Understanding the Semiotics of Cinematography: How Cinematographers Use Semiotic Concepts and Techniques to Elicit a Certain Feeling or Message Within its Viewers

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Abstract

Cinematographers have been using their films as mediums to send their audience a message, or elicit a certain emotion or feeling within them, since the form of art and expression was first developed. Semiotics is the study of sign, sign manipulations, and the interpretation or meaning that individuals derives from each. By dissecting film from a semiotic perspective, one will be able to begin to understand how a motion picture can influence an individual's high-level cognitive processes, and in turn shape their conceptual representations created. We examine many concepts and theories developed by well renowned cognitive scientists and semioticians including Ferdinand de Saussure, C.S. Peirce, Christian Metz, Susanne Langer, and Roland Barthes. We discuss in depth just how these well-known theories and concepts have shed a light on the effects of the cinema, while also diving into the many alternative perspectives one can take when approaching this problem.

Introduction

Since the art of creating film was first established, it has been used as a medium for conveying information to the spectators in attendance in a meaningful way. Cinematography in

general terms is "the art and technology of motion-picture photography" (The Editors of Encyclopaedia Britannica, 2011). Cinematography involves more than one stagnant image, it is a collection of many images composed into a sequence, with outside variables and conceptual systems providing structure and constraints to the sequence of images and objects, in a set way. There are many aspects to consider, as previously stated, involved in the production of a motion picture, and every aspect adds to the overall meaning that is attached to the end product shown at a premier. Semiotics is a well-known subfield of cognitive science, and at its most basic level, "semiotics is the study of signs and symbols and their meanings and interpretations" (Horton, 2017). Signs are all around us and the way in which individuals interpret symbols, infers a lot about the cognitive processes and conceptual representations created within the individual. With that being said, this paper argues that the approaches and techniques used by filmmakers to portray a certain meaning, influence the mental processes within the individuals in attendance watching.

There are many high-level mental processes and conceptual representations that occur within an individual sitting in a theater observing a film. These mental processes and conceptual representations are shaped by the meaning derived from the signs hidden within. In film, signs can be seen as individual images within a frame, the sounds heard, colors used on a set, and even the color of the main character's cape can be seen as a sign and hold importance to the film's message and meaning being conveyed. Any aspect of a film can be seen as a sign and portray meaning to the viewer watching, and these signs have been compiled by the producer in a set way, to serve a set purpose. In Peter Wollen's novel *Signs and Meaning in the Cinema* (1972), he dives into this very concept by showing the great deal of meaning that one can derive through the images within a film:

"Yet our experience of cinema suggests that great complexity of meaning can be expressed through images. Thus, to take an obvious example, the most trivial and banal book can be made into an extremely interesting and, to all appearances, significant film; reading a screenplay is usually a barren and arid experience, intellectually as well as emotionally. The implication of this is that it is not only systems exclusively 'grounded on the arbitrariness of the sign' which are expressive and meaningful. 'Natural signs' cannot be so readily dismissed as Saussure imagined." (P.120)

Just as a novel filled with words can strike the reader with such vivid representations and make them think and feel a certain way, a film does through the use of imagery and sounds. Except with more stimulating aspects to a film over a novel, the audience of a film is more immersed because they can find a relationship with the film that speaks to their sensory and perceptual systems. Often an individual can become so involved and invested in a film that they can imagine themselves within the film as if they were cast to play the lead role. There are many factors that allow individuals to derive meaning from film and more importantly derive the meaning intended by the film creator. To again reference Peter Wollen's novel, *Signs and Meaning in the Cinema* (1972), Wollen makes clear the ways in which filmmakers need to keep up with the societal changes to ensure their film is concurrent within the audience's culture:

"The study of film must keep pace with and be responsive to changes and developments in the study of other media, other arts, other modes of communication and expression. For much too long film aesthetics and film criticism, in the Anglo-Saxon countries at least, have been privileged zones, private reserves in which thought has developed along its own lines, haphazardly, irrespective of what goes on in the larger realm of ideas. Writers about the cinema have felt free to talk about film language as if linguistics did not

exist and to discuss Eisenstein's theory of montage in blissful ignorance of the Marxist concept of dialectic." (P. 17)

This idea can be applied to any form of art, if your art does not reflect the society or culture the observer is currently experiencing or has experienced, they will most likely struggle to derive the intended meaning or message. Filmmakers rely on the fact that most humans have similar enough experiences due to development in similar societies and cultures. Even though each experience someone has is subjective, being a part of the same or similar culture/society can allow the subjective experience of two individuals to be similar or at least similar enough. This also means that filmmakers need to keep up with the development and changes in society. Keeping up with these changes can help ensure a cinematographer that the intended meaning the audience derives from their film is coherent and understood in the context of the culture that surrounds the audience. If a filmmaker can keep up with cultural/societal values, it allows the audience to get more invested in the plot and connect with the characters because there is an "impression of reality being experienced by the spectator" (Metz, 1991). This concept is very prominent in the work done by Christian Metz, a film theorist and semiotician, whose theories, and concepts we will revisit in depth later in the paper. In Metz's novel Film language: A Semiotics of the Cinema (1991), he touches on this very idea of a film appealing to all the spectator's senses, influencing the perspective in which they view the film:

"One of the most important of the many problems in film theory is that of the impression of reality experienced by the spectator. Films give us the feeling that we are witnessing an almost real spectacle to a much greater extent, as Albert Laffay has noted, than does a novel, a play, or a figurative painting. Films release a mechanism of affective and perceptual participation in the spectator (one is almost never totally bored by a movie).

