digamma</td>
<td>F</td>
</tr>
<tr>
<td>zayin</td>
<td>z</td>
<td>zeta</td>
<td>H</td>
</tr>
<tr>
<td>beth</td>
<td>h</td>
<td>eta</td>
<td>I</td>
</tr>
<tr>
<td>teth</td>
<td>t</td>
<td>theta</td>
<td>J</td>
</tr>
<tr>
<td>yod</td>
<td>y</td>
<td>iota</td>
<td>K</td>
</tr>
<tr>
<td>kaph</td>
<td>k</td>
<td>kappa</td>
<td>L</td>
</tr>
<tr>
<td>lamed</td>
<td>l</td>
<td>lambda</td>
<td>M</td>
</tr>
<tr>
<td>mem</td>
<td>m</td>
<td>mu</td>
<td>N</td>
</tr>
<tr>
<td>nun</td>
<td>n</td>
<td>nu</td>
<td>O</td>
</tr>
<tr>
<td>samek</td>
<td>s</td>
<td>xi</td>
<td>P</td>
</tr>
<tr>
<td>ayin</td>
<td>s</td>
<td>omicron</td>
<td>Q</td>
</tr>
<tr>
<td>pe</td>
<td>p</td>
<td>pi</td>
<td>R</td>
</tr>
<tr>
<td>sade</td>
<td>s</td>
<td>saw</td>
<td>S</td>
</tr>
<tr>
<td>qoph</td>
<td>o</td>
<td>qoppa</td>
<td>T</td>
</tr>
<tr>
<td>reš</td>
<td>r</td>
<td>rho</td>
<td>U</td>
</tr>
<tr>
<td>šin</td>
<td>sh/s</td>
<td>sigma</td>
<td>V</td>
</tr>
<tr>
<td>taw</td>
<td>t</td>
<td>tau</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>upsilon</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>chi</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>omega</td>
<td>Z</td>
</tr>
</tbody>
</table>

**Figure 29** Developments from Phoenicians to Classical Latin.
<table>
<thead>
<tr>
<th>Egyptian</th>
<th>Hieroglyphic</th>
<th>Greek</th>
<th>Latin</th>
<th>Hebrew</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagle</td>
<td>☥</td>
<td>ΑΑΑαα</td>
<td>ΑΑααα</td>
<td>ננ</td>
</tr>
<tr>
<td>Crane</td>
<td>☢</td>
<td>ΒΒΒββ</td>
<td>ΒΒβββ</td>
<td>בב</td>
</tr>
<tr>
<td>Throne</td>
<td>☤</td>
<td>ΖΖΖζζ</td>
<td>Ζζζζζ</td>
<td>גג</td>
</tr>
<tr>
<td>Hand</td>
<td>☦</td>
<td>ΑΑΑδδ</td>
<td>ΑΑδδδ</td>
<td>דד</td>
</tr>
<tr>
<td>Mæander</td>
<td>☧</td>
<td>ΕΕΕεε</td>
<td>ΕΕΕεε</td>
<td>ממ</td>
</tr>
<tr>
<td>Cerastes</td>
<td>☩</td>
<td>ΥΥΥυυ</td>
<td>Υυυυυ</td>
<td>ננ</td>
</tr>
<tr>
<td>Duck</td>
<td>☩</td>
<td>ΙΙΙζζζ</td>
<td>ΙΙΙζζζ</td>
<td>ננ</td>
</tr>
<tr>
<td>Sieve</td>
<td>☩</td>
<td>ΗΗΗηη</td>
<td>ΗΗΗηη</td>
<td>ממ</td>
</tr>
<tr>
<td>Tongs</td>
<td>☩</td>
<td>ΘΘΘθθ</td>
<td>ΘΘΘθθ</td>
<td>ננ</td>
</tr>
<tr>
<td>Parallels</td>
<td>☩</td>
<td>ΙΙΙιιι</td>
<td>ΙΙΙιιι</td>
<td>ננ</td>
</tr>
<tr>
<td>Bowl</td>
<td>☩</td>
<td>ΑΚΑΚΚ</td>
<td>ΑΚΑΚΚ</td>
<td>ממ</td>
</tr>
<tr>
<td>Lioness</td>
<td>☩</td>
<td>ΛΛΛλλ</td>
<td>ΛΛΛλλ</td>
<td>ממ</td>
</tr>
<tr>
<td>Owl</td>
<td>☩</td>
<td>מממממ</td>
<td>מממממ</td>
<td>ממ</td>
</tr>
<tr>
<td>Water</td>
<td>☩</td>
<td>ΝΝΝננ</td>
<td>ΝΝΝננ</td>
<td>ממ</td>
</tr>
<tr>
<td>Chair-back</td>
<td>⬂</td>
<td>ṭṭṭḥḥ</td>
<td>ṭṭṭḥḥ</td>
<td>ממ</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shutter</td>
<td>☩</td>
<td>ΠΠΠΠ</td>
<td>ΠΠΠΠ</td>
<td>ממ</td>
</tr>
<tr>
<td>Snake</td>
<td>☩</td>
<td>ΜΜΜΜ</td>
<td>ΜΜΜΜ</td>
<td>ממ</td>
</tr>
<tr>
<td>Angle</td>
<td>☩</td>
<td>ϑϑϑϑϑ</td>
<td>ϑϑϑϑϑ</td>
<td>ממ</td>
</tr>
<tr>
<td>Mouth</td>
<td>☩</td>
<td>ΡΡΡΡΡ</td>
<td>ΡΡΡΡΡ</td>
<td>ממ</td>
</tr>
<tr>
<td>Inundated Garden</td>
<td>☩</td>
<td>גג</td>
<td>גג</td>
<td>ממ</td>
</tr>
<tr>
<td>Lasso</td>
<td>☩</td>
<td>ΤΤΤΤΤ</td>
<td>ΤΤΤΤΤ</td>
<td>ממ</td>
</tr>
</tbody>
</table>

**Figure 30** Greek, and Latin in the light of Egyptian writing system.
Figure 31 Genealogy of the English alphabet.
the development of writing, various time periods and multiple stages concerning those developments are still open to interpretations. However, two of the most widely acknowledged theories are the pictographic theory and the current acceptance that the clay tokens were the origin of writing. This part of the study brought forward various instances concerning the myths, and, the legends, furthermore, the scholarly theories including the pictographic theory, the notion that the alphabetic writing developed from the Cretan pictographs, and the recognition that clay tokens are the origin of writing. In most of the cases, the visual representation of a human body and its anatomy has been visually present in various time periods as discussed but the reasoning behind the representation of the human body is not always explained. After the looking at the different stages of development of writing, specifically the Latin letterforms, the premise will study the possible clues that maybe found in the from of terminology and nomenclature to continue the study on the research matter of the thesis.
Part 2 – Hints in the nomenclature and terminology of Latin letterforms

Development of nomenclature and terminology

Assigning terminology or a name to an animate or an inanimate object is a common method to make communication easier. Generally, the humans assign terms or sounds to a certain object, shape or a collection of abstract shapes as soon as they realize that something is unnamed. The distinguished typographer, Fernand Baudin, in *How Typography Works* on the subject of naming things mentions, “Novices are mistaken when they suppose there should be a ‘technical term’ for every product of their enthusiasm & ignorance.” When a baby is born, the family tries to assign baby a name as soon as possible. Similarly, we name our pets as soon as a pet joins the family, and the kids name their toys. When something is assigned a terminology or a name, it aids communication. In this case we are going to focus on terminology or the nomenclature within the discipline of typography but we may also take a look at examples from outside of the discipline of typography. This part of the research will explore the existing literature regarding the English terminology, and nomenclature of the Latin letterforms.

Every discipline comprises of vocabulary, which brings all the professionals of a certain practice to common understanding as that vocabulary facilities their communication. The field of design and typography is no exception. Though the terminologies within the field of design have varied, the understanding of those have generally remained the same but it does not completely apply to the filed of typography. When one looks at a book or researches online, there are numerous variations found in the terminologies on the anatomy of typography. There are generally agreed indications on the inspirations behind the terminologies that have been assigned to the different parts of the letters. To investigate the origin and the inspirations behind the English terminologies employed in the field of typography; the study is going to take a closer look at the history of its first appearance, and its progression.

Looking back, in search of the first establishment of the English terminology assigned to the parts of letterforms Joseph Moxon takes the lead. According to the writer and professor Paul Shaw in his blog post *The Nomenclature of Letter Forms: A Brief Review of the Literature*, Philip Gaskell, a bibliographer mentions Joseph Moxon as the first individual to assign terms to the different parts of letterforms in 1683 in his book
In his book Moxon outlined nine terms that were linking to the particular terminologies relating to the “Face of type” in a chapter regarding punch cutting. The terms that he mentioned in his book include, “The Topping,” “The Footing,” “The Bottom-Footing,” “The Stem,” “Fat-Stroaks,” “Lean Stroaks,” “Beak of Letters,” “Tails of Letters,” and “Swash Letters.” Moxen did not provide any visual support as none of these were presented in an illustrated form but he does explain topping as “the straight fine Stroak or Stroaks that lie in the Top-Line of Ascending Letters...” Footing as “the straight fine Stroak or Stroaks that lie in the Foot-Line of Letters, either Ascending or Descending,” and the beak as “the fine Strok or Touch that stands on the Left Hand of the Stem.”

Looking further into the English terminologies assigned to the parts letterforms, the first establishment of the illustrated version comes from Joseph Thorp. Philip Gaskell in A Nomenclature for Letter-Forms of Roman Type mentions Joseph Thorp, author of Towards a Nomenclature for Letter Forms and printing consultant, as the first individual to provide the illustrated parts of the letterforms (fig. 32).
Gaskell criticizes Thorp’s work by saying that, “Thorp’s paper, though it deals with the description of serifs, terminals, etc., in great detail, omits to define some important terms (e.g. stroke, tail) while including others which may be dispensed with (e.g. loop, spine).” On Gaskell critique regarding Thorp’s work, Shaw comments in his blog post that, “typographers today would disagree with Gaskell’s view of what is and what is not important. On the other hand, they would agree with him that Thorp’s illustrations, although pioneering, fail to be comprehensive.”

Gaskell further mentions that, “there is today a generally accepted, though until now not fully codified, system of nomenclature for the letter-forms of roman type used in the English-speaking countries.” On the contrary, Shaw emphasizes that, “I don’t know what he was talking about…but as far as I can tell the terminology is sketchy. Many of the terms are descriptive of the parts of metal type (face, nick, beard, bevel, etc.) and those that have to do with the visual aspects of letterforms are rudimentary (serif, ascender, descender, counter, etc.)” Additionally, Shaw mentions that the generally accepted British standards in 1974 must have been based on oral traditions. He further asserts that three celebrated books including, the revised edition of An Introduction to Typography by Oliver Simon, Typography by Aaron Burns, Typographie: Ein Gestaltungslehrbuch by Emil Ruder, Design with Type by Carl Dair, have not included any information on the subject of terminologies of letterforms. He comments that it is evident that naming the parts of letterforms was not a seen as an important matter by the typographer in the 1960s. Furthermore, Shaw cites Basic Typography, written by John R. Biggs in 1960s, as one of the books that includes certain terminology. The book comprises of one page regarding the “names of the parts of letters,” where Biggs presents letters similar to those of Thorp’s hand drawn letters. Shaw comments on Biggs work by saying, “although Biggs mixes serif and sans serif characters, his terms are deficient and even confusing. Sheared terminal is included but not lobe terminal or ball terminal; and counter and bowl are indicated to be one and the same thing.” Former to this, Thorp’s work had been acquired and adapted by many writers. Some of the examples of those works include Printing Types: And How to Use Them written by Stanley C. Hlasta in 1950, and Types of Typefaces and How to Recognize Them by J. Ben Lieberman in 1967. Thorp’s work has continued to inspire and guide the contemporary designers of today; The Nomenclature and Fundamental Structures of Letter Forms by Sarah Pittenger is one example.
Exploring Letterforms

Resuming the discussion on the level of detail used in nomenclature of letterforms from earlier, Gaskell mentioned in his work in 1974 that, “the discussion of typefaces requires a system of nomenclature for the elements of the letter-forms so that individual parts of printing types can be referred to.” Shaw observes that in the first browse, Gaskell’s works appears further comprehensive than Thorp’s. Though, when observed carefully, his work surfaces as lacking further details compared to the work of Thorp. Shaw supports Gaskell’s and asserts, “Gaskell illustrates the parts of every capital and lowercase letter in the alphabet (e.g. A has left diagonal, right diagonal, bar, terminal...he misses some terms (e.g. he has bulbous terminal but no lobe or ball terminal).” Even though there is marginal difference in development of the work, his work is a reference employed regularly by the bibliographers and printing historians.

