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Numerical Creativity in Digital Discourse From Pager Codes to Tik Tok Trends

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الابداع الرقمي في الخطاب الرقمي من الرموز الرقمية الى توجهات تيك توك

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الجامعة: الموصل كلية الاداب قسم اللغة الانكليزية

Abstract:

This study sheds light on the historical and linguistic evolution of the numerical representation, tracing its development from innovative counting practices, methods and formal mathematical systems to contemporary semiotic functions in digital communication. Based on etymological, historical and semiotic perspectives, the research first reviews the origins of number systems in Mesopotamia, Hindu - Arabic, and Roman traditions, examining the foundation of these numbers and how they are evolved from those practical tools. The study analyzes the cultural and semantic meaning that is associated with numbers across societies, explaining how they acquire ideological, symbolic and aesthetic significance that goes far beyond their quantitative value. The paper further explores the reuse of numbers in mediated communication, focusing on pager codes, text messaging, and contemporary social media platforms like Tik Tok. It argues that numerical substitution and abbreviation practices that are originally driven by technological constraints have persisted and adapted as stylistic and creative resources in modern digital discourse. The findings show that the numerical representation in language represents a continuous evolutionary process where numbers functions as flexible semiotic tools shaped by technological possibilities, cultural traditions and communicative needs. **Keywords:** Numerical representation; Digital discourse; Semiotics; Text messaging; Social media language.

المستخلص: تسلط هذه الدراسة الضوء على التطور التاريخي واللغوي للتمثيل الرقمي، متتبعة تطوره من ممارسات العد المبتكرة والأساليب والأنظمة الرياضية الشكلية إلى الوظائف السيميائية المعاصرة في الاتصال الرقمي. استنادا إلى وجهات نظر اشتقاقية وتاريخية وسيميائية. يستعرض البحث أولا أصول أنظمة الأعداد في بلاد ما بين النهرين والتقاليد الهندوسية والعربية والرومانية، مستعرضة أساس هذه الأرقام وكيف تتطور من تلك الأدوات العملية. تحلل الدراسة المعنى الثقافي والدلالي المرتبط بالأرقام عبر المجتمعات، موضحة كيف تكتسب أهمية أيديولوجية ورمزية وجمالية تتجاوز قيمتها الكمية. تستكشف الورقة أيضا إعادة استخدام الأرقام في التواصل الوسيط، مع التركيز على رموز البيجر، والرسائل النصية، ومنصات التواصل الاجتماعي المعاصرة مثل تيك توك. وتجادل بأن ممارسات الاستبدال العددي والاختصار التي كانت مدفوعة أصلا بالقيود التكنولوجية استمرت وتكيفت كموارد أسلوبية وإبداعية في الخطاب الرقمي الحديث. تظهر النتائج أن التمثيل العددي في اللغة يمثل عملية تطويرية مستمرة حيث تعمل الأرقام كأدوات سيميائية مرنة تتشكل بفعل الإمكانيات التكنولوجية والتقاليد الثقافية والاحتياجات التواصلية. **الكلمات المفتاحية:** التمثيل العددي، الخطاب الرقمي، السيميائيات، الرسائل النصية، لغة وسائل التواصل الاجتماعي

1- Introduction:

This life's first native source (Spenser)

O where is the spell that once hung on thy numbers? Arise in the beauty. (Traditional Irish Song)

The king was in his counting house, counting out his money. (Traditional Nursery Rhyme)