They spontaneously appeal to his sense of belief never, of course, entirely, but more intensely than do the other arts, and occasionally films are, even in the absolute, very convincing. They speak to us with the accents of true evidence, using the argument that "It is so." With ease they make the kind of statements a linguist would call fully assertive and which, moreover, are usually taken at face value." (P.4)

Metz makes apparent how wonderful of an experience a film can create for the audience watching and is something that no other form of art does justice like a motion picture. The idea that "films release a mechanism of affective and perceptual participation in the spectator" is what allows filmmakers to influence the mental embodied cognitive processes and representations within its viewers (Metz, 1991). All the aspects that lock the spectator in, keeping them on the edge of their seat and unaware of any surroundings because it feels as if they have stepped into a new reality, are designed in a particular way by the film's producer. The way in which this all occurs is what we will be discussing throughout the sections following the introduction.

Succeeding the paper's introduction, there are four sections dedicated to understanding some of the foundational concepts and theories developed by well-known cognitive scientists and semioticians in their respected fields. Many of the semioticians also specialize in a variety of other related fields including linguistics, psychology, and philosophy, allowing this problem to be viewed from multiple perspectives. The first of the four sections are dedicated to foundational work featuring Ferdinand de Saussure and C.S. Peirce. These two semioticians can be seen as setting the stage for semiotics, as it was an emerging and unheard field of their time. Saussure can be seen to have a linguistic twist to his semiotic theories and provides insight into how language and the manipulation of signs are interconnected and dependent on one another.

Peirce's semiotic work makes clear the relationship between the signifier and signified, when

interpreting different signs of the world. Pierce's theories also provide those new to semiotics, a different perspective of looking at the world, by suggesting that humans only view the world through the relationships and manipulations of signs. The other three sections will feature work from Christian Metz, Roland Barthes, and Susanne Langer, each of these semioticians helping to provide alternative perspectives into the problem under question. Following those four sections, we will dive deeper into important concepts introduced when discussing the works of known semioticians, as well as concepts not previously discussed, by exposing their role and influence in cinematography and cognitive science. These concepts are split up between three sections and each section is related to one another. The first section will explain the concepts of embodied cognition, categorization, conceptual metaphors, and image schemas, all being critical for understanding how meaning is derived in the minds of the audience watching. The next section will break down the functionality of a cinematographers camera and a motion picture's frame, enlightening the reader on the ways in which their functions are similar to cognitive processes and conceptual representations produced in the human brain. Finally, we will bring to light the importance of diegetic and non-diegetic sounds, by examining the influence they have on the meaning and mental representations one derives from film. Our papers final section, the conclusion, features a summary of the paper's significance to the field of cognitive science and film theory. Lastly, the latter half of the conclusion includes an interdisciplinary perspective one could embrace to extend this research down the road, opening our community of researchers to new horizons and ways of thinking.

In this paper, we look to understand how concepts and theories in the field of semiotics are being used by filmmakers to influence the spectators in the audience. We bring to light many different semiotic techniques developed over the years and show how they are used to affect the

subjective meaning one derives from film. This paper argues that cinematographers use semiotic techniques and approaches to elicit a particular message or emotion within their audience, influencing their perceptual systems and other high-level embodied cognitive processes, which in the end, shapes the conceptual representations created.

Foundational Semiotic Concepts and Ideology

The field of semiotics is considered a sub-field of cognitive science and the field of semiotics is concerned with "the study of signs and symbols and their meanings and interpretations" (Horton, 2017). The field of semiotics places a special emphasis on the meaning interpreted and the reasoning behind the meaning derived from any given sign. There are many semioticians that have laid foundational work in this field and it is crucial to mention many of their theories, as they provide insight into the ways in which humans derive meaning from signs. Ferdinand de Saussure is one of those foundational contributors to the field of semiotics and takes a linguistic and structuralist approach in much of his work. "Saussure treated language as a sign-system," and his work in linguistics supplied the concepts and methods that semioticians applied to sign-systems other than language. (The Editors of Encyclopaedia Britannica, May 2020). Saussure treated any and all-natural languages as systems of signs and believed that the manipulation of those signs inferred a lot about the semantics or meaning that an individual assign to each. More specifically, Saussure considered language as a system of relations, where the values assigned to the symbols within are the result of difference and discourse. In other words, elements within the system are understood in terms of their relation to the systems overlying structure. "While structural linguistics, as a part of the semiology postulated by de Saussure, investigates natural languages as a system of signs, in structuralism, instead, methods and terms of structural linguistics are generalized a priori and applied to the realm of nonlinguistic signs pertaining to the semiology of communication, and especially to the realm of indices in the semiology of signification" (The Editors of Encyclopaedia Britannica, May 2020). By Saussure taking a structuralist approach, the idea of natural language being a system of signs can be generalized to describe the semiology of any form of communication. This allows for comparison between the semiology of language and of general communication, allowing more insight into the semiotics of cinema, as the same ideas can be generalized to describe the communication found within film.

In Saussure's semiotic work he places a great emphasis on the idea of the signifier and the signified, and as we will see later so does C.S. Peirce. The signifier is the sign itself or in other words the object in the physical world being interpreted. Where the signified is the interpretation or meaning that is derived from a given sign (The Editors of Encyclopaedia Britannica, May 2020). The idea that a sign is composed of a two-part construct, the signified and the signifier, are conceptually similar to Saussure's linguistic ideology that language as a system is composed of two components, *la parole*, and *la langue*. Saussure "distinguished parole, actual individual utterances, from langue, the underlying system of conventions that makes such utterances understandable" through his linguistic theories (The Editors of Encyclopaedia Britannica, May 2020). Parole is the individual words or phrases themselves, the signifier, and langue relates to the signified, which is the context behind the words and phrases, allowing meaning to be understood.