Looking at professional typographers, Shaw criticizes that they “did not do much better than Gaskell in the 1970s.” He states the instances including *Typography: Design and Practice* written in 1978 by John Lewis, and *Type* written in 1973 by David Gates, both have no mention of the terminology or nomenclature of the letterforms. He opens up the discussion regarding the lack of nomenclature of typography by giving further examples from his personal book collection from Germany including books including *Schrift und Schreiben* written in 1971 by Hildegard Korger, *Geschichte der modernen Typographie* written in 1981 by Herbert Lechner, *Typographie: Herkunft, Aufbau, Anwendung* written in 1989 by Philipp Luiddl, and *Grundlagen der Typografie* written in 1990 by Walter Bergner. All of those have not mentioned the subject regarding the terminology of the Latin letterforms.

In 1980, James Craig wrote a revised edition of his book *Designing with Type: A Basic Course in Typography*, comprises of a minor theme on terminology. The information regarding the terminology in his book is limited to x-height, counter, ascender, descender and serif. Ruari McLean wrote *The Thames and Hudson Manual of Typography* in 1980, which includes material regarding letter parts, measurement, and styles of different serifs. In 1985, Rob Carter was noticed demonstrating the terms by using more than one typeface, although, the terms were not abundant. Another instance with a similar case is a book by Martin Solomon called *The Art of Typography: An Introduction to Typo-icon-ography*. This book includes a small chapter called “Typographic Terminology” which contains an illustration on “Anatomy of Type.”
According to Paul Shaw, Ed Benguiat during his work at Photo-Lettering Inc. created quite a comprehensive poster that illustrated several parts of letterforms (Fig. 33). He mentions that, “All of the letters, which represent a welter of styles, have been drawn by Benguiat in outline. The chart is the first truly detailed elucidation of letterform terminology that I am aware of. I assume that it is based not only on Benguiat’s long experience as a hand letterer and type designer but also on the accumulated knowledge of the staff at Photo-Lettering, Inc.” Shaw believes that the poster have not had the chance to influence as much as it could have because of the lack of its visibility in the design world.

The first detailed version of nomenclature of letterform becomes visible in a book by Doyald Young in 1993. The book is called Logotypes & Letterforms: Hand lettered Logotypes and Typographic Considerations, it consists a section “Parts of letter” that is illustrated with numerous details (Fig.34). Shaw comments on Young’s work that, “some of his terms are unusual: e.g. branch for what many call the arch of an h, n or m; or diagonal stem as an alternative description for the leg of R. As with all of the other terminology charts discussed so far, his vocabulary—with the exception of pothook to describe the entry and exit strokes of an italic n—is limited to seriffed roman letters.” In 1999, Young revisited the “Parts of a letter” and created a new, further elaborate version of it. He presents that version spread out on two pages in his book named In Fonts & Logos: Font Analysis, Logotype Design, Typography, Type Comparison, and History.

During the time when typography was still being experimented with for the digital setting, Paul Luna wrote a book Understanding Type for Desktop Publishing in 1992. This was one of the first times when literature regarding typography delved into the design for desktop. Luna’s book consists of “How Do Typefaces Differ” that represents some of the terminology for typography but covers that area less than the work of Thorp. Looking further for the prominent literature covering the English terminologies for Latin Letterforms, Ellen Lupton’s book Thinking with Type: A Critical Guide for Designers brings forward some information on the subject. This book became quite popular amongst the young designers, Lupton covers the terminologies scarcely with several letterforms completely missing from the illustrated anatomical parts. Shaw comments on Lupton’s work by saying that, “It covers less than Thorp did seventy years before.” Adding to that list, another book that became quite popular amongst designers and typographers is The Elements of Typographic Style by Robert Bringhurst. The book was translated in
**Figure 33** Typographic poster illustrating parts of letterforms created by Ed Benguiat (c. 1981).
Literature Review
The Parts of a Letter

Note—Depending on the source, the usage may vary for terms given here, which are the ones used in this book. (See in ITC Baskerville, except where noted.)
Figure 34 The parts of letter by Doyald Young presented in his book *Logotypes & Letterforms: Hand lettered Logotypes and Typographic Considerations*, (c. 1993).
**Figure 35** Parts of letterforms presented in *Anatomy of Type* by Stephen Coles, (c. 2012).
different languages but has no terminology for the typography. 185 Whereas, Poul Sogren includes very limited information regarding the terminology in his book Skrift og Skriftvalg. 186 “Analysis of characters and measurements” in At the Back of 20th Century Type by Lewis Blackwell touches a bit upon the topic of nomenclature of typography. 187 Few more examples of limited explanation on the terminologies of typography include The Complete Manual of Typography: A Guide to Setting Perfect Type by James Felici, where he covers terms only that seem important to him, 188 Type and Typography by Phil Baines, and Andrew Haslam has the same case of explaining very minimal terminologies. 189

As the time proceeded, several writers on typography published their books that comprised of several significant terminologies and, its illustrations. In 2003, John Kane wrote a book A Type Primer that contains significant terminology spread out on three pages. 190 Shaw comments on Kane’s book and criticizes that, “Kane, using Janson, includes such terms as crotch and shoulder; and differentiates between cross bar and cross stroke and between spur and barb. That said, it still falls short of what Benguiat and Young achieved.” 191 Theodore Rosendorf also provides an illustration on the terminologies in his book The Typographic Desk Reference. 192

On the other hand, Anatomy of a Typeface by Alexander S. Lawson provides no terminology and the breakdown of the parts of letterforms. 193 The entire book contains different typefaces and their details but excludes any discussion on the terminology of letterforms, which is suggested in the name of the book but there is no content regarding the anatomy of letterforms to support the book’s name. However, another book published in 2012, Anatomy of Type by Stephen Coles, covers the anatomy and parts of letters better than many others. 194 He sheds light upon the terminology of letterforms that is spread out on three spreads (fig. 35). Moreover, the book presents the readers with selected typefaces and their specific characteristics in an illustrated manner and also compares them to the older counterparts. 195 During the introduction to the chapter “The anatomy of type”, he compares the human body directly with typography by saying, “just like the human body, the Latin alphabet can take on a surprising range of shapes and proportions. These varieties can come from diverging historical paths, differences in language or culture, or simply the tool used to make the letters — whether it’s a pen, a chisel, or a compass.” 196 When one reads the names of both the books mentioned above, it is expected that the book is going to illustrate in meticulous details the nomenclature of letterforms but both the books fail to do so.
One of the recent books *The Visual History of Type* by Paul McNeil published in 2017 also fails to provide almost any details regarding the terminologies. The book brings an interesting approach as it does not follow the typical classification of type but organizes them chronologically putting into their context and making it easier to follow their history and development. McNeil comments in one of his interviews that, “traditional type classifications lack any consistency, identifying typefaces on the basis of a ragbag of historical, geographical or other arbitrary associations. They also give the illusion of mapping everything possible within the scope of the design of letters and in doing so, exclude any typefaces which don’t fall comfortably under a single classification, which amalgamate different characteristics, which the classifier dislikes, or which transcend classification altogether, as has been the case increasingly since the advent of digital type design.”

This book does not include any information on the research subject of this study, however, it brings forward an interesting approach to the classification of Latin letterforms.

The anatomy of letterforms has gone through years of progression to reach its current form and is considered as a vital concept for visual design professionals and young design students these days. Everyone interested in typography can gain knowledge, access, and choose between numerous typefaces with one click. However, the information provided may not lead to a reliable source. There is plenty of material available regarding the anatomy of type and parts of letters online but often, they provide not enough or incorrect information which either misinforms or confuses the reader. Shaw provides examples in his piece and mentions “a PDF for students at The City University of New York, which labels the upper terminal of A in Sabon as a ball; marks the middle of the arch on an M as a shoulder and the thin part of U as a link; and uses bar instead of crossbar (or cross stroke) for F.” Another example he mentions is a five minutes long YouTube video that also provides incorrect information. There are new terms appearing online often, some with a reliable source and some drawn from doubtful sources. “The new terms appearing online have not had an impact on typography books. They continue to have limited—sometimes woefully so—diagrams to illustrate letterform parts,” mentioned Shaw.

The English nomenclature of Latin letterforms has come a long way starting from Moxon’s work and developing into the various versions that are present today. We also notice that the terminology of typography has not received much importance in several countries including Germany and Switzerland as evident by the books...
aforementioned as examples. Surprisingly, even the countries where design industry and education is quite established fail to provide their own version of nomenclature of typography in details. After reviewing the progress occurring in the terminology of letterforms and looking at many examples, it is visible that the terminology has been inconsistent throughout its development. However, there are few terms that have been repeated continuously by many practicing typographers and writers on typography. Several of those terms appear to be overlapping with the nomenclature employed for the anatomical parts of human body. For example, the eye of the letter E, the shoulder of the letter N, spine of the letter S, ear of the letter G, leg and arm of the letter K, as evident in illustrations (fig.34 and fig.35). These terminologies and the inspiration behind them will be analyzed in the latter part of this research paper.

Inspirations behind the nomenclature of Latin letterforms

It is commonly known that the terminologies in the English language emerged from various cultures, languages, and origins. Terminologies in the field of typography containing a rich but limited years of history, have gone through the same process. After looking at the brief history of terminology and nomenclature of letterforms, it is essential to bring into light the possible inspirations behind the development of those terminologies. In order to do so, this study will look at various examples from the English language and outside of English language where necessary.

In a book Les Mots et Les translated into The Order of Things written by Michel Foucault, in the chapter “The Writing of Things” he mentions that, “In its original form, when it was given to men by God himself, language was an absolutely certain and transparent sign for things, because it resembled them.” He provides example and asserts that, “the names of things were lodged in the things they designated, just as strength is written in the body of the lion, regality in the eye of the eagle...” He opens up the discourse on language by adding that, “language no longer bears an immediate resemblance to the things it names, this does not mean that it is separate from the world; it still continues, in another form, to be the focus of revelations.” He gives an example of the characteristic of the letters; he mentions that, “words group syllables together, and syllables letters, because there are virtues placed in individual letters that draw them towards each other or keep them apart, exactly as the marks found in nature also repel or attract one another.” Foucault’s examples resonate with our daily lives as we have
also formed these conceptions on an abstract level that can be noticed almost everywhere, for instance, the notion that the color blue is associated to masculinity.

Following Foucault’s line of thought on association based on the resemblance of things, we see a similar inkling in the terminology of typography. In the book *Mechanik Exercises* by Joseph Moxon, to describe different parts of a machine; he employs terms including “of the ribs,” “of the head,” “of the feet,” “of the cheeks,” in a chapter on printing. He provides the supporting images to explain the parts of the machine (fig. 36). Looking at the part of a machine that he calls “of the ribs”, is it not difficult to oversee the similarities between that part and the ribs of the human body, they both have similarities in the structure and design. In another instance, Joseph Thorp in *Towards a Nomenclature for Letter Forms* provides the anatomy of letterforms, where he customs words including “Slab Serif,” and “Wedge Serif.” The “Slab Serif” evidently looks visually comparable to the actual slab (Fig. 32). Similarly, the “Wedge Serif” follows the same pattern, of having visual likeness to the named subject. We find myriad examples for these occurrences outside the discipline of typography as well. For instance, the readers of the book refer to the binded side of the book, as the book’s spine.

The development of letterform’s terminology, which was discussed earlier, brought attention to examples demonstrating the terminology.
of letterforms drawn from parts of the human body. Stephen Coles in *Anatomy of Type* presents terminologies including “Spine,” “Leg,” “Arm,” “Ear,” and “Eye.”

In the anatomy of Latin letterforms presented by Coles, the middle curvy section of the letter S is labeled as the “Spine,” the negative space or the counter space of the lowercase E is labeled as the “Eye,” the diagonal line of letter K extending downwards is labeled “Leg,” and the line extending in the upward direction is labeled “Arm.” All of these terms (Fig. 35) appear to possess visual similarities when compared to the actual human anatomical parts that they are named after.

Cole’s trail of thought can be labeled contemporary as his work was published in 2012. However, going further back, several similar instances where the terminologies of typography are borrowed from those of human body can be found. The first illustrated chart of nomenclature (Fig. 32) by Joseph Thorp in *Towards a Nomenclature for Letter Forms* also presents a case similar to Cole’s. Thorp in his works also seem to have borrowed the terminologies used the human body including the terms such as, “Ear” assigned to lowercase letter G, and the “Head” assigned to uppercase letter H. However, there is a possibility that not all the terms were directly borrowed from the human body but were influenced by the production process as mentioned earlier in the case Mechanik Exercises by Joseph Moxon, where the parts of the printing machine also the terminology borrowed from the human body. Providing potential explanation, Francis Bacon in *Novum Organum* mentions, “The human Intellect, from its peculiar nature, easily supposes a greater order and equality in things than it actually finds; and, while there are many things in Nature unique, and quite irregular, still it feigns parallels, correspondents, and relations that have no existence.”

