The History, Development, and Implications of Morse Code from a Semiotic Perspective

Margaret Kilpeck

Introduction

This paper will provide the opportunity to explore the various elements of Morse Code from a semiotic [[47]] viewpoint. Each section, aside from the introduction and conclusion, will focus on a particular aspect of Morse Code by utilizing semiotic ideas. This will be the first section of the paper.

The second section of this paper, titled "The History of Morse", will look at semiotic ideas of biosphere [[1]] and diachronic [[11]] properties as an element of the code-production process. This will allow me to detail what circumstances in the world at the time lead to the invention of a code to swiftly transmit ideas and messages ((2, 3)).

The third section of this paper, titled "The Era of the Telegraph", will build off of the previous section by prefacing the discussion of Morse Code with an explanation as to why the code was required in the first place. The telegraph needed a fast and efficient system of communication, thus Morse Code was invented ((2, 3, 9)).

The fourth section of this paper, titled "Dots and Dashes", will discuss the components of Morse Code and explain how each letter is assigned a series of dots and/or dashes. This section will also introduce the concept of a sign [[51]] as something which stands to someone for something ((7)). The ideas of paradigm [[34]] and syntagm [[61]] will be discussed in this section, as they pertain to how these dots and dashes combine in different variations to create specific forms ((1, 7, 9, 10)).

The fifth section of this paper, titled "Setting Up the Code", will continue the semiotic discussion of Morse Code by addressing the indexical [[23]] nature of the system of the code. Dots and dashes are produced based on different lengths of time that the signal [[54]] is held. Additionally, the spacing that denotes separate letters in words and separate words in a phrase is denoted by different lengths of time as well ((8)). Morse Code also clearly presents syntagmatic [[62]] and paradigmatic [[35]] properties that account for the way in which the smaller constituent elements

can combine to create meaningful signs and how these signs can then come together to form further messages.

The sixth section of this paper, titled "Producing Morse Code" will revolve around this code as a means of non-verbal communication. It will also touch on the aspects of gesture and kinesics [[15, 25]] and how movements of the body can stand as signs and appear in some deliveries of Morse messages, such as blinking out the code with one's eyes or using one's hands to clap out the code ((5, 6, 10)).

The seventh section of the paper, titled "What's It To You?" looks at the idea of signifying order [[50]], which posits that there are two methods of signification in semiotic systems: denotation and connotation. The section goes on to shine a light on the denotation [[9]] and connotation [[6]] of the dots and dashes used in the code. These constituent parts of the code would be seen as simple flashes of light or short spurts of sound (depending on the method of transmission) to an unwitting person, but someone who knows the code would interpret these signs differently ((5)).

The eighth section of this paper, titled "A Peircean Take on Morse Code", discusses Peirce's ideas of firstness, secondness, and thirdness [[14, 46, 64]] qualities in how signs are interpreted [[52]]. The ideas of secondness and thirdness are the most apparent in this code, however, that does not mean that there are no firstness qualities at work in the code or how it is deciphered ((7)).

The ninth section of this paper, titled "How Saussure Would See the Code", will use Saussaurean perspective [[53]] for an overarching examination of Morse Code, from its history and development to a brief discussion of its implications on the code itself. I will look at how the symbols are used as signifiers [[56]] and the letters they are representing as signifieds [[55]]. Saussure's ideas of langue [[26]] and parole [[36]] also have implications for how Morse Code can be used and interpreted by those familiar with the code as a complete language. ((7))

The tenth section of this paper, titled "Jakobson's Functions of Communication in Morse Code", relates the conative, emotive, referential, phatic, poetic and metalingual functions of communication [[3, 13, 37, 38, 43, 27]] to the delivery of a message through the use of Morse Code. Although we are dealing with a code non-verbally transmitted through radio waves or flashes of light, these facets of communicative processes still hold true and exist amongst communicators ((1, 7, 10)).