Ferdinand de Saussure's semiotic theories consider natural language as a system of signs, making the idea of syntax and discourse, when examining the context and meaning assigned to a particular sign, increasing important. Syntax in natural language refers to the underlying structure of a language and by using the idea of discourse, you can compare the meaning and

context behind written language to derive new information and meaning. This same idea can be applied to semiotics and film theory. More specifically, when looking at the syntax, semantics, and pragmatics of natural language, meaning is derived in very similar ways to how it is accomplished in film and cinematography. In Gilles Deleuze's novel Cinema 2: The Time-Image (1986), Deleuze begins to introduce the idea of film and natural language having similar structure and methods of producing and deriving meaning. Deleuze states that "language features, which necessarily apply to utterances will be found in the cinema, as rules of use, in the language system and outside of it: the syntagm (conjunction of present relative units) and the paradigm (disjunction of present units with comparable absent units). The semiology of cinema will be the discipline that applies linguistic models, especially syntagmatic ones, to images as constituting one of their principal 'codes'" (Deleuze, 1986). Deleuze gives a brief but descriptive explanation of how the structure of language and film are similar. He does so by showing that like language, film can be seen as a system of signs, and the manipulation of any sign in that system will affect the systems function or overall meaning. Deleuze end his short explanation by referencing the idea of an images code, and this idea will be further explored when showcasing Roland Barthes semiotic theories.

Similar to Ferdinand de Saussure's semiotic theories, C.S. Peirce places a great emphasis on the fact that a sign is composed of a signifier and the signified, although Peirce extends this idea by adding an interpretant component. This changed the idea that a sign is composed of a two-part construct, by suggesting a triadic view. Beside the object itself and the identification of the object's properties being associated with one common idea. The individual identifying the sign under question must interpret the signified information, and the individuals past experiences govern how that information is interpreted and the emotions that are elicited within. Much of

C.S. Peirce's "seminal work in the field was anchored in pragmatism and logic" and he defined a sign as "something which stands to somebody for something" (The Editors of Encyclopaedia Britannica, May 2020). Peirce also demonstrated "that a sign can never have a definite meaning, for the meaning must be continuously qualified" (The Editors of Encyclopaedia Britannica, May 2020). This idea becomes increasingly important when considering film because if the meaning assigned to a film's signs do not align with the societal or cultural constructs of the time, meaning will be lost.

Peirce furthered the foundational seminal work of his time by classifying a sign and its meaning into three distinct categories and those categorizes are then further broken down into three distinct types. The three distinct categories Peirce classified signs into are: Firstness, which is the quality of feeling or qualia of a sign, Secondness, being the reaction or relation of the sign, and Thirdness, as the representation and discourse of a given sign. All three categories are required properties of a sign under Peirce's semiotic ideology. In the absence of one of the categories, some or all the information or meaning conveyed by a sign may be lost. As previously mentioned, the three distinct categories of a sign are broken down further into three different types, each exposing the different properties a sign possess and the information that is critical for interpretation. The first category, the icon, "resembles the signs referent" and corresponds with firstness because an icon is concerned with a sign's physical properties (The Editors of Encyclopaedia Britannica, May 2020). An example of an icon in everyday life is smoke, and smoke has the physical properties of being a thick, cloudlike vapor. The second type is the index and corresponding with secondness, an index "is associated with its referent" (The Editors of Encyclopaedia Britannica, May 2020). Another way of understanding the function of an index is by asking yourself what does the concept behind the sign relate to? To continue with

the example of smoke, the association with the referent could be that smoke signifies fire. The last sign type is a symbol and a symbol correspond to the concept of thirdness under Peirce's semiotic theory. A symbol "is related to its referent only by convention," showing the need for the aspect of an interpretant when examining different signs (The Editors of Encyclopaedia Britannica, May 2020). Symbols rely on the experience and knowledge of the individual to interpret the conventions of a sign. Getting back to the idea of smoke signifying fire, to different individuals fire can signify a wide variety of different things. Fire can elicit the feeling of warmth and comfort, or it could spark an uneasy feeling due to a past experience where fire caused destruction. In Gilles Deleuze novel, *Cinema 2: The Time-Image* (1986), he explains how Peirce's semiotic concepts can be applied to film by breaking down the images of a film into the three components previously mentioned:

"This said, the sign in Peirce apparently combines the three kinds of image, but not in any kind of way: the sign is an image which stands for another image (its object), through the relation of a third image which constitutes 'its interpretant', this in turn being a sign, and so on to infinity" (Deleuze, 1986)

The images of a film are considered signs and Deleuze briefly describes how the different types of images used in film come together to represent a certain idea. Each image in a film are related to one another within the films sign system, just as each utterance in a language are related to each other in a structured sentence, further exposing the similarities between film theory and linguistics/semiotics.

Christian Metz and Film Theory

Film Theorist study film by examining the various aspect and attributes involved in the construction of a renowned motion picture. Cinematography is more than just a director, a camera, and a cast of actors, there is an underlying structure and strict constraints set on the flow of sequential images that form a full-fledged motion picture. To form a well-constructed film it "involves such techniques as the general composition of a scene; the lighting of the set or location; the choice of cameras, lenses, filters, and film stock; the camera angle and movements; and the integration of any special effects. All these concerns may involve a sizable crew on a feature film, headed by a person variously known as the cinematographer, first cameraman, lighting cameraman, or director of photography, whose responsibility is to achieve the photographic images and effects desired by the director" (The Editors of Encyclopaedia Britannica, 2011). There are so many aspects and variables to consider when creating a memorable motion picture. All the different angles, positions, and still images just mentioned, are what allow a director to construct a story that immerses the audience watching. "The historical fact is that cinema was constituted as such by becoming narrative, by presenting a story, and by rejecting its other possible directions" (Deleuze, 1986). Through the sequence of images, a films narrative or story is created, which is driven by the characters and their actions as they progress through the films plot. "The rule of the "story" is so powerful that the image, which is said to be the major constituent of film, vanishes behind the plot it has woven" (Metz, 1991). Cinema, simply put, in theory is "the art of images" and the individual images that form a film hide behind the plot they create.