The pattern of naming things based on the visual likeliness of two subjects is not the only factor that influences the terminology. In various cases, the physical spaces, a certain method or the placement of objects and subjects plays an important role. Ellen Lupton in *Thinking With Type* provides an image (Fig. 37) from Frank S. Henry’s book from 1917; the image shows the physical set up of the gridded cases. She mentions, “In a traditional printing shop, gridded cases hold fonts of type and spacing material. Capital letters are stored in a drawer above the minuscule letters. Hence the terms “uppercase” and “lowercase” are derived from the physical space of the print shop.” Furthermore, Meggs describe the origin of the term ‘leading’, which refers to the space between the lines of text, while he explains the printing techniques. The term that we use contemporarily in
Figure 37 Example of how physical setup influenced the terms 'uppercase,' and 'lowercase.'
our graphic design practice originated from the process of using the metal lead between the letters to assign the space for functional, and aesthetic purposes. In a similar way, Typeface, a term commonly used by designers also emerges from a similar incident. In *Practical Printing*, John Southward explains it as, “the face of type is that portion of its upper surface of which the impression is taken.”

The process of assigning terms to parts of letterforms has come a long way, beginning from Joseph Moxen’s allocation of terms to the contemporary terminologies that exist today. The literature has gathered and highlighted the establishment of the English terminology of Latin letterforms, and the possible influences and inspirations behind those terminologies that are employed by design professionals. It is also noticed in the literature that the idea of assigning terms to letterforms was probably not considered important for an extended amount of time, and even today the terminology is inconsistent depending on the diverse sources of information. The development of English terminology of Latin letterforms also suggest the change in the process of gaining knowledge because today; anatomy of typography and parts of letter are taught in design schools but in the past people learnt on the job as Shaw mentioned in the case of Ed Benguiat. While the terminologies are evolving, it is important to remember that the languages are also evolving with time.
Figure 38 Li-Se (Chinese seal writing).
“Individuals applied their minds to symbols rather than things and went beyond the world of concrete experience into the world of conceptual relations created within an enlarged time and space universe. The time world was extended beyond the range of remembered things and the space world beyond the range of known places.”

Harold A. Innis

A method of communication was not developed at a specific time or place; it developed itself through various origins, different places, and in different ages of the former human lives. All primitive societies had their own means of communication, an early stage of actual writing, or a substitute. Man is a creator and he was a designer long before he wrote; and it followed in his pictures, drawings and arrangements. The design factor took a prominent place from the beginning.

Humans invented abstract shapes and assigned sounds to them. Thus, the phonetic alphabets were designed. When the surroundings are observed, it is evident that all is designed, much of it by human beings for themselves. This part of the study explores the possibility that the design of the human body influenced the design of Latin letterforms.

Looking at the numerous designs and creations of human beings, a certain recurrence starts to emerge. One way to look at the practice is to comprehend that humans have mostly fashioned creations with a function. On the contrary, humans have also created just for the sake of aesthetic satisfaction. The same idea applies to communication; it is difficult to comprehend the clear purpose of visual communication, as it could be merely for communicating or for aesthetic purposes. Examining the functional aspect of design created by humans, one can notice that everything around us is designed keeping ourselves in mind.

Design, which commonly means to organize or to plan, has been human-centric since the beginning consciously or subconsciously. The design may be commercial or non-commercial, completely functional or non-functional but it is always created keeping the target market in mind that is, the people of different origins, cultures, races, ages, genders, that require different needs incorporated within the design. A general can be the varying architectural design in different parts of the world for various purposes including, schools, universities, and public spaces depending on the needs, culture, and several other aspects of the people. There are numerous
Figure 39 Kufic Script.
similar examples where the same idea could be explored and explained. The inspiration behind every form of design are humans. This part of the research is going to explore the possibility of application of the same idea to the invention of written communication, specifically to Latin Letterforms.

Geometry and Letterforms

Generally, every design emerges from the basic shapes and geometry. The abstract shapes that we recognize as alphabets, appear to comprise of the basic geometric shapes as well. Mark Verstockt in *Genesis of a Form* states that, “both the Greek and Roman alphabets are founded and structured on the basic, elementary forms.” Discussing the underlying geometry and basic shapes in the letterforms of other languages, he opens up the discourse by saying “an analogous structure could be demonstrated for the Chinese, Japanese, Korean, Arabic, and Hebrew alphabets; for the hieratic and demotic Egyptian scripts; and for most alphabetized pictographic forms of writing.” The influence of the geometry in the human body has also influenced everything around us including our writing systems. Verstockt clarifies the effect of geometry on the different writing systems and comments, “being once conscious of the semantic value of geometry, he had adapted his flowing scribbles to these functional, geometric forms.” He cites the works of calligraphers Wang Xizhi and Wang Xianzhi; both adapted Li-Se script, and based it on the square (fig. 38). In a similar manner, the Arabic writing system familiarized itself with Kufic because of the quality of its legibility, Kufic is employed commonly in publications, advertising, and visual communication design for those qualities (fig. 39).

A discussion around design of the letterforms often revolves around the geometric implications as well. Meggs on *Capitalis Monumentalis* notes that, “Roman inscriptions were designed for great beauty and permanence. The simple geometric lines of the *Capitalis Monumentalis* (Monumental Capitals) were drawn in thick and thin strokes, with organically unified straight and curved lines.” Describing the design details, he adds, “Each letterform was designed to become one form rather than merely the sum of its parts. Careful attention was given to the shapes of spaces inside and between the letters. A Roman inscription became a sequence of linear geometric forms adapted from the square, triangle, and circle.” Theses instances elucidate the idea that there is geometry embedded in all different types of writing systems as Verstockt believed, “It is as if man himself, aware of the significance of his conquest of geometry, had channeled this awareness into
Exploring Letterforms

Figure 40  Albrecht Dürer's study of letterforms in *Unterweysung Der Messung* (1908).

Figure 41  Luca Pacioli's study of letterforms in *Divina Proportione* (1509).
sematic systems of communication." Verstockt’s belief appears to be true for the examples that are aforementioned.

Supporting the same indications of geometry and letterforms, the selection of lettering made by Gutenberg also embodies the same notion. Meggs mentions, “Gutenberg made the obvious choice of the square, compact textura lettering style commonly used by German scribes of his day.” Comparing the visual style of textura lettering to calligraphy, Meggs states, “this typeface without subtle curves was so well developed that the characters in the forty-two-line Bible are hardly distinguishable from good calligraphy.”

The discussion of the basic shapes, geometry and their effects on the functional aspects of letterforms are a part of general practice in the disciple of typography, and type design. Alberecht Dürer in Unterweysung Der Messung demonstrates the letterforms on the basis of basic shapes, and geometry (fig. 40). In 1509, writer Luca Pacioli also studied letterforms using geometry in his book Divina Proporzione (fig. 41). Furthermore, Herbert Bayer and Joseph Albers also used geometry to experiment with the letterforms. Aforementioned are the established names that have integrated geometry in their explorations of the Latin letterforms, however, even today basic geometry is considered significant for the design of letterforms.

Geometry and the human body

The geometric shapes and influence can be observed in the anatomy of the human body. In the book Genesis of a Form by Mark Verstockt explains the idea in the chapter “Man and the Geometry of the Body” by citing an example that, “as early as the 1st century BC., Vitruvius made a study of the proportions of the human
body. He found that the face measured from the chin to the hairline, is one-tenth the length of its owner’s body.” He further goes on and cites the theory from 12th century by Hildegard von Bingen. The theory suggests that, “man, either in body length or across the span of his arms can be divided into five equal lengths; that has five sense; that there are five elements connected to the trunk (two arms, two legs, and a head); and that for these reasons the pentagram is a sign of the microcosmos.”

Distinguished figure in the field of art and science, Leonardo Di Vinci’s Vitruvius man formed geometric associations between the basic shapes including square and circle, and the proportions of the human body. Walter Isaacson in Leonardo Da Vinci: The Biography quotes Da Vinci’s thought, “the ancients called man lesser world, and certainly the use of this name is well bestowed, because his body is an analog for the whole world.” He cites Francesco’s opinions, which were similar to the ideas of Di Vinci, Francesco analogy was that “all the arts and all the world’s rules are derived from a well-composed and proportioned human body.” There are several other examples of the study of human body in the light of geometry. In 1528, Alberecht Dürer presented his works in Vier Bücher von Menschlicher Proportion; he observed the human anatomy employing the basic geometry (fig. 42).

Similarly, Verstockt cites the examples of African sculptures, he adds, “in African primitive sculptures, there are geometric – even cubist structures.” He gives other examples and mentions, “the stylized, geometrically schematized human form is found universally, as, for example, in archaic sculptures from the Greek Cyclades islands.”

Similarly, when human behavior is considered under the same line of thought, the geometry is found in routine behavior of a man. Verstockt supporting this idea explains that “we walk in a straight line from one point to another, if we throw a spear, it flies in an arc, or bow. A lasso is swung in a circular motion. Our legs spread apart to form a triangle; our arms and legs, extended, form a cross.” He further describes the movement of human body using dancing as an example, he asserts, “a round-dance describes a circle; other dances are based on parallel rows of partners; Zuni Indians and dervishes whirl in spirals.” Taking the same thought forward further, the repetition of movements creating rhythm is also observed in the daily human actions. Verstockt gives an example by saying, “the pulsing of the heart, the rhythm of the walking, stepping, strolling, breathing, eye-blinking, mating, hammering, chopping – and the origins of the rhythm in man’s creativity are
As mentioned earlier, design of architectural spaces is also relevant here, as it is designed for human's collective behavior. Verstockt comments on the architectural spaces and asserts, “the basic forms of the dwelling-places, temple and meeting-hall clearly evolved from a geometrically-based functionalist forms: the circle, square and triangle.”

Looking at the architectural example from a wider perspective, the buildings and spaces that surround us also follow similar geometric patterns. One can observe “the geometry of market square, public forum, place of ritual, theater, sporting arena, circus, courtroom, and army camp,” following the similar establishment of shapes, patterns, forms, spaces, repetitions and geometry similar to human body as mentioned above.

Figure 42 Albrecht Dürer’s work on human anatomy in Vier Bücher von Menschlicher Proportion (1528).
Intersections in design of the human body, and letterforms

The patterns of underlining geometry are observed in both; the Latin letterforms, and the human body. There are several examples of both the research subjects brought together in one form or another. In 1529, French humanist-printer-publisher Geoffroy Tory in *Champ Fleury* studied Latin letterforms in the light of human body and geometry (fig. 43). He believed that the letterforms should represent the ideal human body. While observing the letter A; he mentions, “the cross-stroke covers the man’s organ of generation, to signify that modesty and chastity are required, before all else, in those who seek acquaintance with well-shaped letters.” Tory establishes the relationships between the subjects using the 10 point geometric grid system. Moreover, he compares the different Latin letterforms to not just the human body but also specifically the human head (fig. 44).

Mary Jo Krysinski in *The Art of Type and Typography: Explorations in Use and Practice* mentions the influence of Tory's work. While discussing Claude Garamond, she cites, “not much is known regarding Garamond’s early history. He started as a punch cutter, probably working on Gothic fonts. Although he must have worked for numerous printers, he later became influenced by Geoffroy Tory.” He created a cursive type and based it on the handwriting of the librarian. Later, it was evolved and used in Robert Estienne’s *Ciceronis Opera* in 1544. Since then, Garamond became one of the most familiar names in the discipline of typography (fig. 45).

We find cases of influence of human body on the communication in other languages as well. Meggs cites
Figure 44 Tory’s study of proportions of the letterforms, and human head (1529).
Hangul, the Korean alphabet as “the most scientific writing systems ever invented.” According to him, “Sejong developed a simple vernacular alphabet of fourteen consonant and ten vowel signs to put literacy within the grasp of ordinary Korean citizens. He assembled a team of gifted young scholars to undertake a systematic study of existing writing systems and develop an innovative visible language.” In the Korean alphabet (fig. 46), fourteen consonants are formed using the abstract interpretations of the position of human mouth, and tongue. The letterforms are put together employing a rectangle, which is unlike the Greek, and Roman alphabets but similar to the Chinese characters mentioned earlier.

With this geometry established in the human body, it brings limitations to the movements of the body. Our bones provide the needed support that holds the shape and form of the body in place. When a person moves in a certain way, angles between the human bones are automatically formed that enable us to perform actions but at the same time disable us to move in certain directions. Leonardo da Vinci in his notebook, while describing anatomy explains that, “If the two first joints are prevented from bending the third joint will bend more readily than before, but it can never bend of itself alone if the other joints are free, but all the three joints must bend.” This possibility of movement and limitations apply to all the parts of our body including fingers, hands, arms, shoulders, legs, and so on.