Numbers contribute in every aspect of human life. Starting from the first moment of waking up when persons consult clocks and calendars, to the daily activities of trading, calculation and measurements, digital symbols shape one's perception of time, place, and value. Far from being as a mere mathematical or neutral unit, numbers serve as semiotic and linguistic sources via which meaning is constructed, discussed and communicated. Counting is one of the earliest human cognitive practices, in other words: to count is not just to quantify, but also to order, name and perceive reality through language. Historically, numbers have arisen from practical needs, counting things, determining things, counting events, collective life but have gradually evolved into abstract systems capable of expressing complex relationships, mathematical traditions from the Mesopotamia, Greek, Indian, and Arabic civilizations show that numerical systems evolved along with linguistic, cultural and philosophical frameworks. As a result, the figures have acquired symbolic, aesthetic, and ideological dimensions as evidenced in religious texts, architectural design, folklore and poetry. Literary and cultural references from children rhymes to classic poetry mirror this durable conception of numbers as carriers of rhythm, balance and meaning rather than being mere quantities. Recently contexts, this semiotic flexibility is evident in digital communication. The advent of technologies such as pagers, short message (SMS) services, and social media platforms has encouraged the reuse of numbers as linguistic alternatives, emotional signs, and stylistic tools. The early pager system, which were restricted by digital input, generated common digital codes in order to convey intricate messages. Texting combined numbers into alphabetical text via voice substitution and abbreviation, producing hybrids that prioritize economy and speed. Modern platforms like Tik Tok continue on this route with numbers appearing in translations, hashtags, and trends not as technical needs, but as cultural and meaningful sources that are included in multimedia discourses. Despite the increasing volume of research on digital language practices, current studies tend to address numerical use individually, focusing on either mathematical systems, symbolic numerology, or specific forms of numerical abbreviations such as text abbreviations. What still unexplored is the temporal continuum that connects historical digital systems, early digital constraints, and modern platform-based communication. Particularly, the role of numbers as a semiotic tool adopted across successive technological environments has not been adequately examined within a single integrated linguistic framework. The study addresses this gap through tracing the evolution of numerical representation the early counting activities, and formal numerical system to its recent semiotic and linguistic functions of mediated communication. It aims to show that numerical use in digital discourse is not peripheral or abnormal phenomenon but is part of a broader historical continuum in which numbers change their role frequently responding to the communicative needs and technological potential. By incorporating historical, semantic, linguistic and digital perspectives, the study contributes to a more comprehensive understanding of how numbers act as flexible sources of meaning making in human communication.

2- Literature Review

2.1 Definition of Numbers

Numbers are regarding as fundamental linguistic and expressive tools used to represent quantity, value and order. According to *The Oxford Advanced Learner's Dictionary* (OLAD, 2010), a number is a "word or symbol that indicates quantity" (p.538), as evidenced by Roman Numerals. Related terms that include *numerate*, i.e., the capability to understand and work with basic mathematics, *numerically*, which refers to anything that is expressed in numbers or ordered in numerical arrangement, which means assigning a number to something as in "The houses on the street aren't numbered."

Numbers may also appear with suffixes to form the ordinal numbers such as 2, 3 and 4.

A *numeral* refers specifically to the letters that represent numbers, as opposed to words that symbolize the same quantities.

For example, the line plate might display the numbers and letters together: V, VI, XLI. In Arabic notation, a figure emphasizes the character itself e.g., "write the numbers for figures wherever possible to save space" or "his salary went into five figures." A *digit* is a character in Arabic notation that includes zero, while an arithmetic value refers to an integer (whole number) that doesn't include fractions. The concept of arithmetical skill stands for the ability to read numbers that are expressed in words. Pollman and Christopher (1976) make a distinguish between words like *one*, *two*, three and figures such as 1,2,3 to identify them both as numbers and they note successfully the practical usage of them in context such as cinema seating: "the seats in the cinema aren't numbered" (p.145).

Roman numerals (I, II, III...) are categorized as numbers whereas the adjective *numerous* describes the very large quantity. In the same way, Fitzgerald defines *number* as a word or symbol that indicates a quantity, for example number “7” represents seven things (p.14).

Merriam – Webster also notes that terms such as digit, numeral, number commonly indicate characters by which arithmetic values are designated. A *number* may also refer to the character itself or to the related corresponding word as in the word “forty- five” or its corresponding figure “45” (p.1550). Distinction between these definitional terms is essential for the contemporary linguistic and semiotic functions and transitions especially, in digital communication.