The aspect of immersion allows an immense amount of feeling and emotion to be portrayed to the audience watching, making the interpretation and derivation of meaning a critical area of study for film theorists. Film portrays meaning to the audience watching through the use of a sign system, where each sign attributes to the overall message hidden within a film. Anything from the squeaking of a door to the defeat of an antagonist can be a sign and attribute meaning to the overall whole. As described by Christian Metz in his novel *Film Language: A Semiotics of the Cinema* (1991):

"One of the most important of the many problems in film theory is that of the impression of reality experienced by the spectator. Films give us the feeling that we are witnessing an almost real spectacle to a much greater extent, as Albert Laffay has noted, than does a novel, a play, or a figurative painting * Films release a mechanism of affective and perceptual participation in the spectator (one is almost never totally bored by a movie). They spontaneously appeal to his sense of belief never, of course, entirely, but more intensely than do the other arts, and occasionally films are, even in the absolute, very convincing. They speak to us with the accents of true evidence, using the argument that "It is so." With ease they make the kind of statements a linguist would call fully assertive and which, moreover, are usually taken at face value."

A good director creates a whole new world within their film, that plays on common experiences had among the films directed audience. A film is one of the most powerful mediums for conveying meaning and other forms of expression like painting or photography do not have the same capabilities that motion pictures do. Where a painting or photo is a single image, a motion picture is a collection of many sequential images, with the addition of sound, allowing for a that new world to be created.

Christian Metz is probably one of the most renowned semioticians when it comes to studying and analyzing the semiotics of film. Through Metz work there has been a foundation laid, which provides an understanding for how film operates as a system of signs and how the meaning being conveyed by those signs influence the audience watching. Like the work done by Ferdinand de Saussure and many others, Metz was a semiotician interested in studying signs as a two-part construct. Along with his fascination with the signifier and the signified, Metz more closely focused his attention on the connotational and denotation elements of cinematic signs. Metz suggests that the denotational elements of film be studied first before diving into the connotational elements, due to the order in which we as humans perceive them. The denotational elements are the visual elements presented to the viewer sitting in the audience, and in simplifier terms the denotational elements are generally the images that make up the film's story. The audience perceives the denotational elements of film as they are, interpreting the effects or influence the different elements encompass later. The interpretation process of denotational elements occurs when understanding a cinematic connotation. "Metz recognizes that one form of cinematic connotation, which unlike others is clearly under the control of filmmakers, is the figurative and strictly speaking extra- narrative meaning generated as a result of profilmic objects being framed, lit, edited or otherwise shown by filmmakers in unusual and often creatively stylized ways" (Yacavone, 2018). Connotational elements cannot be understood with just the basic information and materials shown in the film, like denotational elements. Connotational elements present something to the viewer that requires interpretation and context to fully understand.

Along with Metz focus on the connotational and denotational elements of a sign, Metz differs from other semioticians with his theory of the imaginary signifier. Christian Metz saw the

signifier of a film as reflecting the individual watching, placing an emphasis on the role of the audience. "Metz sees the spectator's captivation by the image as being equivalent to the child's identification of itself with its image in the mirror. Most importantly, this identification is pleasurable, a factor reinforced by the cinema institution's encouragement of the spectator (Mambrol, 2018). This is a different approach from traditional film theory, because before the role of the audience was not considered. Instead there was more of a focus on the creative process behind the scenes by the director. "Thus, film is like a mirror. But it differs from the primordial mirror in one essential point: although, as in the latter, everything may come to be projected, there is one thing and one thing only that is never reflected in it: the spectator's own body. In a certain emplacement, the mirror suddenly becomes clear glass." (Metz, 1991). Metz saw film as a mirror that reflects the views and experiences of the viewer watching. The signifier becomes imaginary because it is arbitrary to the individual watching, making it imaginary, as no one else experiences the effects of the signifier in the exact same way. There may be a consensus of what is being portrayed by the signifier, but it is not replicated exactly between individuals in attendance.

"The differences between photography and cinematography are many. A single photograph may be a complete work in itself, but a cinematographer deals with relations between shots and between groups of shots" (The Editors of Encyclopaedia Britannica, 2011).

Cinematography involves more than one stagnant image, it is a collection of many images composed into a sequence, with outside variables and systems providing structure and constraints to the sequence of images and objects, in a set way. This idea relates directly to the idea of natural language being a system of signs, established by Ferdinand de Saussure, where discourse and difference determine how meaning is derived. Saussure believed that natural

language is a system of signs, where the meaning of an individual unit of speech is the result of the co-existence of a different unit. Saussure stated that no unit could stand alone, and each unit only held meaning due to its co-existence with other units in the system (Krampen et al., 1987). The idea that film is a sequential set of images, assembled in a particular way, appealed to no one more than Christian Metz. Metz believed that film was made up of series of minimal sequences, which he named syntagma's, where each sequence added to the overall message of a film. Metz followed the idea that "it is the felicity of art to show how a thing begins to signify, not by reference to ideas that are already formed or acquired, but by the temporal and spatial arrangement of elements" (Metz, 1991). If you manipulated the arrangements of elements, altering any little detail of the sequence, it will affect the overall message, feeling, or story the film projects.

Roland Barthes and The Coded Message

Roland Barthes was a French theorist, philosopher, and of course a well-known semiotician in the mid 1900's. Like Ferdinand de Saussure, Barthes was very interested in the structuralist movement that was popular during his lifetime. Structuralism is a method of interpretation, that analyses different background experiences and ways of thinking, to see the relationships between the different parts of the conceptual system (Barthes, 1968). His theories investigate the idea that individual elements and aspects of experience or culture belong to an overall conceptual system, where each element is related to one another. Barthes focus was on how an individual's development and the social ideology surrounding them, shape the meaning interpreted from a given sign in a conceptual system. Barthes believed that "the institutional and the systematic aspect are of course connected: it is because a language is a system of contractual values (in part arbitrary, or, more exactly, unmotivated) that it resists the modification coming

from a single unit, and is consequently a social institution." (Barthes, 1968). Barthes approach to understanding how meaning is interpretated stems from his work in anthropology and is very apparent in this quote. Bathes believed that a single symbolic unit cannot stand alone and the meaning it conveys is arbitrary, requiring a certain context to comprehend. Barthes was interested in how someone's cultural, religious, and societal backgrounds provides the context needed to derive meaning in a conceptual system, like film. Much of the work Roland Barthes has done relates to understanding how advertisements influence those that interpret them. The ways in which Barthes breaks down an advertisement, into a conceptual sign system, can be applied when understanding film as a system of symbolic images. Roland Barthes breaks down his interpretation of a symbolic image into three different "messages," where each message provides another meaningful aspect to the image being interpreted.