Furthermore, this limitation of the movement is reflected in all the products designed for the humans. It is not hard for a logical mind to perceive that in the earlier days, the tools used to create marks were designed so that a human hand could use them based on the limitations of the movements.
of his arm, elbow, wrist, and fingers. Humans were employing the muscles of their shoulders and arms to create marks at the beginning, which later evolved into them holding a brush or a pen that required the movement of only a finger, and a thumb, along with subtle movements of the whole hand. For instance, Meggs on the hieroglyphic for the scribes (Fig. 47) mentions that, “the hieroglyph for scribe was a pictorial image of the very early brush holder, palette, and sack of ink.” He adds that, “the scribes simplified the inscriptive hieroglyphs from a carefully constructed picture to a quickly drawn gesture.”

While discussing the different writing tools and the visual style they provide, he mentions, “The earliest hieratic script differed from the hieroglyphs only in that the use of a rush pen, instead of a pointed brush, produced more abstract characters with a terse, angular quality.” Robinson on hieroglyphics asserts that, “they were chiseled on stone of various kinds, cut or painted on wood or plaster, and written on papyrus or skin; the characters being arranged in vertical columns.” It is evident that a carefully drawn picture in its later stages developed into rapidly created simplified symbols possessing an angular visual style, which displays the development, and the changes in usage of the different tools.

Another example of the same idea can be observed with the story behind the serifs of Roman letterforms. Meggs describes serifs as “small lines extending from the ends of the major strokes of a letterform.” Explaining the different theories regarding the serifs, he mentions, “one theory holds that the serifs were originally chisel marks made by the ‘cleanup’ strokes as the stonemason finished carving a letter.” Whereas, another
theory puts forward a claim that “the inscriptions were first drawn on the stone with a flat sign writer’s brush, and that the sign writer gave a short gesture before lifting the brush to sharpen the termination of the stroke.”  

However, it is certain that “the original letters were drawn on the stone with a brush and then carved into it.” From carving the letters in stone to eventually holding a pen or a brush, the movement of the arm while creating the letterforms became further restricted as the Letterforms, and the tools used to create those further advanced with time.

With time as the tools for writing became further advanced, it resulted in the movement of the arm to become further restricted. The process of writing went from using the whole arm and shoulder and became limited to only the movement of a finger, and a thumb for holding a brush or a pen. Those limited movements have reflected upon the tools and the machines that originated as a solution for the reproduction of written communication. Directly comparing the visual style of hand done calligraphy to the machine produced Lettering in German scribes, Meggs mentions that, “this typeface without subtle curves was so well developed that the characters in the forty-two-line Bible are hardly distinguishable from good calligraphy.”

Figure 47 Depiction of an old palette, reed brush holder, and a sack for dried ink cakes.
The advancement in the tools helped the writing process but was not enough when the abundant reproductions were required. It required plenty of manpower to create copies of literature, records, and any other written piece, which needed to be reproduced. Pierce Butler in his book *The Origin of Printing in Europe* mentions that around 1450, Johann Gensfleischzum Gutenberg was the first to fashion a method including all its technical details needed to print a book.²⁵⁶ There were several attempts to solve the problem of reproductions; during these attempts, the process of etching and engraving were produced but Gutenberg’s production exceeded any of the previous methods by both his mechanical excellence, and aesthetics value.²⁵⁷

Even though the design of the moveable type was a success as it provided ample flexibility, and was the best solution to the problem. However, it had not achieved the same level of finesse and detail that professionals could with hand lettering. Meggs in his chapter “moveable typography in Europe” mentions that, “The generous number of alternate characters and ligatures enabled Gutenberg to achieve the richness and variety of the manuscript page. For further enrichment, blank spaces were left for decorative initials to be drawn in later by a scribe.”²⁵⁸ Example of another limitation can be, “a rigorous justification of the columns was possible because Latin words could be abbreviated freely. Up to six letters could be replaced by abbreviation symbols above the words.”²⁵⁹ The invention provided additional freedom compared to the previous establishment. However, along with myriad other challenges, and limitations that came with the new processes, there was need of a skilled individual to provide the printed materials with extra enhancements.

Subsequently, the design and printing industry then became further advanced, which brought additional flexibility to reproduce the designs better. On scripts emulating handwriting, Stephen Coles in *The Anatomy of Type* mentions, “traditionally, a script typeface emulates handwriting, whether its letters are a graceful, connected cursive or the staccato scribbles of a daily shopping list.”²⁶⁰ He further explains, “Scripts can also be sorted by the writing tool, such as pen or brush.”²⁶¹ Today, we have all different possibilities that can help emulate the exact script, handwriting, or its derivatives. Reproduction of the designs is easier than ever before because of latest developments in the filed of design and printing. However, the origin of printing that had allowed the reproduction, was merely attempting to mimic man’s hand lettering on paper. As a result, limiting the medium and the possibilities of communication.
In a talk, *The Humane Representation of a Thought* by Brett Victor, presented in Portland during Splash Conference in 2014, he sheds light on the limited medium that human beings have created for themselves. He asserts, "we have invented media that severely restrain our range of intellectual experience that of all the many capabilities that we have, all the various ways of thinking that we have constrained ourselves to a tiny subset, we are not allowed to use our full intellect."262 The development of communication has limited us to one medium that is, digital or print, where we use only two senses out of five. To elaborate the full range of human capabilities of understanding, he elaborates his idea by utilizing three modes of understanding.

Firstly, he begins elaborating his idea using sensory channels that human employ to understand their surroundings. Humans have five sensory channels, namely visual, aural, tactile, kinesthetic, and spatial. Victor explains aural, by giving music as an example. Then he explains the same example visually by mentioning "sheet music," which is the visual representation of music. Discussing the tactile sensory channel, he mentions the interaction of human hand with the music instruments.263 After explaining an example of the sensory channels, he continues to explore the same idea of music in the remaining two senses. Talking about the kinesthetic channel, he mentions dance, he called it "the understanding of music which lives in the body."264 Towards the end, to explain the idea of spatial, he talks regarding the performances of the orchestra, and the use of sound in a spatial setting.265

Secondly, he discusses regarding the Jerome Bruner's theory from his book *Toward a Theory of Instruction* published in 1966.266 In this theory, Bruner discusses other modes of understating including "the action based, image based, and the language based understandings."267 Victor explains the action based method by giving an example of riding a bike; it is something that a person can understand by doing it, the understanding of riding a bike lives in the performance of it. Whereas, the image based method comprises of looking at the mechanical system of the bike and understanding it. Finally, the language based method may include the understanding that one can articulate, and talk about.

Lastly, Victor discusses the third mode of understanding and cites the theory that originates from Howard Gardner's book. In 1983, Gardner in *Frames of Mind: The Theory of Multiple Intelligences* discusses the third mode of understanding that comprises of Visual, Verbal, Logical, Musical, Bodily, Inter-personal, Intra-personal,
Brett after explaining the three modes of understanding also adds, “it is important to remember that speech is purely symbolic, and the most important invention in the history of humanity was the invention of writing, where you took speech and turned it into the image based, iconic, second channel form.”

He continues the discussion and states that because of the advancements that we have made including the invention of printing press, and digital screens, we have made ourselves limited to only visual, and symbolic channels. He asserts that moving from books to screens, we have restricted ourselves even further to employ almost no spatial or tactile capabilities. He declares it “inhumane” morally, and “wasteful.”

He mentions, “When you have multiple representations, they compound and reinforce each other in incredibly powerful ways that allow for understating that would not be possible in any single channel.”

Currently, our way of written communication is limited to paper or digital a screen that does not allow us to use our full range of capabilities when it comes to communication.

All in all, since the development of phonetic letterforms, any major breakthrough in the development of communication has not occurred. In the first glance, one can notice that all the examples brought forward in this study indicate the influences of the human body on the Latin letterforms in various manners. Dividing the main research question in three parts allowed this study to explore the clues of influence originating from the human body, which are visible in the developmental stages of Latin letterforms, their terminology, and their design. Some of the influences and the reasoning behind those influences were brought forward with the help of examples derived from secondary sources. However, the found information will be further analyzed and examined in the following part of this study to create concrete arguments that may aid in finding the answers for the research questions.
Analysis

Part 1 – Evidence In the evolution of Latin letterforms

Everything around us has evolved with time and the advancements can be noticed in every step of the human history. Invention of writing, as discussed earlier, is considered one of the imperative steps of the development concerning the human society. The written communication went through countless years of development and was influenced by myriad societies of the former human cultures. There are several theories on invention of writing and its various stages of development. However, it is important to note that all these developmental stages were fashioned by individuals of various time and location hence, the trails of their involvement can be witnessed in every step in various manners. In visual form, the inspirations originating from human body are evident in developmental stages of written communication that are reflected in modern Latin letterforms.

For this part of the analysis, the scope of this study allows considering only selected time periods from the rich history of the subject matter. However, the main focus of this part of the study revolves around the analysis of evidence found in the literature review. The analysis includes but is not limited to the myths and the legends, the theory that written communication emerged from pictures, the theory that clay tokens were the origin of writing, and early stages of Latin letterforms. The information gathered in the earlier stages of this research will be combined with the examples and insights brought forward by the researcher of this study to better understand the credibility of the evidence discovered in the collected data.

Generally, one of the usual ways human interaction happens is through stories. Stories are one of the several ways that are employed to convey an occurrence or an imaginative manifestation, sometimes a combination of both. The history of writing is no exception; it is filled with stories, the myths, and the legends. When the knowledge on the genesis of writing was not yet uncovered, numerous stories and legends filled the gaps. Andrew Robinson’s book *The Story of Writing* describes a story a child in Northern Syria that became inspired by the Egyptian Hieroglyphs. The child fashioned some new abstract symbols and assigned them sounds from his own language. The child named Taffimai created shapes that she called “noise-pictures.” The child describes to her father that the letter O resembles her
father’s open mouth when he says ah. Even though Robinson has speculated regarding the origin of the alphabet but even in those speculations, the hint of inspiration behind the visual shape of the letter O is the simplified shape of a human mouth (Fig. 3).

On the contrary, it is difficult to entirely believe the instance provided by Robinson, as it is only a speculation without any supporting examples. It is challenging for a child to link the shape of her father’s mouth and the sound originating from it, to come up with something completely original. Robinson has provided no historical or archeological research but when the citations are observed, he mentions Rudyard Kipling’s book Just So Stories. In this book, Kipling has written a story of a child who invented the first alphabet. It is possible that the child noticed something similar in a book, or another source and brought it in a different manner to present it to her father. Because the speculations presented by Kipling and Robinson provide no supporting evidence. Therefore, this occurrence cannot be trusted even when the speculation supports the argument of this research.

Similar to the tradition of myths and legends, the invention of written communication is often associated with the gods, goddesses and fabulous creatures. Some myths suggest that a creature from the sea, which was a hybrid between a fish and man, gifted knowledge to the Babylonian regarding writing and language. Whereas, other myths suggest that the lord of wisdom is mentioned as the source of secret knowledge including writing. Additionally, it was also believed that until the eighteenth century that Gods or creatures in legends were the inventors of writing. Afterwards, in the time of enlightenment, the idea emerged that scripts had originated in the form of picture writing. Some myths, legends and stories appear to be interlinked vaguely but others maybe argued as general speculation. However, all of them have one aspect in common, a willingness to fill the void of unknown information on the genesis of writing. Moreover, none of these myth and legends besides the speculation made by Kipling and Robinson supports the argument of this part of the research.

A very prominent theory that is still considered as the first to provide any explanation on the invention of writing besides the myths and legends is the pictographic theory. The theory is based on William Warburton’s study of Egyptian, Chinese, and Aztec manuscripts. Warburton proposed that every script had progressed from narrative drawings. To explain his theory further, he
clarified that the pictures became further stylized in the later stages of development of writing. In 1738, the theory was presented in his book *Divine Legation of Moses*. The history of writing in its early stages is filled with documented images of pictographs. In the light of this theory and the documented pictograms of various time periods, inspirations existing in visual form, discovered in the first part of the literature review can be critically analyzed.

An early Chinese pictogram, which comes roughly from 2000 BC, represents a child (fig. 48). The pictogram appears to be a stick figure representing a simplified human body with a big head. It uses a big rectangle as a human head, long diagonal and symmetrical lines as arms. The use of proportion includes a bigger rectangle as head with smaller limbs, which is similar to proportions of a real child. Even today, when the child is represented as an icon for way finding or other purposes, the head of the child is mostly drawn bigger (fig. 49). One can see that the similarities in both the visual representations of a child, even though there is years of difference between the two.

To further analyze this early Chinese pictogram, it is essential to compare it to its modern equivalent that exists currently. As illustrated, the evolution of the Chinese pictogram depicting a child is presented (fig. 50). The illustration shows that the literal visual representation of the child slowly progressed into an abstract symbol. Additionally, the steps of its

Figure 48 On the left, An early Chinese pictogram representing a child, dated about 2000 BC.