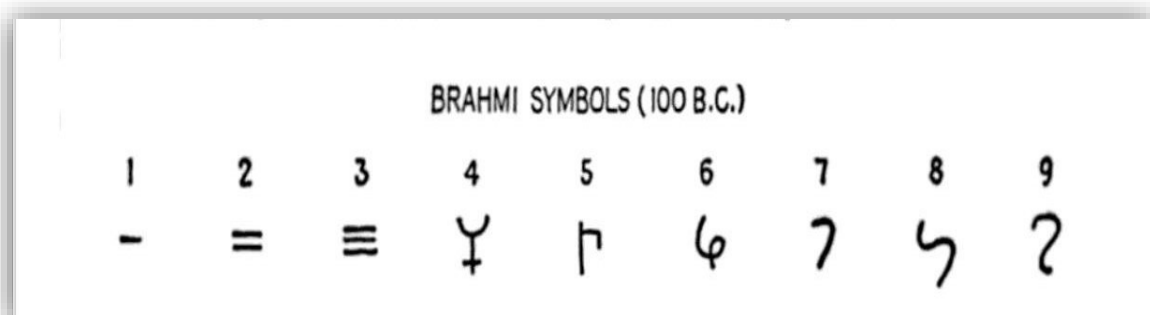
2.2 Etymology and History of Numbers

The term number has a very long history, that was traced back through many European languages. According to Barnhart (1995), the English word “number” emerged around the 14th century, that was borrowed from the Anglo – French *noumbre* and old French *nombre* and ultimately derived from Latin *numerus* to mean “a number or quantity” while the form of the verb “to number” that appeared slightly later, originated from the old French *nomber* and Latin *numerare* which means “to count”. In the same way, other related terms evolved over centuries: *numeral* (adjective), before 1398, to describe something expressing number, the verb *numerate* in 1721, that is used for counting and numbering, and the (adjective) *numerical* in 1628, to describe anything expressed in numbers (Barnhart, 1995; Fitzgerald, 2006). The linguistic development of numbers highlights how these numbers developed in parallel with their symbolic and practical usage.

Numerical system date back thousands of years. Tabak (2004) points out that Mesopotamian centered around Tigris and Euphrates rivers, improve one of the world’s earliest written languages and a sophisticated mathematical system over 5000 years ago.

Clay tables exposes records of laws, poetry, stories, practices and astronomical calculations showing that numbers were deeply rooted in everyday activities and the cultural life.

A distinctive feature of Mesopotamian mathematics is the basic 60 system which its effect is still presented today, in our section of hours that is divided to 60 minutes and minute to 60 seconds. Unlike the Roman and Egyptian who depend on context in order to interpret symbols, Mesopotamian used positional coding and developed the fractional systems that resemble modern decimals. However, the concept of zero didn’t appear much later in India. Numerical system that we use today the Hindu – Arabic numerals that was originated in was originated in India and transmitted to Europe through the Arab scientists. The early Hindu numerals used 9 basic symbols from 1 to 9 and used the zero-positional system, probably appearing around 600 – 800 CE. By the ninth century, this system had reached Baghdad where mathematicians Muhammad ibn Musa al Khwarizmi developed its use through works like *Al- Jabr Wal- Muqabala*, that eventually influenced European mathematics (Ore, 1948). The earlier counting methods such as signs and notches, also played an essential role, leaving traces in systems, such as the Roman numerals that are still persist in symbolic context today. Recent studies also show that many of the graphic forms of modern Hindu – Arabic numerals traced back to the tradition of Brahmi. Ore (1984, p.19) argues that the nine symbols used Brahmi inscription around (100 B.C), represent one of the earliest coded number systems whose forms later influenced the development of modern numerals. These symbols reflect an important transition as the size of symbols began to shift from purely – count base signs to more abstract symbolic forms (see Figure 1). This historical trajectory supports a view that number system did not appear suddenly, but advanced gradually through adaptation, contact and the cultural transmission between ancient civilization Mesopotamia, India and later the Arabic scholarly world. **Figure 1.** Brahmi numeral symbols (100 B.C.)



The historical and etymological perspective highlights the long evolution of numbers from linguistic origins to practical arithmetic. From practical clay to modern spot notation and paved the way for understanding their adaptive and expressive role in contemporary digital communication.