The first "message" that Barthes investigates is the linguistic message that a symbolic image or scene projects. The linguistic image, simply put, is the linguistic words or elements found within a scene. The linguistic elements add another level of understanding to an image and to fully comprehend the message, you need to interpret the connotational and denotational messages within. This is the same concept developed by Saussure regarding natural language, where a symbol is composed of a two-part construct, the signifier and signified. "Roland Barthes, as a result of his researches into the language of costume, concluded that it was impossible to escape the pervasive presence of verbal language. Words enter into discourse of another order either to fix an ambiguous meaning, like a label or a title, or to contribute to the meaning that cannot otherwise be communicated, like the words in the bubbles in a strip-cartoon. Words either anchor meaning or convey it" (Wollen, 1972). The denotational aspect of a linguistic message is "the code from which this message has been taken" (Seiler, n.d.). In other

words, the denotational message is the natural language in which the linguistic symbols stem from. The denotational message only examines the background of the language to understand the phrases and words shown. The connotational message than takes the examination of the linguistic message a step further. Once it is understood what natural language the linguistic message is encoded in, it is crucial to find out how the cultural background of the language adds meaning to the message (Seiler, n.d.). By breaking down the linguistic message into these two distinct parts it allows insight into the directors' creative process when constructing the message and adding meaningful elements to the overall image.

The second message that Roland Barthes breaks down the various signs found within a conceptual system into, is the symbolic or coded image. The coded image "yields a series of discontinuous signs" where the order of the signs is not linear in the series (Seiler, n.d.). The discontinuous signs involved within the coded message attribute different aspect of meaning. To understand the meaning that is attributed, you need to understand the contextual or connotational information that is "coded" into the image. Barthes breaks down the coded image into four different sign types, none of which are specifically named. The first sign is what is being signified by the scene or image as a whole. The first sign relies on understanding the societal values of the creator and of the current time period to fully comprehend. The second sign is the signifier and relies on understanding aspects of a specific ethnicity. "This sign stands in a relation of redundancy with the connoted sign of the linguistic message" (Seiler, n.d.). An example of this is when interpreting the color scheme of red, white, and green, which are the colors of the Italian flag. If you are not Italian, or know no information about Italian culture, you may not understand the reasoning behind the color scheme. Without this understanding the viewer is deprived of contextual information needed to comprehend what they are seeing. The

third sign is the collection of the elements within an image used to transmit a single idea. For example, seeing various fresh fruits and vegetables, one can infer that a fresh, quality meal is going to be prepared. The fourth and final sign deals with the arraignment of the collection of elements within an image but focuses on how the arrangement of items are aesthetically pleasing. The elements found in the scene of a movie or advertisement are not placed at random. They are strategically placed to be aesthetically appealing to the viewer and are used to convey a particular meaning.

The third and final message that Roland Barthes breaks down the signs of a conceptual system into is the literal or non-coded image. This is the easiest of the three messages to comprehend as there are no contextual information required to understand what is being conveyed. The literal image is the "literal" denotation, the recognition of identifiable objects in an image or scene, irrespective of the larger societal code previously described (Seiler, n.d.). The literal images are the real objects in the image and are not coded, the viewer only needs to be able to identify what each object is before looking at the image. These images have no required connotations to comprehend what the object stands for; they have a universally known meaning. An example of this could simply be an individual seeing a four-legged furry animal in a scene and being able to recognize that it is a dog. No other interpretations needs to be made, the viewer simply needs to be able to identify the object as relating to a single idea. In the example given, the features of a four-legged furry animal are mapped to the idea of a dog. No specific breed is determined, and no other past experiences of dogs are required. The viewer does not even need to belong to a certain culture or have a specific societal background, the ideas behind these images are more or less universal.

Susanne Langer: Art and Expression

Susanne Langer was a well-known philosopher, artist, and semiotician of her time who was fascinated with natural language and the aesthetics of art and music. Unfortunately, because Langer was a woman, she was not held with the same prestige as other intellects working at the time. Langer used artistic expression to relate to other cognitive activities humans perform, and this is very apparent throughout her work. The work Langer published regarding aesthetics and expression, relates directly to Metz theory of a film being composed of a system of sign images and Saussure's ideology of natural language being a system of meaningful symbols. Langer saw each individual aspect of a piece of art as a sign that adds meaning to the message being portrayed by the creator. Langer's approach to understanding how meaning is conveyed focuses on the presentational symbolism and discursive symbolism that is portrayed (Langer, 1953). Presentational symbolism dissects the emotional significance of an individual artistic feature or sign. Presentational symbolism can be manipulated and used in a variety of different ways by the artists, eliciting different emotions or feelings depending on the perspective the artist took (Langer, 1953). An example of presentational symbolism in art is show cased when an artist paints a tiny dog with very large eyes. To many observers, this will elicit a happy and sympathetic feeling because the dog is portrayed as having the qualities of being cute and innocent. Discursive symbolism, on the other hand, considers the implied message of a painting, acting like the signified half of a signs two-part construct under Saussure and Peirce (Langer, 1953). An example of discursive symbolism is the idea of fire being conveyed as destructive and devastating. Just like the idea of the signifier and the signified aspects of a sign, Langer looks at the presentational and discursive aspects of signs found in art and expression.