Figure 49 On the right, Contemporary Icons representing male, and female children.
progressions support argument of this part of the study along with the pictographic theory. The illustration not only shows the evidence of human inspiration drawn to written communication in visual form but at the same time illustrates the progression of picture writing towards an abstract symbol used in modern Chinese script. It is also noticeable that similar evolution is visible in the other instances such as, the representation of the word ‘women’. Whereas, the other words like ‘strength’ are seen depicting an idea, or association.

In support of this argument, the idea visible in the Chinese pictogram and its evolution appears to be repeated in an Egyptian pictogram from 3500 BC. representing a human eye (fig. 51). This representation appears to be a literal compared to the Chinese pictogram. The Egyptian pictogram demonstrates the use of curves, the use of thick and thin lines that bring dimension to the overall representation. The visual style resembles the actual shape of the human eye. It uses elongated shape with straight lines moving outwards, similar to the ray bans used in Art Deco, the lines may represent tears or eye lashes. Again, the direct inspiration drawn from human body into a pictogram is observed in this case, similar to the Chinese pictogram.
Moreover, when this Egyptian pictogram is observed in the light of various developmental stages of written communication, a certain Pattern emerges. Comparing this Egyptian pictogram to the Cretan pictogram (fig. 28), which was discussed earlier, it is evident that the two are similar in the approach and the style of their visual representation. Both Egyptian and Cretan pictogram demonstrate a literal representation of a human eye. Moreover, it is observable that the Cretan pictogram slowly progressed into a simplified abstract shape during the time periods including Phoenician, Early Greek, Classical Greek, and Latin. Afterwards, it progressed into its current form in the shape of the modern English alphabet.

Another example supporting the argument is illustrated in a realistic visual style (fig. 9). The pictogram illustrates an assembly of soldiers with red marks painted on their faces. The names of those warriors are represented using the small marks above their head, for example, the Iron-Hawk, Charging- Hawk, and Red-Crows. This pictogram demonstrates an understanding that people were able to communicate by using human heads as a central element with the addition of other visual elements. The visual elements are representing the nouns; in this case, their names of warriors.

On the contrary, even though the examples support the argument that the inspirations originating from the human body are visible in the
developmental stages of written communication. However, there is not much known regarding the reasons behind the representation of human body as a part of written communication. It is known that in Egyptian writing systems, Determinatives were used to support and indicate the meaning of messages (fig. 52). The Determinatives included human body as one of the central figures to support the communication. In this case the purpose of human figures appearing in the Egyptian writing supports the argument. However, in several cases, the appearance of human body in various writing systems and the reasons behind it are unknown. The reasons maybe completely functional or for aesthetic purposes but the appearance of human body in various writing systems is consistent.

Convincingly, all the aforementioned examples support the argument of this analysis. Picture writing and pictograms have a rich history with various stages of development; it is impossible to consider all of those in the course of this study. However, all the examples that are observed closely have one aspect in common even though the visual styles, representation, and the dates of creation of these pictograms are varied. In all the discussed pictograms, the use of human figure or parts of human body is visibly evident. Both the Chinese and Egyptian pictograms embody the idea that the visual representation moved away from literal and became abstract as the progressions took place. The ideas originating from the pictographic theory appears to be true in the case of discussed examples. It is apparent that the pictographic theory, one of the significant theories on history of writing supports the proposition that the human body significantly inspired the development of written communication.
To analyze this subject further, one can observe the similar patterns in the light of another theory on the origin of writing. This theory challenged the pictographic theory brought forward the notion that clay token were the first step towards the written form of communication. During the Twentieth century, ample evidence was gathered to challenge the pictographic theory completely. The researches challenged the pictographic theory and now, it is commonly established that writing originated from clay tokens. Schmandt-Besserat mentions, “The immediate precursor of cuneiform writing was a system of tokens.”

Using the established theory that clay tokens were the first step towards the written communication, it is essential to examine the possible evidence of inspiration drawn from human body to the different stages of clay tokens.

Supporting the argument, one instance from the developmental period of clay tokens demonstrates the visible use of human body. Even though the beginning of clay tokens emerged as simple geometric forms but in the later stages, those progressed into naturalistic forms. The naturalistic forms comprised of tools, fruits, and human body parts to name a few. The example demonstrates representation of a human body part in a naturalistic form and supports the argument of this research from the perceptive of this theory as well (fig. 53). Even though the legs illustrated in the example comprises of naturalistic forms and organic shapes but at the same time it appears to include some geometric inspirations.
Comparatively, observing this clay form representing a human leg in the light of an Egyptian hieroglyphic alphabet, it is obvious that the two shares a stark resemble (fig. 53). Even though the Egyptian hieroglyphic alphabet is not made using clay, the visual representation of the human leg appears to comprise of a very similar visual style. In the case of the Egyptian hieroglyphic alphabet, illustration is designed to function as an alphabet and it translates to the letter B, whereas, in case of the clay representation of the human leg, the purpose is unknown.

As the clay token developed further, the representation of human body became further visible. Observing the records of clay tokens presents us with additional examples where human figures are significantly used. The clay envelope (fig. 18) covered with seal impressions demonstrates very prominent use of human body. However, the purpose of those human figures is not mentioned. The impressions on the seal that appear to be human bodies might have been used to mark an identity of the owner of the clay envelope. Even though the purpose of those human figures on the clay envelope is unknown, it is obvious that the human body was becoming a central part of the development of clay tokens. Similarly, another example of the same idea can be witnessed in different developmental stage of clay tokens (fig. 22). In this instance, the three human figures appear to performing an action. The visual style appears to be derived from the basic geometric shapes but the shapes are drawn to give an appearance of organic shapes. It is similar to the approach one can notice in a drawing class teaching anatomy of human body, starting from the basic geometric shapes and then combining those shapes to achieve further organic forms.

Compellingly, the example discussed on the progression of clay tokens supports the argument of this analysis. Even though, the clay token started as geometric shapes, they soon progressed into naturalistic forms and the representation of human body in their writing system became visible. However, unlike the Egyptian writing system, the purpose of the representation of human body in their writing system is not known. It is possible that like the Egyptian writing system, the progression of clay tokens considered supporting the message with the use of clear visual representations. As mentioned earlier, the representation of the human leg in both writing systems is very similar which indicates this same idea. But the like the Egyptian writing system, presence of human body remains constant in the progressions of the clay tokens.
Contradicting the main idea, the inspirations visible in different time periods are not only originating from the human body. Looking at the Egyptian writing system, it is obvious that their source of inspiration was not limited to human body, it extended to all the objects and subjects that surrounded the lives of people living in those time periods. Observing the examples discussed earlier, it is visible that the Egyptian writing system included visual representation of the sun, owl, water, snake, tree, star, land, and so on. The pattern can be witnessed in the progression of the clay tokens, the development of clay tokens show the inspirations such as, fruits, furniture, tools, and so on. The reasons for these inspirations is possibly the need to communicate regarding certain subject and objects, which would have not been possible without their visual representation and building an extended writing system. Even though there are inspirations derived from various sources and not just human body, it does not fully contradict the examples presented earlier.

Comparing the establishments made by Egyptians to the later developmental stages of written communication, clear visual progression between the different stages of developments is evident. The illustration (Fig. 30) brings the Greek and Latin in the light of Egyptian writing system. The Egyptian writing system presents the use of human body parts in some areas of their writing system, for instance, mouth and hand. Along with the others, the visual representation of mouth and hand is visibly altered into a further stylized shape in the later stages. The visual shape of hand presented in Egyptian writing system became almost a triangle after stylization in the later stages. While, the shape of mouth progressed into a shape similar to modern letter P, it is noticeable that the literal shapes and representations became stylized into simple geometric shapes. This gives an indication that the human body inspired not just the clay tokens or pictographs but also the development of the later stages of writing that evolved into the modern Latin letterforms and other writing systems.

Looking at the modern modes of written communication, there are indications suggesting the presence of pictograms in our daily lives. In most way finding design, designers use simplified presentations of human body, also known as icons, to communicate with the users. For instance, the way finding design that provides directions to the toilets for men and women. In a similar manner, one can observe the signs on the streets using the similar iconography for aiding the traffic rules. These signs are standardized and are used throughout the world to make it easy for all races, ethnicities and nationalities to understand the directions (fig. 54).
These ideas can be noticed in several digital platforms and services as well. Almost every social media and digital chat applications comprises of the set of icons known as ‘emojis’. The users often use emojis in their written communication to better describe their emotions and feelings. The variations of emojis are also reflected in digital and social media services including Instagram and Snapchat as filters, where the emojis are placed onto the human face to create augmented reality experiences. In one way, these ideas seem to be an extension of the pictograms from the historic periods because even in these modern digital services, set of icons are used to communicate effectively and sometimes just for aesthetics purposes (fig. 55).

Conclusively, both the pictographic theory, the theory that claims clay tokens were the first step towards the written communication provide evidence of inspirations drawn to written communication from human body. Both the theories present this study with obvious signs of the use of human body, which may indicate that these theories have further aspects in common even though the theories challenge one another. In the examples discussed, it is also visible that the human body inspired the various developmental stages of written communication. Additionally, the use of human body is obvious in the modern modes of written communication and digital services in the form of icons, emojis and so on. However, it is also essential to consider that the purpose of human
Body in several stages of written communication is not entirely well defined. In several cases, it is difficult to conclude if the purpose was only functional, for aesthetics purposes or a combination of both. Moreover, another aspect to consider is that human body was not the only source of inspiration. The other inspirations originated from the objects and subjects that surrounded the lives of people in those time periods. For instance, Egyptian writing system includes inspiration drawn from the sun, eagle, owl, water and so on. While, the clay objects are noticed depicting fruits, tools, furniture and so on. Still, in the light of the evidence, it is obvious that the human body significantly inspired the various stages of written communication, which later inspired various writing systems along with the modern Latin letterforms.

Figure 54 Commonly used emojis in various social media platforms.
Part 2 – Evidence in Nomenclature of Latin letterforms

Every language consists of vast vocabulary that is commonly practiced in everyday communication. However, in several disciplines, the set of terminology becomes very specific. To communicate effectively amongst the professionals, it is essential for the discipline to comprise of an established set of terminology. The field of visual studies demonstrates similar practices, each design field comprises of terminology that the other design fields might not be familiar with. In the case of typography and type design, there are various terminologies and nomenclature that are employed to aid the communication, collaboration and to convey the message to professionals of the same practice. Looking closely to the terminology employed in the field of typography and type design, one can observe that it might be influenced by the terminologies of the different disciplines. The indications that terminology employed for human body has notably inspired the terminology of the Latin letterforms are quite evident.

To critically analyze the data gathered in literature review, it is essential to emphasize on the English terminologies of letterforms discussed in the earlier chapters that are evidently inspired by the human body. In 1683, Joseph Moxon in *Mechanik Exercises* was the first to assign terminologies to different parts of letterforms including, “The Topping,” “The Footing,” “The Bottom-Footing,” “The Stem,” “Fat-Stroaks,” “Lean Stroaks,” “Beak of Letters,” “Tails of Letters,” and “Swash Letters.” Moxon employs the term “Footing”, which is a direct derivative of the word Foot, used commonly as the name of the anatomical part of the human body. Additionally, Moxon presents other terms that are not assigned to letterforms but to the parts of a printing machine. He presents terms including “of the ribs,” “of the head,” “of the feet,” and “of the cheeks” in a chapter on printing. Moxon’s use of terminology inspired by the human body is obvious in not just naming the parts of letterforms but also naming the parts of the printing machine.