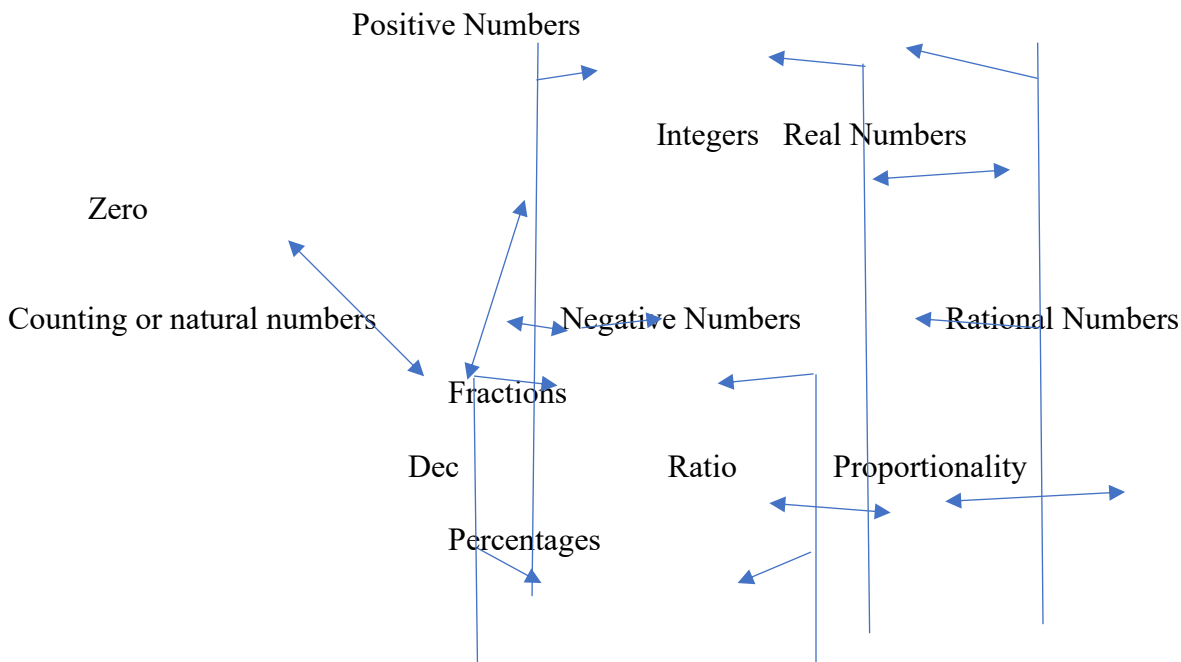
3- The progressive Development of Numerical Systems

According to Thurston (1965), sets of numbers are understood as overlapping or consolidated systems, each successive set integrates the previous one, for example whole numbers form parts of integers, and these integers belong to rational numbers that are contained within the real numbers, and real numbers are extend further to complex numbers. In this way, each broader system accommodates the previous one, creating a hierarchal structure of number system (Thurston, 1956, p.22).

Frobisher et. al., states that the earliest counting systems, what are known as *counting numbers*, or *natural numbers* arise from the need for human process: recording events, counting possessions, or keeping track of collective affairs. The concept of numbers did not develop until later into the abstract systems that are familiar in modern mathematics. As societies become more complex their numerical needs have increased. The introduction of zero (0), as attributed to the early Indian mathematicians allowed for positional number systems.

The necessity for dividing quantities and resources led to the development of fractions. Cases where subtraction resulted in values lower than the initial quantity demands negative numbers. Progressively, these various prerequisites necessitated the expansion of numerical framework far beyond just counting, to include integers, negative integers, real numbers, fractions, real numbers and finally complex numbers. This hierarchal relation between numerical system can be visually represented (see Figure 2), shows how each broader category encompasses the previous one, from the natural numbers at the base to the complex numbers at the top. This representation proves that what began as a simple mechanism for counting material things eventually turned into a vast and abstract construction that is capable of expressing a very wide range of mathematical and realistic phenomena.