Langer's theories and ideology for examining art and expression emphasizes the importance of first considering the individual units of a piece before examining the whole. In doing so, it allows those interpretating the piece of art or music an understanding of how each piece or aspect is mapped to one other to form the whole. Each individual unit is considered an artistic sign or aspect that holds meaning (Innis, 2012). This is like the idea of a phoneme in linguistic, which the smallest unit of sound that still holds meaning. In the same way that phonemes come together to form words and sentences that contain meaning, the different aspects of a painting come together to portray a message or elicit a certain feeling. Each frame of a film is an image that can be interpreted using Langer's semiotic approach. In just one of a film's frames, there are a variety of different aspects to inspect. Lighting is an aspect of film that holds an immense amount of meaning to the scene that is being shown (Innis, 2012). Brighter lights can be used to set a peaceful and innocent mood within the audience, acting on peaceful experiences that allow them to relate directly to the film. The reverse effect can be seen with dark lighting, the audience will observe the mood as being dismal and remind them of a gloomy or depressing experience they have endured. A similar affect can be seen when looking at the color scheme used by an artist (Innis, 2012). Brighter colors are meant to elicit a happy or positive feeling within the viewer. On the other hand, darker colors are used to elicit the reverse, making the viewer feel sad or possess a negative feeling. Other aspects of art that are a concern of Langer's include setting, props, object placement, the use of empty space, outfits of the characters, although these only names a few, the list goes on and on. All these different aspects described add new meaning to an artistic piece as a whole and helps structure the message that the artist is portraying to the viewer.

Susanne Langer examined expression and art as a system of signs just like Ferdinand de Saussure did with language and Christian Metz with regards to film. Before concluding our last discussion that considers foundational semiotic theories, it is important to note the similar semiotic approaches used across disciplines. So far, we have seen art, language, and film all being represented as systems of signs. In all cases, each of the individual signs or units within the various systems hold meaning that attribute to the system as a whole. No individual unit can stand alone, independent of the system, and still portray the same meaning as if it were a part of the whole. Each individual unit attributes meaning to the whole system and removing any sign from the system will change its function. All of the approaches we have looked at also describe the various signs within a sign system as being composed of a two-part construct. In C.S. Peirce and Ferdinand de Saussure's approach there is the common idea of the signified and the signifier, although Pierce adds a third element of an interpretant. Christian Metz broke down cinematic signs into two parts, the connotational elements and the denotational elements. Now we have just seen that Langer followed suit and described artistic signs and expression as portraying presentational and discursive symbolism. Even though all the semiotician's theories take different approaches and perspectives on how a sign functions, the concepts used are almost universal across disciplines.

Embodiment, Categorization, and Conceptual Metaphors

The way in which humans derive meaning and understand the world around them is a result of human cognition being embodied. Embodied cognition "appeals to the idea that cognition deeply depends on aspects of the agent's body other than the brain. Without the involvement of the body in both sensing and acting, thoughts would be empty, and mental affairs would not exhibit the characteristics and properties they do" (Wilson & Foglia, 2015). Embodied

cognition involves the idea that cognition is not solely depended on processes within the mind but is influenced by the body's interaction with the physical world. Embodied cognition is an important topic that needs to be understood when examining the semiotics of film because without it, mental representations could not be formed. If cognition were not embodied, cinematographer would be unable to influence the cognitive processes that construct conceptual representation within its viewers. Film encompasses both auditory and visual stimuli, differentiating this form of expression and communication from literature, painting, and photography. Information from our visual and auditory systems are necessary to accurately form conceptual or mental representations of a films intended message. Humans need the interpretation of sensory information to be able to understand what is occurring in a film. Without sensory information from the body, thoughts would be empty, and the mind would be unable to form mental representations because it is unable to acquire new knowledge from the world or manipulate past experiences and patterns of thought.

Categorization is a process that allows for reasoning and understanding by our cognitive systems, as we try to make sense of the world around us. To better understand this idea, George Lakoff explains extensively how prominent categorization is in our everyday lives and how reliant human's embodied cognitive processes are on categorization in his novel *Women, fire, and dangerous things: What categories reveal about the mind* (2008):

"In moving about the world, we automatically categorize people, animals, and physical objects, both natural and man-made. This sometimes leads to the impression that we just categorize things as they are, that things come in natural kinds, and that our categories of mind naturally fit the kinds of things there are in the world. But a large proportion of our categories are not categories of things; they are categories of abstract entities. We

categorize events, actions, emotions, spatial relationships, social relationships, and abstract entities of an enormous range: governments, illnesses, and entities in both scientific and folk theories, like electrons and colds. Any adequate account of human thought must provide an accurate theory for all our categories, both concrete and abstract."

As humans we categorize everything we experience or do, whether we know it or not.

Categorization sets the weights of incoming stimuli in conceptual representation spaces and manipulates the weights of past stimuli based on new experiences had through cognition.

Categorization is needed to perform cognitive processes efficiently and effectively, and without it our mind may misrepresent the world around us. Categorization of sensory stimuli allow our perceptual systems to determine what incoming information is intrinsic, or important, from information that is extrinsic, or less important, that may just overload our cognitive systems.

Without categorization within the mind, our perceptual systems and high-level cognitive process may be unable to understand the message of a film, because information may be lost.

Another way in which humans understand the physical world around them, that relies on cognition being embodied, is the idea of conceptual metaphors. Conceptual metaphors rely on the idea that human cognition is embodied because conceptual metaphors also require information from the body's interactions with the physical world. Conceptual metaphors "are frame-to-frame mappings, with the roles of the source frame mapping to corresponding roles of the target frame. In conceptual metaphors, source and target frame mappings are not necessarily one to one. In some cases, not all roles or role fillers are mapped, and in others metaphorical roles are added to the target domain" (Lakoff, 2012). Conceptual metaphors are "the very

systematicity that allows us to comprehend one aspect of a concept in terms of another" (Lakoff & Johnson, 1980). Conceptual metaphors show the relationship between two objects in conjunction, relating to the idea that natural language and film are system of signs, that use difference and discourse to understand the meaning produced. A good example of a conceptual metaphor can be seen when understanding the phrase: "The price of peace is rising." Peace is not something you can buy or actually place a value on, but the phrase refers to the increase in efforts to keep peace. Therefore you are understanding the immense amount of work that it takes to keep peace in terms of quantity or money, which is a simpler and more straight forward concept to understand as most people deal with currency on a daily basis. Conceptual metaphors are used in film when comprehending dialog produced by the characters within. Being unable to decipher conceptual metaphors will deprive those in the audience of important information or messages being portrayed by the producer, taking away from the overall experience had after watching the film.