Providing support to the Moxon’s approach, a number of variations for the terminology were presented in the later stages, which used terminology from anatomical parts of human body and assigned it to letterforms. Joseph Thorp employs terms such as, “foot” and “head” for the uppercase letter H. Correspondingly, to name an anatomical part of the lowercase letter G, he employs the term “ear.” While, John R. Biggs assigns the term “spine” to name the curve
**Figure 56 Chart based on reviewed literature illustrating the English terminologies of Letterforms inspired by the human body.**

<table>
<thead>
<tr>
<th>Joseph Moxon</th>
<th>John R. Biggs</th>
<th>Rauri McLean</th>
</tr>
</thead>
</table>

- **Fat-Strokes**
- **The Bottom-Footing**
- **The Footing**

<table>
<thead>
<tr>
<th>Joseph Thorp</th>
</tr>
</thead>
<tbody>
<tr>
<td>in <em>Towards a Nomenclature for Letterforms</em> (1931).</td>
</tr>
</tbody>
</table>

- **Bracketed Serifed foot**
- **Ear**
- **Foot**
- **Head**
- **Hooked head finial**

<table>
<thead>
<tr>
<th>Philip Gaskell</th>
</tr>
</thead>
<tbody>
<tr>
<td>in <em>A Nomenclature for the Letter-Forms of Roman Type</em> (1974).</td>
</tr>
</tbody>
</table>

- **Arm**
- **Arm serif**
- **Lower arm**
- **Shoulder**
- **Upper arm**
- **Upper arm serif**
- **lower arm serif**

<table>
<thead>
<tr>
<th>James Craig</th>
</tr>
</thead>
<tbody>
<tr>
<td>in <em>Designing With Type</em> (1980).</td>
</tr>
</tbody>
</table>

- **Body**

<table>
<thead>
<tr>
<th>Rauri McLean</th>
</tr>
</thead>
</table>

- **Size of face**
- **Hooked head**
- **Hooked foot**
- **Ear**
- **Old face**

<table>
<thead>
<tr>
<th>Ed Benguiat</th>
</tr>
</thead>
<tbody>
<tr>
<td>in (1981).</td>
</tr>
</tbody>
</table>

- **Arm**
- **Ear**
- **Eye**
- **Feet**
- **Foot**
- **High waist**
- **Limb**
- **Lobe**
- **Low waist**
- **Spine**
- **Swash leg**
- **Tear**
- **Tear ball**

---

**Note:** This chart only includes some of the terms from the data gathered in literature review. It may not include various terms presented by the aforementioned writers in different editions of their work.

Arm
Ear
Eye
Lobe
Shoulder
Spine
Tear drop
Waist

John Kane in A Type Primer (2003).

Arm
Crotch
Ear
Hairline
Leg
Shoulder
Spine


Arm
Crotch
Ear
Hairline
Leg
Shoulder
Spine


Arm
Ear
Eye
Leg
Spine

Stephen Coles in The Anatomy of Type (2012).

Arm
Ear
Eye
Leg
Spine
Exploring Letterforms

of the letter S. Philip Gaskell employs the term “arm” to name almost all the extensions and links between the shapes of the letterforms. Correspondingly, he uses the term “shoulder” for multiple parts of letterforms that are curved creating an umbrella like shape. Ed Benguiat presents the terms “swash Leg” to elucidate the cursive diagonal extension of letter R, “ear” to describe the anatomical part of letter G, and “arm” to explain the horizontal stroke of the uppercase letter T. Additionally, he assigns “eye” to elucidate the counter space of the lowercase E, “high Waist” to explain the horizontal stroke of lowercase T, and “Foot” to explain the straight diagonal extension of uppercase R.

Furthermore, Doyald Young employs the terms including “eye” of letter E, “arm” of letter E, “ear” of letter G, “waist” of letter R, “shoulder” of letter N, and “spine” of letter S to name a few. John Kane’s employs terms including “ear” of lowercase G and R. In another instance, he employs “leg” of uppercase L, K and R. Stephen Coles employs terminology including, spine, arm, leg, eye, ear in a similar manner as Young. Coles is also noticed establishing direct comparisons of human body with Latin alphabet, he asserts, “Just like the human body, the Latin alphabet can take on a surprising range of shapes and proportions. These varieties can come from diverging historical paths, differences in language or culture, or simply the tool used to make the letters — whether it’s a pen, a chisel, or a compass.” To develop this argument further, the researcher of this study presents an Illustration of the entire set of terminologies observed in the literature review, which are evidently derived from human anatomical parts and assigned to the Latin letterforms in English language (fig. 56).

Given the illustration, the repetition in the approach of assigning terminology to the letterforms is obvious; the works of one professional significantly informed and inspired the works of another professional in the discipline. A similar pattern was discussed earlier in the various developmental periods of the written communication, where one writing system notably informed the other. For example, the Latin letterforms were a slightly modified version of the Greek alphabet. In the case of terminology of the Latin letterforms, it is vital to question the thought behind this development, where one set of terminology informed the other. One way to view this is to consider the process through which knowledge is passed on. The modern day writers observe the works of the writers from the past and take their works forward in their own way, which is visible in the illustration (fig. 56). Another method to reason this is to consider the knowledge transfer though oral traditions,
where one experienced professional of the discipline working with another professional, passes on his knowledge to him. Another important aspect that comes forward is the shift in the process of knowledge transfer from oral traditions to books. It is visible that academic literature regarding terminology of letterforms was not considered significant and was not common until it appeared in the works of various writers such as Gaskell, Thorp and so on. From there onwards, various modern day writers acquired inspirations from the past writers and the repetition in the ideas resulted in the reappearance of the similar terminologies assigned to the letterforms, building a fairly common understanding with in the discipline of type design.

To further examine the aforementioned illustration, it is essential to consider the notion that humans often view their surroundings in their own image. As mentioned earlier, humans have the tendency to find commonalities amongst the matters that are not familiar to them. In our daily routine, we often employ terms emerging from the terminology of human body to explain various animate and inanimate objects. For instance, when we reason human tendency of naming furniture or parts of furniture, we commonly employ terms such as, arm chair, legs of a chair, back of the chair and so on. This behavior can be witnessed in various other areas in our daily lives, we are familiar with the terms including feet of the bathtub, mouth of the pipe, teeth of the saw, and eye of the needle. To further demonstrate this behavior, mountain ranges have spines, glacial lakes have fingers and so on. This behavior might be linked to functional and the visual characteristic that each term brings to a certain animate, and inanimate object.

Supporting this argument, Daniel Kahneman in *Thinking, Fast and Slow* cites David Hume’s ideas of “Principles of Association.” Based on these principles, three ways that a human employs to build associations are, resemblance, contiguity in time and place and causality. The observations made in this research points towards the possibility that inspirations drawn from the human body might be based on the visual similarities of the shapes and characteristics of the letterforms and human body. Another possible reason might be based on the human tendency to translate abstract or unclear images as complete. Both the possible reasons have one aspect in common; the human tendency to construct visual associations based on their own image and their existing knowledge. In the possibilities behind the inspirations the process of creating associations is based on resemblance. This notion would be further analyzed with the aid of an original illustration (fig. 57)
Figure 57 Visual comparisons of the Latin Letterform’s English terminology, and the human anatomical parts
Exploring Letterforms

Leg
presented by researcher of this study, the illustration visually compares various terminologies of the letterforms to the anatomical parts of the human body.

Comparing the human body’s anatomical parts to the terminology of letterforms inspired by the human body may help this study to further analyze the idea suggesting that visually similar elements are conceived as associated. The book *Universal Principles of Design: 125 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions* in the chapter “Uniform Connectedness” explains this as one of the *Gestalt Principles of Perception*. The book explains this perception as, “elements that are connected by uniform visual properties... are perceived to be more related than elements that are not connected.” In the case of Latin letterforms, it is noticeable that the use of terminology originating from human body is assigned mostly to parts of letterforms that embody a similar visual shape, structure and characteristics. For instance, in *Anatomy of Type* Stephen Coles assigns the term “spine” to the curved part of the letter S. When observed carefully, the shape of the human spine comprises similar visual characteristics to the anatomical part of the letter S that Coles termed “spine.” One of the common properties of the spine is provide support and flexibility to the human body. In a similar manner, the curve of the letter S also provides stability to its shape, structure and holds similar visual characteristics (fig. 57).

Supporting the argument, the work of Doyald Young, which was discussed earlier, demonstrates the same idea of assigning terms based on visually similar characteristics. In Young’s work, he assigns the term “eye” to the counter space of lowercase letter E. The shape, and the overall visual characteristics of a human eye holds direct resemble to the counter space of the lowercase E. Therefore, it is noticeable that the term employed for an anatomical part of human body has inspired the terminology assigned to the counter space of letter E because of its visual similarity. The same patterns can be noticed in many other cases including the “shoulder” of lowercase letter N, “arm” of letter E, “leg” of letter R, and so on.

On the contrary, another manner to explain the direct inspirations drawn from the human body to the terminology of letterforms may be the human behavior in which an individual translates abstract images, and shapes as simple. This behavior can be explained using the *Law of Prägnanz*, which is one of the principles presented in *Gestalt Principles of Perception*. According to this principle, it is a human ability and “a tendency to interpret ambiguous images as simple and complete.” This idea
provides the letterforms a different perspective, as letterforms are merely abstracts shapes and based on the *Law of Prägnanz*, humans tend to interpret these ambiguous shapes into something familiar. For comparison, the illustration (fig. 57) shows the human leg, it provides support and balance to the human body. Similarly, the lower diagonal stroke of letter K and R is termed “leg” by John Kane in his work possibly because of the familiarity in its characteristics.

A similar notion is presented in a book *Les Mots et Les* translated into *The Order of Things* written by Michael Foucault. He comments that, “in its original form, when it was given to men by God himself, language was an absolutely certain and transparent sign for things, because it resembled them.” He further explains and mentions, “the names of things were lodged in the things they designated, just as strength is written in the body of the lion, regality in the eye of the eagle...” Foucault on the idea naming things based on resemblance comments that, “language no longer bears an immediate resemblance to the things it names, this does not mean that it is separate from the world; it still continues, in another form, to be the focus of revelations...” Foucault’s ideas presents similar thoughts as the ideas observed in *Law of Prägnanz*, and *Uniform Connectedness* earlier.

In support of the argument, a similar occurrence was discussed earlier in the discussion on pictograms. The discussion brought forward and analyzed the representation of a human leg that notably held similar visual characteristics compared to the Egyptian representation of the leg in hieroglyphic alphabet. To take that idea further, illustration presented by the researcher of this study visually compares the human leg and its structure to the representations fashioned in clay, and in Egyptian hieroglyphic alphabet (fig. 58). One can notice that the human leg fashioned in clay still contains the geometric shapes, almost suggesting that it is a combination of the geometric shapes providing a naturalistic appearance to this representation. On the other hand, the representation in the Egyptian writing systems appears further close to the organic visual characteristics that the real human leg contains. In the illustration, one can clearly observe the visual representation employed in writing systems evolving into another further realistic representation.

Contradicting to the arguments constructed earlier, there are several terminologies assigned to the parts of Latin letterforms that are not inspired by human body. Although, both the explanations behind the inspirations of terminology of
letterforms are based on “resemblance” from Hume’s “Principles of Association.” Nonetheless, it is essential to consider that there may be many other reasons and possible inspirations behind the development of terminology of Latin letterforms. One inspiration that comes to mind is the physical spaces that have inspired the terminology of letterforms. For instance, Ellen Lupton in Thinking With Type provides an example of the physical spaces and setups inspiring the terminology of letterforms. She mentions, “In a traditional printing shop, gridded cases hold fonts of type and spacing material. Capital letters are stored in a drawer above the minuscule letters. Hence the terms “uppercase” and “lowercase” are derived from the physical space of the print shop.” These terms drawn from the setup of the printing space have become prevalent in a manner that even people outside the discipline of design are often witnessed employing them.

Similarly, another case of terminology of letterforms not based on resemblance or human body; is the use of terms, serif and san serif. Commonly, in French language the word sans means without, which translates san serif to ‘without serif’. This is a reminder that one must consider the oral traditions that may have inspired the terminology used in typography today. It is human nature to grow, evolve, and be inspired by one thing and apply that inspiration to something else. Francis Bacon in his book Novum Organum mentions, “the human Intellect, from its
peculiar nature, easily supposes a greater order and equality in things than it actually finds; and, while there are many things in Nature unique, and quite irregular, still it feigns parallels, correspondents, and relations that have no existence." Bacon’s thoughts provide a possible explanation to the various reasons behind the human tendency to find parallels, to name things, to find order. All of these thoughts and patterns can be observed in one way or the other in the developments of terminology of Latin letterforms.

Finally, the exploration has established that the human body has significantly inspired the terminology of Latin letterforms. After observing the very first terminology presented by Moxon, the first known illustrated terminology by Thorp and all the version that developed afterwards including Gaskell's, Young's, Cole's, and so on. It is evident that the terminology drawn from the human body played an essential role in the development of the terminology of Latin letterforms. There are several other inspirations but the research focused on the notion of “resemblance” from Hume's “Principles of Association.” The resemblance was observed using the visual characteristics, shapes, and structure of the different letterforms in the light of human body. Along with the inspiration drawn from the human body, some other possible inspirations are also considered including the physical spaces, and the oral traditions. The observations have provided the understanding that inspiration drawn from the human body is based on visual resemblance, and the human tendency to interpret abstract shapes into familiar shapes.
Part 3 – Evidence in the design of Latin letterforms

In a universal perspective, we have created the establishments all around us for ourselves. The establishments have been deliberately, and often instinctively designed from the rudiments of basic human needs. Commonly, every design emerges from the basis geometric shapes, and universal design principles. The design of the Latin letterforms is no exception; the contemporary type designers typically use various grids and many other tools to find the right balance of aesthetics, and legibility of the typeface. A design mostly aims to resolve a problem for its users. Even though Human-centered design is a fairly new discipline but design has been human-centric from the beginning and as a result of that humans have been fashioning creations influenced by themselves, and others around them. There are signs that suggest that the design of the human body influenced the design of Latin letterforms.