Figure (2): The relationships between Symbols



The concept of real number dates back to the Greek geometry where mathematicians encountered quantities that could not be represented as a simple ratio. Later on, advances in calculations reinforced the need for a system large enough to encompass all possible solutions for equations. This urgent need leads eventually mathematician to recognize quantities like $\sqrt{-1}$, that has no value within real numbers. To address this gap, they present what were first seen as (unreal numbers), and now known as (complex number) granting them a legitimate role in mathematics. For learners, especially those at elementary school, it is necessary to constantly clarify how these

different number systems are related to each other, as they progress in new mathematical idea. Children get benefit from these attributes and distinctions within these natural numbers, rational numbers, real numbers, rational numbers, integers and complex numbers, hiding these relations create a kind of difficulty that makes learning later more difficult.

Srirarman and Krishnan (2003, p. 54), state that the number system in use today is the Hindu – Arabic system which operates with ten basic symbols: 0,1,2,3,4,5,6,7,8,9, and this structure is also known as a decimal system. Numerals from 1 to 9 are called natural numbers as they originated from the practical term counting, this noun is usually represented by the letter “N”. Adding zero to natural numbers results in expanding these numbers to what are known as whole numbers represented as “W”. Each whole number consists of one or more of the ten digits as is the case with 56, 32 and 714, that are built from the numbers 5,6,3,2,7,1 and 4. In typing large numbers we add numbers using commas, starting from the right. Each group is called a period. In the Indian arithmetic system periods are called by the names of thousands, crores, laks and so forth.

Srirarman and Krishnan (2003, p. 56), note that the Roman system is built on seven basic symbols as is shown in Table 1.

Table 1. Roman Symbols and Their Hindu–Arabic Equivalents

Roman Numbers	I	V	X	L	C	D	M
Hindu Arabic Numbers	1	5	10	50	100	500	1000

These symbols are combined accordingly to simple principles such as addition and subtraction. According to the plural principle, values are added when a smaller number is followed by larger one.

$$\begin{array}{lclcl} \text{I} & + & \text{I} & = & \text{II} & (2), \\ \text{V} & + & \text{I} & = & \text{VI} & (6), \\ \text{X} + \text{X} & = & \text{XX} & (20). \end{array}$$

According to the subtraction principle, a smaller number appear before the larger one as in IV (4), or IX (9). These roles enable Romans to create a complete number system using only seven letters. Thus, the count 1 to 10 will be written as shown in Table 2:

Table 2.

Roman Numbers		1	2	3	4	5	6	7	8	9	10
Hindu Arabic Numbers		I	II	III	IV	V	VI	VII	VIII	IX	X

Fitzgerald (2006, p. 19) explains that Roman numerals are written by the use of Latin alphabet, usually in capital letters, though the lowercase letters also appear. When the horizontal bar appears above the number, its value indicates that the number is multiplied by 1000. Basic examples are included in table 3:

Table.3

17	9	18	19	11	12	20	13	6	7
XVII	IX	XVIII	XIX	XI	XII	XX	XIII	VI	VII

2.3

Ordinal Vs. Cardinal

Frobisher et. al (1999, p.23) explains that term of *cardinality*, refers to the (how many) feature of the whole number. It simply, refers to the number of items within a specific group. By the contrary, the Oxford Advanced Learner's Dictionary (2006, p. 543) defines the *ordinal number* as a number that shows its position in a sequence, such as the first, second or third. Fitzgerald (2006, p. 15), presents the same point, pointing out that ordinal numbers rank or order rather than quantity. OALD (2006, p. 110) describes the cardinal numbers such as 1,2,3 and so forth as the base of counting numbers, highlighting its role in showing quantity. Frobisher et al. (1999, p. 3) add that ordinality highlights the positional nature of integers. In the same way, Tiwari and Singh (1998:14)

assert that the distinction between cardinal and ordinal numerals comes from the mathematical terminology. According to their points of view, numbers like 1, 2 and 3 are cardinal as they quantify the quantity, whereas the first, second and third are ordinals, because they indicate order. It's important to mention that ordinal numbers do not tell as anything about size or proportions. The second - place item may, or may not be the twice the size of the first item. The ordinals specify only the sequence. For instant, the first, second and third can represent 100, 110 and 150, or it can represent 100, 200 and 300. All that can be deduced is that, the second comes after the first, and the third after the second. According to Hargis (2008, p. 35), both types of numbers appear in the English noun phrases as determinants. Ordinal numbers: first, second, third and fourth, in addition to other terms like middle, next and last, show the order and usually follow the specific identifier as:

1.The first ball.