A common phenomenon that is studied extensively in the field of cognitive psychology is that of an image schema. An image schema is an embodied recurring prelinguistic structure within human's cognitive process that establishes a pattern of understanding and reasoning. As a human experience the same stimuli or are placed into similar situations multiple times, a pattern of understanding is established around the information and environment being perceived. This allows for easier recall of relevant information at a later date, and for reasoning to occur when placed into a new or previously existing environment. Image schemas are what allow conceptual metaphors to be understood, because conceptual metaphors require information from past experiences to understand a new concept. Image schemes establish the path to efficiently and accurately recall the information needed by our perceptual and cognitive systems. Due to this

fact, image schemas are another concept that allows for the derivation of meaning when interpretating cinematic signs, providing more insight into the influence cinematographers possess.

The Camera and The Frame

In almost all the work we have seen regarding film theory and the semiotics of film, there has been an emphasize placed on the role of a films set of frames. Christian Metz brought to light the idea that a films individual frames are a part of a sequence or system, which he called syntagma's, where each frame is considered to be a sign that conveys meaning. Metz also showed that the frames within a syntagma provide meaning to the whole system, not just to the individual elements, and the absence of one frame will manipulate the overall meaning produced by the sequence. This is because meaning within the system, similar to natural language for Ferdinand de Saussure and art for Susanne Langer, is derived through discourse, difference, and relations to the rest of the signs within the system. "The frame therefore forms a set which has a great number of parts, that is of elements, which themselves form subsets. It can be broken down... This is why Jakobson calls them object-signs, and Pasolini 'cinemes'... (cinemes would be very like phonemes, and the shot would be like a moneme)" (Deleuze, 1986). The frame of a film can be broken down and compared to the linguistical components found in natural language. Each frame is composed of meaningful elements, carefully crafted together in a way that develops meaning, like how the symbols of a natural language come together to form meaningful words and phrases. Each of the elements within a frame can be thought of as phonemes, coming together to form something meaningful. A frame is than composed of many elements all coming together to form one meaningful unit, similar to a morpheme, which adds meaning to the films overall system. With that said, an individual frame can provide mass amounts of information to

the viewers, as we have already seen, but a frame can also project small amounts of very important information. "If the frame has an analogue, it is to be found in an information system rather than a linguistics one. The elements are the data, which are sometimes very numerous, sometimes of limited number. The frame is therefore inseparable from two tendencies: towards saturation or towards rarefaction." (Deleuze, 1986). Some frames are constructed to project only a few meaningful elements, that does not mean the information is less important, it could actually imply the opposite, quantity does not equate to quality.

We have discussed non-stop the importance of a film's individual frames, although we have not really touched upon the function of the camera. When we discuss the function of the camera, with regards to film theory and cinematography, we are referring to a camera with the capability of recording a single frame, a "shot", or a sequence of individual frames forming syntagma's. As we have seen before "the differences between photography and cinematography are many. A single photograph may be a complete work in itself, but a cinematographer deals with relations between shots and between groups of shots" (The Editors of Encyclopaedia Britannica, 2011). The camera, under the instruction of the director, is designed to compile the sequences of meaning syntagma's to form a congregate "whole", or the completed film seen in theaters. The camera must interpret the elements found in each frame, taking into account both auditory and visual information about the individual aspects and properties, and structure and categorize it in a way that is meaningful to the audience watching. "The technology of photography carefully conforms to this (banal) phantasy accompanying perception. The camera is 'trained' on the object like a fire-arm (=projection) and the object arrives to make an imprint, a trace, on the receptive surface of the film-strip (=introjection). The spectator himself does not escape these pincers, for he is part of the apparatus, and also because pincers, on the imaginary

plane (Melanie Klein), mark our relation to the world as a whole and are rooted in the primary figures of orality" (Metz, 1982). The camera conforms to the perception of the viewer watching, pulling them in and imprinting a particular conceptual representation. If the film is designed properly, as Metz states, the audience will be unable to "escape these pincers" and there way of thinking will be influenced whether they know it or not.

The camera and frames used to construct a motion picture function similar to the human brain, processing, interpretating, and manipulating the various elements of a motion picture to form a representation that is meaningful. The camera can be shown to represent and function like the human mind, compiling and interpreting a sequence of meaningful frames into a congregate whole. The camera is reflective of the directors' experience, which acts as the cameras mind. The frames of a film, similarly, can be compared to the conceptual representation formed inside the audience's mind, directed by the camera to "think" or perceive information in a certain way. The frame is instructed by the camera, or the mind, to compile the meaningful elements in a set way and then the camera compiles those frames into meaningful sequences that projects a message reflective of the directors experiences, perception, and creative process.

Diegetic and Non-Diegetic Sounds

A theory that Christian Metz's looked extensively at, as a film theorist, was the idea of diegetic and non-diegetic sounds or music. The term diegesis was first developed by Plato in his novel Plato's Republic, although diegesis then was said to "denotes narrative in the wider generic sense of discourse that communicates information keyed to a temporal framework (events "past, present, or future," Republic 392d)". In modern terms, "Diegetic sound is any sound that emanates from the story world of the film. The term comes from the word diegesis, which is the evolution of a Greek term that means narration or narrative... The source of diegetic

sound doesn't necessarily need to be seen on screen, as long as the audience understands that it is coming from something within the film" (MasterClass, October 2019). Diegesis deals with the world created within a film and the story that is being told by a films plot. To put things into perspective, music performed on instruments by a films characters affect the plot and requires narration within the music, qualifying the sounds heard as diegetic. Diegetic music and sounds can be seen in almost any well-known movie and adds a whole new outlook and perspective to the movie being produced.