The influence of one design to another may come from various sources but to be able to find parallels between two, one must start from the basics. As mentioned earlier that commonly all designs surface from the basic geometric shapes. Similar origins were observed in the both subjects, the Latin letterforms, and the human body, were observed in the previous parts of this study. Mark Verstockt in Genesis of a Form asserts that, “both the Greek and Roman alphabets are founded and structured on the basic, elementary forms.” In another instance, Philip Meggs on Capitalis Monumentalis writes that, “the simple geometric lines of the Capitalis Monumentalis (Monumental Capitals) were drawn in thick and thin strokes, with organically unified straight and curved lines.” He further adds that, “each letterform was designed to become…a Roman inscription became a sequence of linear geometric forms adapted from the square, triangle, and circle.” Both Verstockt and Meggs are observed elaborating on the presence of geometry, and shapes during the discussion on the letterforms. Generally, when an individual writes employing Latin letterforms, visibility of the basic geometric shapes in the different parts of the Latin letterforms is evidently noticeable. The counter space of letter A creates a triangle, letter O creates a circle or an oval, Letter E creates two stacked rectangles, letter H creates two stacked squares, letter V creates an inverted rectangle, and so on. Theses instances elucidate the idea probability that there is geometry embedded in all different types of writing systems. Verstockt believed, “It is as if man himself, aware of the significance of his conquest of
Figure 59 Clay tokens in the basic geometric forms.
geometry, had channeled this awareness into semantic systems of communication.” Verstockt’s notion is validated with the support of the examples aforementioned.

In support of this argument, a widely accepted theory on genesis of writing, which was discussed earlier, also supports the notion that geometry has been a vital part of the written communication from the beginning. The theory states that the clay tokens are the beginning of the written communication, which validates this argument as clay tokens also emerged from the basic geometric shapes (fig. 59). The shapes gradually progressed from geometric to further naturalistic forms, and in the subsequent stages of their development, the signs of representation of human body started becoming obvious as substantiated by the instances provided previously in this study.

In comparison, one can also notice the supporting instances in the pictographic theory. This illustrated Sumerian pictogram from 5000 BC. is the representation of human ears (fig. 60). It is evident that this pictogram comprises of particularly basic geometric shapes that are similar to the shapes depicted by the clay tokens in an instance discussed formerly. One can also notice that the representation of human ears in the Sumerian writing system retains an highly abstract visual style but at the same time it includes various characteristics including symmetry, portal of human ears in pairs, and so on. This simplified graphic nature of this pictogram also suggests the employment of the notion originating from Gestalt’s Principles of Perception. According to one of the principles, it is a human a tendency to portray complex pictures into simple.
Further comparing the Sumerian pictogram to the modern Latin letterforms, the similarities in the appearance of both are obvious. The modern Latin letterforms also demonstrate the usage of geometry and basic design shape in their origins, which were discussed in the previous parts of this study. Placing the modern Latin letterforms next to the Sumerian pictogram from 5000 BC. bring them into a unique light (fig. 61). It is obvious that the letter A bares stark resemble to the Sumerian pictogram in terms of shape, and the abstraction level of the visual style. It shows that perhaps the ideas of visual representation and stylization that humans employ to represent a sound, or a subject have remained similar.

On the contrary to the aforementioned argument, written communication includes several aspects that do not align directly with the idea of basic geometry’s manifestation in various steps regarding the progression of writing. The further developed stages of written communication include the practice of hand lettering, and calligraphy, which are still practiced by various professionals in the modern world. The ideas of geometry may not be obvious in the first glance but when one looks closely at the practice of calligraphy and hand lettering, both demonstrates the involvement of geometry. In calligraphy, often the calligraphers begin their practice with guidance lines or geometric grids drawn onto the surface. After they have practiced for several years, calligraphers become mindful of the grids,
which allows them to not require a grid to aid their process, however, the grids stay in their works embedded in an invisible manner. Same approach can be witnessed in the practice of hand lettering. Even when geometry, basic shapes, and grids are not visible in the first glance in many design practices, the closer observation often reveals them.

Another manner to approach design, geometry, and basic shapes employed in the design of letterforms is by observing it in the light of human body, and behavior. Since design is human-centric, it is possible that the idea of employing geometry along with basic shapes in the practice of design is drawn from the human body, and behavior. A celebrated name in the field of art, design and science, Da Vinci thought that, “the ancients called man lesser world, and certainly the use of this name is well bestowed, because his body is an analog for the whole world.” Similar notion is notice in Francesco’s opinions; he believed that, “all the arts and all the world’s rules are derived from a well-composed and proportioned human body.” These ideas appear to have translated in various manners and are visible when one notices the everyday objects, and our interaction with those objects. For instance, in our bedroom; the shape of our bed and the way we lay on it; has geometric implications, the shape of a table; the positioning of our body by the table is a similar example that represents the relationship of human body, various products, and the geometry. Our body has informed almost every designed object that surrounds us; It is possible for a logical mind to think that similar influences may have informed the design of the modern Latin letterforms.

Supporting the argument, one principle in Gestalt’s Principles of Perception states that it is human tendency to translate unfamiliar objects into simple, which supports the notion of humans designing everything starting with the simple geometric shapes. This idea has been already observed in various developmental steps of written communication including, the theory on clay tokens, the pictographic theory, and even in the modern Latin letterforms. Additionally, in the previous parts of this research, it was established that the human body has influenced just not the shape of letterforms but also the terminology employed in the field for typography. Furthermore, Geoffroy Tory in his book Champ Fleury explored the relationships between basic shapes, human body, and Latin letterforms. His studies, which were discussed earlier, also support this argument as in his study, the human body and the letterforms are investigated employing a 10-point grid in
his studies, and the grid helps break down the subjects into simpler, and further understandable shapes. A modern interpretation of Geoffroy Tory’s idea providing an opposite perspective comes from the photographer John Kane in his book *The Human Alphabet.* Kane photographed the dancers from Pilobolus Dance Theatre to replicate the shape of the alphabet; the dancers contorted their bodies, and positioned themselves in order to create the entire set of English alphabet, which Kane has presented in his book (fig. 62). Kane’s book portrays the human body and contorts it into a familiar abstract symbols that we know as alphabets but at the same time, it also demonstrates the notion that the humans, even when the shapes are simplistic, see the things around them in their own image and simplified shapes.

To further explore the argument, various cases of literal relationship of the human body, and letterforms can be observed in common practices of our daily lives. One of the occasions demonstrating the literal use of the human body, and the letterforms is the sign language. Generally, in this manner of communication an individual often employs the movement of the body parts to create gestures using hands, fingers, arms, and facial expression to express an idea, or a message. The individual often routines these body movements to represent an alphabet using his hands, and fingers (fig. 63).

Persuasively, it is evident that that there are direct influences drawn from the human body and applied to the general design of the Latin letterforms, however, not all the inspirations have helped the human-centric aspect of our modern written communication. As discussed earlier, in the past, people used various tools for written communication that employed their
Figure 62 Contorted human bodies forming the shapes of the English alphabet in The Human Alphabet by John Kane.
Figure 63 Various gestures demonstrated in the American Sign Language.

‘The woman forgot the purse.’ The sequence of signs ‘woman – forget – purse’ is used as a statement.

‘Did the woman forget the purse?’ The same sign sequence, but with a forward movement of head and shoulders and eyebrows raised.

‘The woman who forgot the purse . . . ’ The relative clause is indicated by raising the brow and upper lip and tilting the head back.

American Sign Language.
several capabilities, and did not limit them to one aspect of communication. In a talk, *The Humane Representation of a Thought* by Brett Victor asserts that, “We have invented media that severely restrain our range of intellectual experience, of all the many capabilities that we have, all the many ways of thinking that we have, we have constrained ourselves to a tiny subset, we are not allowed to use our full intellect.” The progression of communication has narrowed us to limited medium that is, digital or print, where we practice only few capabilities out of many for written communication. To explain the full scope of our potential, he explains three modes of understanding. In the first mode of understanding, he explains that humans have five sensory channels namely; Visual, aural, tactile, and kinesthetic, spatial. In the second mode of understanding he cited the theory of Jerome Bruner from his book *Toward a Theory of Instruction* from 1966. In this theory, Victor cited Bruner and explained, “the action based, image based, and the language based understandings.” The third mode of understanding that Victor presented came from Howard Gardner. In 1983, *Gardner in Frames of Mind: The Theory of Multiple Intelligences* discussed the third mode of understanding that comprises of Visual, Verbal, Logical, Musical, Bodily, Inter-personal, Intrapersonal, and Natural. Observing the explained theories, it is evident that we are currently not utilizing our innate extensive range of competences in our modern method of written communication because of the embedded limitations in our choice of mediums, which most commonly are print, and digital.

In the future, aforementioned problem may be solved by establishing a dynamic medium that allows us to include a variety of modes of understanding, and intellectual experience in our manner of communication. The design industry is evolving drastically with the invention of new technologies, hence, providing added flexibility for the development of a dynamic medium, which may support our manner of written communication. The advancement in the technology industry are already having a drastic impact on the digital medium. On digital services, the users are not restricted to reading and writing anymore; they often have the freedom to utilize various manners in their communication including voice recording, video making, photography, and quick doodles on their screens to convey, or record a message. Variety of these digital services and social media platforms combine the videos, images, and sounds with a layer of augmented reality elements. For instance, Snapchat, Facebook, and Instagram provide various filters to their users, where in order to activate the filter, they have to perform physical actions including a nod, an eyebrow raise, or closing the eyes to name a few. However, these options
provided in the digital platforms are only supporting the conversation to enhance its context similar to case of Egyptian writing system, where visual determinatives, were employed to support the communication. In all these cases, it is obvious that these digital platforms are offering the flexibility to improve our manner of written communication by providing the users a less restricted medium.

Supporting the argument, the idea of a dynamic medium is also visibly explored in various conversational user interfaces, and chat bots. Several digital services including the airlines, e-commerce, and so on, are offering assistance to their users through chat bots, it allows the digital services to provide a better experience to their users. This idea of chat bots is not only proving assistance to its users but also allowing them to have flexibility in their choice of communication platforms. The users often decide how they would like to be assisted, and the platforms most suited for them, those platforms make their overall communication experience further dynamic. It is important to note that these chat bots are designed to provide an experience that is close to the real the human interactions, it further substantiates the argument of humans seeing everything in their own reflection, which was discussed earlier. Another instance exploring this ideas is noticed in the home assistance products such as Google Home, where the phone, television, and everything synced to the assistance device becomes a network, hence, creating a range of dynamic medium that allows communicating in an efficient manner.

However, even in this case, the flexibility of the digital platforms is enabling a slightly dynamic medium for the communication but at the same time, it is essential to note that it’s only a supporting element, and not the core part of the communication. It is evident that currently there are explorations that are improving the medium to advance it into a further dynamic medium, however, the implementations are not mainly focused on written communication.

Finally, this part of the study substantiates the notion that human body has informed the design of the written communication, and Latin letterforms. However, it is also established based on the theories presented by Bret Victor that the current manner of written communication is lacking the human-centric approach as we have restricted ourselves to a non-dynamic medium. According to Victor, not employing our full range of capabilities to communicate is “inhumane,” and “wasteful.” There are various explorations currently taking place including machine learning, artificial intelligence, deep learning, augmented reality, virtual reality and so on, which are introducing the possibilities of having a fully dynamic medium but it is not focused
on the written communication. The notion of furthering the design of written communication can be explored, and taken forward in the light of the theories, influences, and human-centric aspects discussed in this study.
Conclusion

The methods of written communication have gone through years of development under various time periods, cultures, and societies of the former human lives. Looking at the history, the development process of writing is rich, and full of variation. The various types of methods found in written communication carry their own individual characteristics. In many cases, one method of writing informed the later stages, which were then further adapted by societies that came afterwards. However, one element that is visibly evident in various stages of development of written communication is the repeated presence of inspirations drawn from the human body. This thesis aimed to study whether the human body has inspired the various stages of written communication that are noticeable in the development of Latin letterforms.

To find the answer to the main research question, the study was divided into three parts. The first part comprised of the several stages of the advancement of writing to discover the inspirations drawn from human body in a visual forms. The second part observed the various manners in which the terminology employed for the human body parts inspired the development of the terminology, and the nomenclature of Latin letterforms. The last part of the research dealt with the clues alluding to the design of the human body having influenced the design of Latin letterforms.