The eleventh section of this paper, titled "The Code Behind the Code", will contain a discussion of the semiotic concept of code [[2]] that is inherent to Morse Code. This specific phenomenon is based on a set of rules and principles that outline how the code should function and be utilized. It

will go in depth to explore the main features of code: representation [[45]], interpretation, and contextualization [[7]]. ((4, 7))

The conclusion of this paper summarizes the semiotic ideas that are presented and discussed in relation to Morse Code throughout the entirety of the paper.

The History of Morse

I want to write about the origins and evolution of this particular code and its importance back in its heyday in the 19th century. **I plan to focus on** the idea of the biosphere contributing to a sign system's evolution and creation. Along with this discussion I will incorporate the idea that this code is diachronic as a result of the constant changes and fixes it was given to make it easier to use and more accessible for all populations of people. Lastly, the mere fact that the telegraph system and this code were created demonstrate the presence of a sign which signified that change had to come. **I would like my reader to** walk away with a greater understanding of why Morse Code came to be and how it evolved and progressed through the years.

- I will write about the dawn of the telegraph
- I will discuss how the struggle to communicate over long distances indicated a need for a new, efficient communication method
- I will write about the transition from the American code to the International code
- I will write about the use of the American Morse Code by railroad

The Era of the Telegraph

I want to write about the circumstances that brought about the invention of the telegraph. I also want to write about how the telegraph used electrical currents to transmit messages through a wire. Later, the telegraph was even made wireless. **I plan to focus on** the idea of modernism which has ideals of optimism and progress. I will also discuss the diachronic nature of this period in time. **I would like my reader to** walk away with a newfound knowledge of the beginning of modern technology and people's perceptions of technology and the future at this time.

- I will describe the reasons for the invention of the telegraph
- I will discuss what major historical events it was used for
- I will give a brief description of how the telegraph works
- I will discuss the implications of the telegraph as being a conceptual metaphor for power, progress, and strength

Dots and Dashes

I want to write about the specific components used to form a message in morse code - dots and dashes. I will explain what dots and dashes are and how they are used to stand for each letter of the alphabet and the digits 0-9. Each letter is a sign devised of a certain combination of dots and dashes that stands for a specific letter. **I plan to focus on** how the code of each letter is a paradigm and how letters, along with spaces, can be put together to form syntagms that convey various meanings. **I would like my reader** to appreciate the intricacies and specificity of combining these symbols of dots and dashes to produce meaningful letters, and those letters to form various words.

- I will introduce the concept of a sign
- I will discuss how different specific combinations of dots and dashes can form letters; one change will produce a completely different letter
- I will discuss how combinations of dots and dashes (letters) combine with pauses or spaces to form whole words or sentences
- I will use the idea of semiosphere to examine how the environment of a sign can impact our interpretation of it
- I will discuss how dots and dashes were assigned to letters by means of frequency as a way to make communication as fast as possible

Setting Up the Code

I want to write about how symbols in Morse Code are put together to create meaningful letters and messages, which all have their own distinguishable orientation. This includes not only the dots and dashes used, but also the length of each constituent and the length of spaces in between letters and words. **I plan to focus on** the idea of indexicality and how the effective transmission of messages depends on the correct use of spacing in between letters in words and words in sentences. I will also discuss how the set-up of this code presents both syntagmatic and paradigmatic properties that allow for specific symbols to occur and for these symbols to be combined to create larger entities (words). **I would like my reader to** gain an understanding of how the constituent parts of Morse Code are put together to form words that can be translated into natural languages. Additionally, the reader should gain insight into how intricate and specific the system of the code is and how relation plays a big role.

- The indexical nature of the code in terms of assigning lengths of time to different features
- Syntagmatic properties of the code
- Paradigmatic properties of the code

Producing the Code

I want to write about the way in which some ways of delivering Morse Code involve non-verbal body movements and signals to spell out the dots and dashes. **I plan to focus on** how as a whole Morse Code is a nonverbal form of communication. The code can be delivered in a number of ways, including its original purpose as a code to be sent over telegraph, but also by flashes of light and bodily movements such as blinking or tapping. These forms would subsequently call for a discussion of kinesics and gesture and how the use of body functions contributes to the transmission of the code. **I would like my reader to** realize the plethora of ways in which a message can be sent by using this code. The reader should also come away with a sense of the role gesture and kinesics play in certain deliveries of the code and have a better grasp of what gestures and kinesics are in general.