Background music that does not involve any characters from the film or affect the film's plot in any way and instead is used to help set the tone/mood of the film, is considered to be nondiegetic. "Non-diegetic sound, also called commentary or nonliteral sound, is any sound that does not originate from within the film's world. The film's characters are not able to hear non-diegetic sound. All non-diegetic sound is added by sound editors in post-production" (MasterClass, October 2019). This idea can be seen in virtually every movie you watch today, and a great example of non-diegetic sounds is seen in the movie Jaws, directed by Steven Spielberg. Almost everyone knows the ominous music that is played as the great white shark, Jaws, approaches the main characters boat. The ominous sounds that the audience is hearing is considered background music because the film's characters and plot are unaffected by the sounds produced. The characters within a film never actually hear any of the background music because it is only meant to influence the audience, setting a mood that adds to the immersive aspect of the viewing experience. The example shown in the movie Jaws is a very effective example of setting a films mood using non-diegetic sounds. Those viewing the film cannot help the chills that creep up their spine and the feeling of fear as they anticipate the horror that is about to take place.

The transition between diegetic and non-diegetic sounds can be seamless and often confusion occurs trying to determine the difference between the two in any given scene. "A character hums a tune (diegetic sound), and that humming sound turns into an orchestral version of the same tune (non-diegetic sound), which carries over into the next scene" (MasterClass, October 2019). In the matter of seconds, the type of sound being heard can switch from being diegetic to non-diegetic and vice versa. The two different sounds can be combined and used to form what is considered a "trans-diegetic sound." "Trans-diegetic sound refers to any sound that moves in between non-diegetic and diegetic, or vice versa. Trans-diegetic sound helps bridge or link two things, like transitions between scenes" (MasterClass, October 2019). Trans-diegetic sounds are used in film to both set a mood within the audience watching, while also affecting the world and plot in which the film takes place. The idea of a trans-diegetic sound allows producers to add more depth and detail to the film they produce. The incorporation of these different concepts of sound better immerses the audience watching and allows the producer to further influence the audience's thoughts and emotions towards the film.

Another important sound type featured in any well-made film is an object sound.

Object sounds add depth and intensifies the mood created in a film using non-diegetic sounds.

"Object sounds make a film more realistic. For example, if a character walks in the snow, the audience should hear the crunching of their footsteps. If a character is standing on a busy street, we hear the natural ambiance of the city" (MasterClass, October 2019). Object sounds play on the common experiences and cultural backgrounds of those watching the movie. Most people can picture the crunching sound described of someone walking through the snow and many can even mentally picture themselves performing the action. Object sounds allows any

audience member the chance to step into the shoes of the star character and producers are able to accomplish this by influencing common experiences had by the masses. In doing so, subjectivity of experiences becomes less of a problem and a common take away can be had, just like the work of an influential painter.

Conclusion

We have shown that cinematographers avoid the subjectivity of human experience by constructing their films to play on common or similar experiences had by those living in similar cultures or societies. In doing so, we can show how cinematographers use semiotic techniques and concepts to elicit a certain message, feeling, or emotion within its audience. Helping expose the affects a cinematographer has on an individual's conceptual representations and mental cognitive processes. The same idea can be used when trying to understand the effect any form of communication has on either the sending or receiving party. As we have shown, by understanding linguistic semiotics and concepts found in the realm of structuralism, the semantic and syntactical structure of natural language shows how meaning is derived and portrayed from individual symbols and strings of symbols. This same concept is applied in almost any design process and specifically is very prominent in user centered design. Don Norman exposes they ways in which the ideas discussed previously can be incorporated into designing objects we interact with every day in his book, The Design of Everyday Things (2013). Just like much of the work done by Susan Langer and Roland Barthes, the individual parts of any form of expression adds meaning to the overall message being portrayed. Therefore, the concepts and techniques used in film to influence its audience can be applied to any conceptual system to understand how meaning is derived and interpreted. So, understanding these concepts will allow them to be

applied anywhere, whether it is a painting hung in the Smithsonian or the design of the next best self-driving car.

Instead of examining the way in which meaning is derived and interpreted from multiple different disciplinaries separately, one can look at all the interdisciplinary perspectives through one lens. "Cognitive Semiotics (hence, CS) can be defined as an interdisciplinary matrix of disciplines and methods, focused on the multifaceted phenomenon of meaning" (Soloman & King, 2011). Another definition or explanation of cognitive semiotics is it is considered an area of study that "integrates methods and theories developed in the disciplines of cognitive science with methods and theories developed in semiotics and the humanities, with the ultimate aim of providing new insights into the realm of human signification and its manifestation in cultural practices" (Soloman & King, 2011). All the techniques that we have shown to relate to both semiotics and other related fields like linguistics, anthropology, and psychology, all fall under cognitive semiotics. Cognitive semiotics is not considered a subfield of semiotics, it "is defined either in terms of "domain" (in the manner of e.g. biosemiotics, semiotics of culture or social semiotics), or "modality" (e.g. visual semiotics, text semiotics). Not belonging to a single discipline, it is not a particular semiotics "school" (e.g. Peircean, Saussurean, Greimasian), and even less a particular theory (e.g. Existential Semiotics)" (Soloman & King, 2011). As work progresses in the field of semiotics and film theory, as there is still so much to explore, it would be crucial to examine future problems using the perspective of cognitive semiotics, as it applies to more areas of study than one could imagine.

Through the progression of this paper we have shown how various semiotic theories can be applied and utilized in film to form the influential message projected. We have seen how cinematographers encompass meaning in various forms and how any aspect of a film can be

considered a sign attributing meaning to film as a whole. Although it may seem like we have a complete understanding of semiotics, how meaning is created, and how signs and sign manipulation influences cognitive processes and conceptual representations in the mind, we are only skimming the surface. Due to the subjectivity of human experience and our little understanding of human emotion, there is still much to learn about how meaning is modeled and derived within an individual's mind. We may not currently have all the answers we desire, and those answers may not arise in the next century. As a community we have the capabilities of finding the desired answers we seek, by cooperating with one another and further refining current theories and concepts, while also forming new theories and perspectives.

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