2.Second horse.

3.Third carriage.

Cardinal numbers (one, two, three, etc.), signify quantity in expressions such as:

4.One ball.

5.Two horses.

6.Three chariots.

In some cases, Cardinal and ordinal numbers appear together under the same nominal statement. When this happens, English follows a consistent order:

definite article + ordinal + cardinal + noun.

7.The first five car.

8.The second two trees, and the last two cars.

In such combinations, the ordinal number always comes before the numerical number.

2.4 Semantics and Cultural Dimensions of Number Interpretation

Semantics is a branch of linguistics that is concerned with meaning, and examines how words and expressions convey the traditional meaning of language. As Yule (2006, p.112) points out, semantic analysis focuses on what linguistic forms typically mean within society. In English, numerical forms involve signifiers such as the suffix-ty, which signifies multiples of ten such as *twenty* and *thirty*. These uses have been documented in the slandered reference dictionaries (Dictionary.com, undated; Free Dictionary, undated). Similarly, the suffix- teen refers to numbers from thirteen to nineteen, whereas dictionary entries record their meanings that are related to adolescence, with the adolescent appearing as a given name to describe youth (Dictionary.com, undated). Interpretations of numbers span into symbolic and philosophical domains. Arnauld (2014), explains that during the Renaissance, numbers gained aesthetic and intellectual importance in fields such music, poetry and architecture (p.8). It is noted that number *one* symbolizes basic unity and a potential power because it is the basis of all counting (p.9). Arnauld (2014) also states that number *three* represents the integration of mind, spirit and body and it is associated with creativity and intellectual progress (p.15). In Chinese numerology, number *four* is avoided because its punctuation resembles the word "death", making it culturally unsuccessful (p.18). Arnauld (2014) also describes the symbolic meaning of other numbers: five signifies the human senses and services to others; the sixth is linked to harmony, human ability and beauty; and seven represents the perfection of human nature (pp. 21, 24, 27). Cultural traditions reinforce and expand these semantic associations. Feng (2017, p. 70) points out that in number- oriented cultural practices, "lucky numbers" are particularly preferred in branding. In Western cultures, number seven is usually considered as "unlucky", especially when it coincides with Friday. This belief influences business and architectural practices. Hotels and business often avoid marking floors or rooms with number 13, instead they use alternatives like 12A and 12B. Brand names like 7-UP and 7-11 show this positive association with 7. Similar activities appear in East Asian cultures, where numbers such as 13 or 4 are often avoided in phone numbers, business addresses and license plates. The symbolic power of numbers is also rooted in religious culture. Leder et al. (2002, pp. 194–195), emphasizes the importance of "Seven" in the Islamic tradition, that appears frequently in Quranic verses and the prophetic practice, for example: the seven heavens, the seven rounds between Safa and Marwa, and the seven stones thrown at. Kozuk et al. (2015, p. 153) mentions that this symbolic value dates back to the ancient Sumerian and Babylonian civilizations. Number *Seven* became a symbol of perfection and divine order. In this sense, this number serves as a cultural and spiritual symbol that extends beyond its quantitative value. Together, semantic meaning and the cultural traditions surrounding numbers show that numbers serve not only as mathematical symbols, but as expressive cultural elements that reflect worldviews, beliefs, and the shared