- I will discuss the impact and usefulness of non-verbal communication
- I will discuss how the body can be used to transmit signs
- I will discuss the specific gestures that lend themselves to transferring messages in Morse Code

What's It to You?

I want to write about the perception and meaning of dots and dashes. Although they seem like simple, meaningless strokes, they carry with them meaning that makes them vital to the system of Morse Code. Along with this, I will venture to explore how denotatively, these markings are arbitrary and do not have any innate connection to the alphabetic letters they represent. **I plan to focus on** the denotative and connotative interpretations of the dots and dashes that make up the code. I will discuss how to the untrained eye or ear, dots and dashes don't seem to hold any import or purpose, but someone who knows the code will be able to attribute certain combinations of dots and dashes to specific letters. **I would like my reader to** realize that in one sign, there are

- I will discuss the idea of signifying order
- I will discuss what Morse symbols are denotatively to a person untrained in the code
- I will discuss what Morse symbols are connotatively to a person well-versed in the code

A Peircean Take on Morse Code

I want to write about the implications of the Peircean semiotic model in the realm of Morse Code. This will contrast with the following section which will focus on the Sausseurean approach to semiotics and the facets that exist there. This will provide insight into one way in which semiotics as a study is viewed and how Morse Code is even able to be what it is: a series of encoded symbols to enhance communication. **I plan to focus on** Peirce's triadic model, consisting of the representamen, the object, and the interpretant. I will also focus on another one

of Peirce's big ideas, which is the three qualities - firstness, secondness, and thirdness- that a sign can possess. Although one or two may be more prominent than another in a given sign, they can all be argued in one way or another. **I would like my reader to** come away from this discussion with a greater knowledge of the impact of Peirce on the field of semiotics.

- I will discuss what components of Morse Code are representamen
- I will discuss what components of Morse Code are objects
- I will discuss what components of Morse Code are interpretants
- I will discuss the implications of firstness, secondness, and thirdness in Morse-encoded messages

How Saussure Would See the Code

I want to write about the concept of Morse Code by way of the Saussurean model of semiotics. This system, although similar to that of Peirce's, posits only two parts of the sign - one that does the representing and the other that is represented. I will briefly acknowledge how this model is attributable to the actual system of signage present, but will take a different approach in the main discussion by relating it back to how its intended use was a sign that some changes needed to be made. **I plan to focus on** Saussure's concepts of the signifier and signified as composing a sign. Saussure also introduced the ideas of langue and parole, ideas which are imperative to all languages and lend themselves perfectly to our study of Morse Code. **I would like my reader to** gain a better understanding of Saussure's impact on the field of semiotics and how profound his central ideas are. The reader should also see the truth of Saussurean thinking at work in Morse Code and its history and realize how all encompassing his model truly is.

- Talk about Saussure's two-part concept of a sign
- I will discuss what parts of the history is the signifier
- I will discuss what part of the history is the signified
- Draw on langue as the knowledge of a sign system and how to interpret it
- Draw on parole as the representative usage of the code in question

Jakobson's Functions of Communication Through Morse Messages

I want to write about the sense of relationship present in a coded message despite the fact that communicators are thousands of miles away from each other. **I plan to focus on** Jakobson's Functions of communication and how these contribute to the code and the ways in which they present themselves in the code. **I would like my reader to** gain a better understanding of the various aspects of communication that may seem trivial to a passerby, but which we know are vitally important to the effective conveyance and subsequent interpretation of a message.