After the observations made in the first part of the study, the evidence points to the answer that the human body has significantly inspired the various stages of written communication, and it is reflected in Latin letterforms. The study reached this conclusion after observing the constant presence of the human body in several stages of the development of writing. The several stages include the myths, the legends and stories, the pictographic theory, the generally accepted notion that clay tokens were the first step towards written communication, and the progression of Latin letterforms. However, the scope of this research did not allow for consideration all of the known steps in the advancements of written communication. The signs that the human body inspired the written communication are evident in the modern world in many forms including iconography in wayfinding design, and emojis to name a few.
The second part of the study provided the observation that the terminology employed to describe the human body parts inspired the terminology of Latin letterforms. The first known terminology assigned to Latin letterforms by Jospeh Moxon contained terms including “the footing” but Moxon provided no illustrations. The first establishment of illustrated terminology came from Joseph Thorp and it included terminology such as “head,” “foot,” and “ear.” Subsequently, the other version that came afterwards comprised of additional terms originating from human body, for instance, eye for letter E, spine for letter S, shoulder for letter N, and so on. However, there were inspirations that came from other aspects inducing physical spaces, oral traditions, and other languages. Supporting Shaw’s observation, it was also evident that the terminology of letterforms was not considered important until the eighties; the shift from learning on the job to learning from a literary source is also observed. Finally, the evidence shows that the terminology of Latin letterforms acquired several terms that are employed commonly for human body and this pattern is noticeable in the terminology of Latin letterforms even today.

The last part of the study validates the suggestion that the design of the human body influenced the design of Latin letterforms but in doing so, it limited the mankind’s full emotive and, functionate potential. In the course of this part of the research, the links between the human body and geometry were established. Afterwards, the relations between the geometry and the design of Latin letterforms were observed. After analyzing both of the subjects individually, the human body and Latin letterforms were studied together to draw possible overlaps and influences. The observations made and results shown substantiated that there is geometry embedded in the design of the human body, which in turn had influenced the various development stages of writing. The limitations of the human body to move in a certain way influenced the tools that were designed for writing and the means used to reproduce that writing. The limitations our bodies imposed led to advancement in the tools of writing and their design in order to get better performance, and increase their ease of use. This further led to humans becoming limited to certain mediums, namely, paper and digital screens; mediums that do not allow humans their full range of capabilities and modes of understanding. This optimization of a limiting or, as per Bret Victor “inhumane” expressive method and medium, is what has limited human potential.

In the light of all the parts of this study, the observations presented the evidence
that the human body has inspired the written communication and those inspirations are reflected in the modern Latin letterforms. However, the advancements in the design of the various stages of written communication failed to be fully human-centric. One of the biggest steps in the history of communication was the invention of phonetic alphabets. Since then, no major advancements have been seen in the development of writing. This thesis has drawn parallels between the human body and written communication so that the potential to move towards a new step in writing can be explored in the future. The ideas presented in this thesis are only the initial step towards establishing a new dynamic medium and a form of written communication that enables humans to use their full mode of understanding, and capabilities.

From a wider design perspective, the same ideas of enabling humans to use their full range of capabilities can be explored in various other design disciplines. In user experience design, the digital screen limits users to mainly visual feedback with minute tactile capabilities. Similarly, in architecture, the main focus is commonly on the spatial aspects of the space being designed around. Most design disciplines deal with mainly one or two human capabilities but there is an opportunity for designers to interpret the various modes of understanding presented in this thesis to explore new directions in their disciplines. Building on the ideas presented in this study, the designers may find a method for creating even further human-centric designs that do not limit their users to a certain human capability.
List of Figures


Figure 6. I. J. Gelb, *A study of writing*, Revised Edition (Chicago, University of Chicago press, 1963), p. XI.


Figure 12. Denise Schmandt-Besserat, *How Writing Came About* (Austin, University of Texas Press, 1997), p. 16.


Figure 18. Denise Schmandt-Besserat, *How Writing Came About* (Austin, University of Texas Press, 1997), p. 50.

Figure 19. Denise Schmandt-Besserat, *How Writing Came About* (Austin, University of Texas Press, 1997), p. 58.


Figure 22. Denise Schmandt-Besserat, *How Writing Came About* (Austin, University of Texas Press, 1997), p. 60.


Figure 27. Andrew Robinson, *The Story of Writing: Alphabets, Hieroglyphics, and Pictograms*


**Figure 30.** Edward Clodd, *The Story of The Alphabet* (United States: D. Appleton and Company, 1912), p. 130.

**Figure 31.** Edward Clodd, *The Story of The Alphabet* (United States: D. Appleton and Company, 1912), p. 199.

**Figure 32.** Joseph Thorp, *Towards a nomenclature for Letterforms* (The Monotype Recorder, April–May 1931 issue).


**Figure 34.** Doyal Young, *Logotypes & Letterforms: Handlettered Logotypes and Typographic Considerations* (New York: Design Press, 1993), p. xvii.


**Figure 38.** Mark Verstockt, *The Genesis of a Form*, First UK Edition (London: Muller, Blond & White, 1987), p. 123.


**Figure 40.** Alberecht Dürer, *Unterweysung Der Messung* (Munich, Süddeutsche Monatsheft,
Figure 41. Luca Pacioli, *Divina Proportione* (Venetiis: A. Paganius Paganinus characteribus elegantissimis accuratissime imprimebat, 1509). p. 29.

Figure 42. Albrecht Dürer, *Vier Bücher von Menschlicher Proportion* (Hieronymus Andreae Form cutter, 1528), p. Diii.


Figure 44. Geoffroy Tory, *Champ Fleury : Au Quel Est Contenu Lart & Cience De La Deue & Vraye Proportion Des Lettres Attiques ... Selon e Corps & Visage Humain* (Paris, Geoffroy Tory and Giles Gourmont, 1529), pp. El–EIV.

Figure 45. Author’s own.


Figure 48. Alexander Nesbitt, *The History and Techniques of Lettering* (Massachusetts: Courier Corporation, 1998), p.3.

Figure 49. Author’s own.


Figure 51. Alexander Nesbitt, *The History and Techniques of Lettering* (Massachusetts: Courier Corporation, 1998), p.3.


Figure 53. Author’s own.
Figure 54. Author’s own.

Figure 55. Author’s own.

Figure 56. Author’s own.

Figure 57. Author’s own.

Figure 58. Author’s own.

Figure 59. Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 19.

Figure 60. Alexander Nesbitt, The History and Techniques of Lettering (Massachusetts: Courier Corporation, 1998), p. 3.

Figure 61. Author’s own.


Notes


5 Ibid.

6 Ibid.

7 Ibid., p.168.

8 Ibid., p.169.

9 Ibid., p.169.


16 Geza Komorczy, "Zur Atiologie der Schrift Erfindung im Enmerkar Epos," Altorientalische
Exploring Letterforms


22 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 4.

23 John Wilkins, Essay towards a Real Character and a Philosophical Language (London: Gellibrand, 1668), p.11.

24 William Warburton, Divine Legation of Moses (London: Fletcher Gyles, 1738), bk. 4, pp. 67, 70-71, 81, 139.

25 Ibid.

26 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 4.

27 Ibid.


30 Geoffrey Sampson, Writing Systems (Stanford, California: Stanford University Press, 1985),
pp. 46 - 47.


34 Ibid., p. 190.


36 Ibid., p. 191.

37 Ibid., p. XI


41 Ibid.

42 Ibid.

43 Ibid.

44 Ibid., p. 56.

45 Ibid., p. 56.

46 Ibid., p. 56.

47 Ibid., p. 53.
48 Ibid., p. 56.

49 Ibid., p. 56.

50 Ibid., p. 54.

51 Ibid., p. 54.

52 Ibid., p. 54.

53 Ibid., p. 54.

54 Ibid., p. 54.


57 Ibid.


59 Ibid.


62 Ibid.,


64 Ibid.

65 Adam Falkenstein, *Archaische Texte aus Uruk, Ausgrabungen der deutschen*

66 Ibid.

67 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 5.


69 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 5.


71 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 5.


74 Ibid.

75 Ibid.

76 Ibid.

77 Ibid.

78 Ibid.

79 Ibid.

80 Ibid.
81 Ibid.

82 Ibid.

83 Ibid.


86 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 16.

87 Ibid.

88 Ibid.

89 Ibid., p. 19.

90 Ibid., p. 19.


93 Denise Schmandt-Besserat, How Writing Came About (Austin, University of Texas Press, 1997), p. 50.

94 Ibid., p. 58.


97 Ibid., p. 60.


100 Ibid., p. 104.


104 Ibid.

105 Ibid.


107 Ibid., p. 12.


112 Ibid.

113 Ibid.

114 Ibid.

115 Ibid.


134 Andrew Robinson, *The Story of Writing: Alphabets, Hieroglyphics, and Pictograms* (London,
Notes


136 Ibid.

137 Ibid.


141 Ibid., p. 199.

142 Ibid., p. 199.


144 Ibid., p. 184.

145 Ibid., p. 198.


149 Ibid., p. 126 -127.
150 Ibid., p. 126-127.


157 Ibid.

158 Ibid.

159 Ibid.


163 J. Ben Lieberman, *Types of Typefaces and How to Recognize Them* (New York: Sterling


167 Ibid.

168 Ibid.


177 Ibid.


185 Ibid.


195 Ibid.


199 Ibid.


201 Ibid., p. 41.

202 Ibid., p. 39.

203 Joseph Moxon, *Mechanick Exercises: Or, The Doctrine of Handyworks Applied to the Art of*


205 Ibid.


209 John Southward, Practical Printing (J.M. Powell & Son., 1884). p.11.


212 Ibid.


214 Ibid.

215 Ibid., p.123.

216 Ibid., p.123.

217 Ibid., p.123.


219 Ibid., p. 31.

220 Mark Verstockt, The Genesis of a Form, First UK Edition (London: Muller, Blond & White,


222 Ibid., p. 72.


226 Ibid., p. 115.

227 Ibid., p. 115.

228 Ibid., p. 116.


230 Ibid., p. 149.


233 Ibid., p. 116.

234 Ibid., p. 117.

235 Ibid., p. 117.

236 Ibid., p. 117.
237 Ibid., p. 117.

238 Ibid., p. 117.


242 Ibid.


244 Ibid., p. 32.

245 Ibid., p. 32.


248 Ibid., p. 18.

249 Ibid., p. 18.


251 Ibid., p. 31.

252 Ibid., p. 31.

253 Ibid., p. 31.
254 Ibid., p. 31.

255 Ibid., p. 72.


259 Ibid., p. 75.


261 Ibid.


263 Ibid.

264 Ibid.

265 Ibid.


270 Ibid.
271 Ibid.


275 Ibid.


280 Ibid.


284 Ibid.


286 Ibid.
287 Ibid.

288 Ibid., p. 44.


291 Ibid.

292 Ibid.


294 Ibid., pp. 41-51.


Exploring Letterforms


305 Ibid.


309 Ibid.


312 Ibid.


315 Ibid.

316 Ibid., p.41.


321 Ibid., p. 31.

322 Ibid.


327 Ibid., p. 149.


332 Ibid.

333 Ibid.
334 Ibid.
335 Ibid.
336 Ibid.
Bibliography


18. Gaskell, Philip. *A Nomenclature for Letter-Forms of Roman Type*. Series 4: vol. XXIX, no. 1,
The Library, 1974.


38. Mayer Burstein, Stanley. *The Babylonica of Berossus, Sources from the Ancient Near East,*


Appendices

Glossary

**Counter:** Any interior shape of a glyph. It can be completely enclosed by strokes, such as the eye of an "e," or have an opening to the exterior, such as the lower counter of an "e."

**Font:** A collection of glyphs. The font is the delivery mechanism, represented by a digital file or a set of metal pieces, for a typeface.

**Letterform:** the visual representation of an abstract shape known as a letter of the alphabet, which every writing system contains.

**Sans serif:** A character or typeface without serifs.

**Serif:** A small mark or “foot” at the end of a stroke. Serifs are lighter than their associated strokes.

**Stroke:** An essential line or structural element of a glyph. The term derives from the stroke of a pen.

**Stroke contrast:** The weight difference between light and heavy strokes.

**Typeface:** The design of a set of characters. In simple terms, the typeface is what you see and the font is what you use.

**Visual Style:** appearance that a subject or object posses that differentiates it visually from other counterparts.

**Weight:** The thickness of a stroke. In type design, the geometry of a line (or shape) is usually described using the terminology of weight.
Slides from presentation *The humane representation of Thought* by Bret Victor
This research forms foundations that may activate further research to explore a unique direction for the advancement of the design of Latin letterforms, and possibly its application to the scripts employed in other languages. It is commonly established that one of the biggest steps in the history of communication was the invention of phonetic alphabets, where an abstract shape was assigned a sound. Since then, no major advancements have transpired in the field of written communication. This study has explored inspirations and links between several developmental stages of written communication, and the human body to find examples of human-centric aspects in the design of written communication. Furthermore, this has explored the current design of Latin letterforms to find a possible direction that may be further human-centric. The found direction may enable additional research, and also encourage the possible applications of the researched direction.