human experiences As text message became the dominant medium of interaction, they gradually replaced more tradition forms of written communication. Humphrys (2005), in his introduction to Cochrane's between you and I: A Little Book of Bad English argues that the prospects for preserving clear, traditional English are slim. Much of the decline is attributed to email and especially to text messages, suggesting that punctuation disappears and grammatical structures abandon at theatrical speed (cited in Wollman, 2008, p, 179). Humphrys reiterated this position in his later essay I Text Messages: How Text Messages Are Destroying Our Language (2007), in which he described dispatchers as "saboteurs" wreaking linguistic destruction similar to Genghis Khan's invasions. In his view, text messages reduce vocabulary, disrupt sentence structure, and ignore punctuation. Baron (2008, p. 199), places text messages as a cultural threat, seeing that email is what replaces tradition messages. Society sacrifices the depth of expression in exchange for a greater quantity. Crystal (2008) provides a more descriptive details, noting that punctuation disappears in text messages largely due to time, cost, effort and space constraints. Abbreviations and contractions are some of the most common stylistic consequences of these restrictions such as:

9 - Thats hw 2 do it for (That is how to do it) or

10 - plzz dont forget 2 vote 4 Qaderi for (Please do not forget to vote for Qaderi) (Ali, et al., 2011).

Another widespread feature in netspeak is the replacement of words or syllables with similar-sounding numbers or letters. Examples include:

11 - c u L8a ("see you later") as well as number-based substitutions such as:

12- gud 9t/n8/98 ("good night"),

13 - He came L8 ("He came late"),

14 - downlod it 4m d net ("download it from the net")

15 - ther r 6t studnts ("there are 60 students")

16 - gr8 ("great")

17 - B4 1 week ("before one week")

18 - me 2 ("me too") and

19 - it iz 4 u ("it is for you") (ibid., p. 6).

In these cases, numbers such as 2,4,6,8 and 9 are used either because they approximate phonetic units or because they serve as a convenient shorthand. Crystal (2008, p. 46) notes that such abbreviations often appear in several versions noting that "tonight" can be appear in the form of tonight, tonyt, tonite, tonit, 2nt, 2night, or 2nite, among others. Electronic communication thrives on this kind of smoothness. The broader linguistic trend that the mentioned examples point to, is that English language continuous to evolve in response to new communication technologies. As in the earlier stages of language, the contemporary shift reflects changes in social practices. Text transfer motivates users to prioritize convenience, and speed, often at the expense of the standard wording and spelling. Ali et al. (2011, p. 8) note that in some structures like those involving replacement of numbers by sounds (ME 2, B4, Gr8, IT iz 4 U) are more prone to replacement and change, whereas forms in which numbers do not directly match pronunciation e.g., (4M D net, 9T) tend to be less stable and less widely adopted. A parallel dynamic can be observed in Tik Tok culture. Despite the fact that this platform relies on audiovisual than text, it relies heavily on compressed symbolic communication such as, hashtags, digital abbreviations, stylistic spellings, truncated comments, and meme- driven abbreviations. Tik Tok just like texting in the early 2000s. prefers speed, rapid spread, and creativity making brevity a practical requirement. In some expressions such as: "grwm" ("get ready with me"), "POV", "FYP", and digitally coded jokes spread as smoothly as Crystal (2008) described textual abbreviation. The basic mechanism is identical, users modify language in order to match the pace and limitations of the medium. This proves that the numerical and phonetic replacement observed in the early text messaging does not disappear but rather morphs into multimedia forms suitable for contemporary platforms. The logic that is used to produce "c u L8r" is now producing built – in shortcuts in the visual memes, very short commentary and audio clips. This continuity proves that strategies of language created via text messages are not isolated features, but rather as part of a large evolutionary pattern in the digital communication, a pattern that extends directly to Tik Tok and another algorithm – driven networks.