- Introduce the functions of communication with definitions and examples

- Outline the emotive function of communication that exists in Morse Code
- Outline the conative function of communication that exists in Morse Code
- Outline the referential function of communication that exists in Morse Code
- Outline the phatic function of communication that exists in Morse Code
- Outline the poetic function of communication that exists in Morse Code
- Outline the metalingual function of communication that exists in Morse Code

The Code Behind the Code

I want to write about the concept of code that is inherent to Morse Code and the various components of structure that designate it with this title. **I plan to focus on** the ideas of representation, interpretation, and contextualization that define what a code is. I will also look at the concept of opposition and how this specific code is built by means of opposing signs that when used in sequence provide meaning. **I would like my reader** to understand the broader sense of what a code is, how it is built, and the way in which it is actually used to convey meaning. Along with this the idea of the conventionality of this code should be a take-away.

- I will discuss what the broad term of 'code' denotes and the components that make Morse Code fit so perfectly into this categorization
- I will discuss how important the fundamental ideas of structure are to all types of code, specifically this one
- I will discuss representation as one of the general features that defines conventional codes
- I will discuss interpretation as one of the general features that defines conventional codes
- I will discuss contextualization as one of the general features that defines conventional codes
- I will discuss how opposition plays a role in building the code

Conclusion

In this paper, my goal was to draw from semiotic phenomena to provide an in-depth discussion on an array of aspects surrounding Morse Code. This discussion did not focus solely on the physical code itself, but also the meaning inherent in the creation and evolution of the code and its implications throughout history and even today. The semiotic concepts put to use for the sake of this discussion are shown in the list below as an outline of what ideas were brought to light:
- The concepts of **biosphere** and **diachronicity** were discussed in relation to each other and in terms of cultural changes that were being made in the 1800s.
- The idea of **modernism** was discussed next, along with a continued exploration of **diachronicity**, to entertain a discussion of the dawn of the telegraph and its implications in an ever growing, ever changing world. The idea of **conceptual metaphor** was also

explored as we deal with what the introduction of the telegraph meant for communication.

- The **sign** was discussed next, as possibly one of the most important and significant facets of our discussion and semiotics as a whole because signs have implications in every area of Morse Code and in life. The sign stands for something to someone. **Paradigms** and **syntagms** were discussed next as constituents that can be used to form a larger entity and as entities formed of specific combinations of constituents. **Structural economy** was discussed next as it pertains to the way in which letters were assigned their codes of dots and dashes.
- **Indexicality** was explored in relation to how the code relies on segments of various lengths to denote space between letters and words and lengths of dots and dashes. Much like the paragraph before, **paradigmatic** and **syntagmatic** structures are also described, denoting, once again, how distinct letter codes are put together for all 26 letters and subsequently these letters are combined to form words.
- **Nonverbal communication**, through the lens of kinesics and gesture, were described next as being used in certain modes of delivery of the code, such as blinking, clapping, or using any other body mechanism to convey the dots and dashes.
- Roland Barthes' concept of **signifying order** was discussed next, along with the closely related idea of **denotation** and **connotation**. These are the two types of interpretation of signs.
- **Peirce's model of the sign** was explored next, touching upon the ideas of his triadic model of the sign which consists of a **representamen**, an **object**, and an **interpretant**. The discussion also delves into the qualities of **firstness**, **secondness**, and **thirdness**, some of which are blatantly present in Morse Code.
- **Saussure's model of the sign** follows, discussing his two-part model which consists of a **signifier** and a **signified.** The discussion relates the concepts to the letter/symbol relationship as well as the idea that changing needs in the world was a sign that new progress should be achieved. **Langue** and **parole** were also explored as encompassing Morse Code as a form of language that a person must know in order to effectively convey ideas in the language.
- Roman Jakobson's six functions of communication - the **emotive**, **conative**, **referential**, **poetic**, **phatic**, and **metalingual functions** - were defined, exemplified, and applied to the communication that takes place when messages are sent and received through telegraph by means of Morse Code.
- The semiotic idea of **code** was discussed in the final section, as well as its main features of **representation**, interpretation, and **conceptualization**. These features account for how the code is set up and functions as a meaningful whole. **Opposition** is discussed as well in terms of dots and dashes being present versus space existing in between.

This paper is an example of how semiotic studies apply to seemingly unrelated domains, but yet can provide immense insight into the intricacies and inner workings of that domain, and can even lead to a heightened understanding and appreciation of that domain.