2.5 Numerical Encoding Across Communication Technologies

Since the first devices of the early pagers were limited to digital input and display, users developed an innovative numerical system for encoding the linguistic meaning. One approach that involved assigning numbers to individual characters, allowing words to be constructed entirely from numbers; for example, within an alphabet documented in a pager, letters were presented by individual numbers or a group of numbers for example: (A=

6 or 8, B = 8, C = 6, D = 0, E = 3, I = 1, M = 177, W = 111), forming sequences such as 123604 which stands for READY (Pager codes, n.d.). In a parallel way, users of pagers utilized numeric expressions that convey complete messages through common custom rather than literally encoding. Known examples include: 143 for "I love you", 673 for "always and forever" and 823 for "thinking about you" (Hub Pages, n.d.). A wider range of symbols were used to express the routine activities, feelings, and temporal codes such as 41 (call me), 52 (father), 45 (get better), 24 (I'm home), 49 (indication of a problem or accident), and 56 (happy dreams), in addition to the symbols for days of the week like (33 for Wednesday, 44 for Thursday, 55 for Friday and, 77 for Sunday), with some meanings based on visual interpretation, as in 87, which was read upside down meaning "you are late" (FastSlang, n.d.). With the introduction of text messaging, digital usage became included in alphabetic text rather than standing alone, with users routinely replacing words or syllables with numbers that approximate their pronunciation, such as ME 2, B4, Gr8 and L8, forming hybrid written structures that reflect informal and time-efficient communication exercises (Crystal, 2008; Mohammed Ali et. al., 2011). On modern platforms such as Tik Tok, numbers continue appearing in subtitles, hashtags, and short text elements accompanying the audiovisual content, however in contrast with communication via pager or text messaging, these digital forms do not rely on technical restrictions, but rather act as platform-specific stylistic rules that coexist with the visual auditory patterns. Taken together, these examples show that the use of numbers as sources of communication has continued across successive technological environments from calling systems to text messaging and a contemporary social media (SMS), indicating the maintained presence of these digital forms in the medium of communication despite changes in platforms and methods to numerical representation across advanced communication environments. This study traced the development of numerical representation from its earliest mathematical foundations to its contemporary linguistic and semiotic functions in mediated communication contexts. It began with a historical overview of the evolution of number systems, starting from their roots in counting practices and Greek mathematical thought, up to the axiomatization of real and complex numbers, confirming that numbers are not merely quantitative tools but organized symbolic systems. This foundational perspective provided a clearer understanding of how numbers later transformed into resources that could be reused linguistically. The analysis showed that early digital technologies, particularly pagers, represented a crucial turning point in the semiotic life of numbers. Under technical constraints, numbers were repurposed to encode letters, words, emotions, and social actions, leading to the emergence of shared interpretative norms among users. With the advent of short text messages (SMS), numerical usage merged within alphabetic text, producing hybrid forms that balanced phonetic economy and communicative efficiency. As for contemporary platforms like TikTok, this evolutionary trajectory continues, where numbers appear as stylistic, symbolic, and trend-generating resources within multimedia environments, not as a response to technical constraints, but as communicative and cultural choices. Together, these stages reveal that numerical representation in language is not an incidental phenomenon in digital culture but part of a broader historical continuity. Numbers constantly reshape their roles, moving from mathematical abstraction to linguistic symbols, while remaining tied to collective agreement and social practice. This continuity underscores the adaptability of language and highlights numbers as semiotic tools in ongoing evolution, growing and changing in parallel with the transformation of communication technologies, rather than being constrained by a specific medium or historical period.

3. Conclusion

This study traced the development of numerical representation from its earliest mathematical foundations to its contemporary linguistic and semiotic functions in mediated communication contexts. It began with a historical overview of the evolution of number systems, starting from their roots in counting practices and Greek mathematical thought, up to the axiomatization of real and complex numbers, confirming that numbers are not merely quantitative tools but organized symbolic systems. This foundational perspective provided a clearer understanding of how numbers later transformed into resources that could be reused linguistically. The analysis showed that early digital technologies, particularly pagers, represented a crucial turning point in the semiotic life of numbers. Under technical constraints, numbers were repurposed to encode letters, words, emotions, and social actions, leading to the emergence of shared interpretative norms among users. With the advent of short text messages (SMS), numerical usage merged within alphabetic text, producing hybrid forms that balanced phonetic economy and communicative efficiency. As for contemporary platforms like TikTok, this evolutionary trajectory continues, where numbers appear as stylistic, symbolic, and trend-generating resources within multimedia environments, not as a response to technical constraints, but as communicative and

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