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Understanding the communicative potential of Animation

University of the Witwatersrand

School of Digital Arts

Animation Master

Name: Dirk Krommenhoek

Student Number: 679885

Supervisor: Kieran Reid

Abstract

Animation is the study and art of motion; however, the separation between animation and cinematography is uncertain due to hybridized images. The aim is to discover how animation communicates effectively. This research approaches animation as a complex visual communication system by employing concepts from semiotics. Animation is analysed on a 'mimetic to abstract' continuum along with the consequence produced by the various configurations of the continuum. Investigating the differences in the icon offers a reflection on the ontological and modal difference between the photographic image, photorealistic image and the rule-governed transpositions of an object (degrees of arbitrary and motivation). The distinction highlights properties that are unique to 'genuine animation', 'genuine cinematography' and their hybrid state.

Declaration

I, Dirk Krommenhoek, declare that this research report is my own unaided work. It is submitted for the degree of Master of Arts in Digital Arts at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

Signature:  Date: 16th day of February 2018

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Keywords

Animation, Semiotics, Sign, Indexical, Symbolic, Iconic, Indexicality, Virtual, Mimeses, Abstraction, Photorealistic, Cinematography.

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Chapter 1: Introduction

> "Film animation is a visual communication technique whose basic potential is to clarify the complex, to reveal the invisible, to teach quickly and concisely." (Halas 10)

In the brief declaration concerning the 'potential' of animation 'to clarify the complex', John Halas illustrates and alludes to a fundamental aspect of animation in the manner it communicates. The observable notion is the potential to instruct, however the emphasis is perhaps not of pedagogic or didactic but rather on effective communication. Paul Wells teases out the expressive elements found in animation and notes animated films have a "special ability to communicate complex, and somewhat contradictory, ideas" (Wells 6)

This research aims to address a fundamental query: How is the medium of animation, a complex visual messaging system, able to communicate effectively across the mimetic-to-abstract continuum? The query divides the investigation into two subordinate branches: animated images that are discernibly created (less mimetic, more abstract) and animated images that are not discernibly created (highly mimetic, less abstract). The second branch of the investigation considers mimetic animation and the relation to cinematography[1]. The paper contemplates what is unique to animation and applies this understanding to the dichotomy of animation and cinematography. This is an investigation of frame-by-frame animation and requires two components: the analysis of the singular image and the combination of images as motion. To initialize the investigation, the term animation requires definition to delineate what qualifies for analysis.

Defining Animations

The term 'animation' is conceptually loaded and nebulous; therefore, formulating a definition with precision is bound to limitations. Donald Crafton on the taxonomy of animation notes that, "… [animation] means more than identifying a certain mechanism for showing pictures in rapid

[1] The term cinematography implies the process of capturing movement through light patterns and not the principles of cinematic language or the principles of the camera extracted into a virtual camera/virtual cinematorgrapher, as noted by Lev Manovich in *The New Language of Media* (Manovich, The Language of New Media 78-88).

succession. We need to think about what deploying it as an act of retrospective naming does to the object under study" (Crafton 96).

Defining animation presents three complications. The first complication is that animation is interdisciplinary by nature. The term 'animation' does not denote a particular mode of production, epoch, technique, technology[2], aesthetic or set of conventions. Paul Wells refers to this as the "illusiveness of the form" (Wells 8). Animation to an extent functions as a meta-medium in that it in itself is not painting, illustration or sculpture; however, it may incorporate various media into itself. Animation is, therefore, "a highly complex form exemplified in numerous ways" (Wells 8) with an array of influences requiring "a broad understanding of art production outside of motion pictures" (Furniss 62).

The second complication is the consensus gentium for what qualifies as animation. Paul Wells noted that, "Animation, in some ways, has become synonymous with Disney" (Wells 3) - specifically Disney's formalism. Disney 'as a synonym' for animation demonstrates how a specific type of animation is often defined in relation to the popular mode of production. The popular mode of production has the tendency to set a template of animation to a general audience.

The third complication is the unproductive dichotomy between animation and cinema in academics. Authors[3] have noted animation's marginalised status compared to cinema. "In some cases, when animation was acknowledged, it was subsumed under another subject matter, such as avant-garde" (Furniss 3). In a contemporary perspective, there is an inversion where cinema is considered a subset of animation. The dichotomy between animation and cinema has evolved into a state where each other's principles are undermined. The section *Situating Animation into Motion Pictures* addresses this further, however first we must consider a brief etymology of animation.

[2] Various optical and visual illusion gizmos (or 'toys') were developed from the 1800s upward: "the Phenakistoscope pioneer by Plateau in 1831; the Zoetrope, invented by W.G. Horner in the 1834; Coleman Sellers' Kinematoscope in 1861, and the Praxinoscope, described earlier, and patented by Reynaud 1877" (Wells 12). This is certainly not an exhaustive list but it does detail an important selection of optical devices that helped develop animation.

[3] The scholars are Paul Wells in his Understanding Animation, Donald Crafton in *The Veiled Genealogies of Animation and Cinema* , Lev Manovich in *The Language of New Media*, Tom Gunning and Muareen Furniss which noted, "The denigrated status of Animation Studies in universities is largely due to the belief held in many that animation is not a "real" art form because it is too popular, too commercialize, or too closely associated with 'fandom' or youth audiences to be taken seriously by scholars " (Furniss 3)

Brief Etymology of Animation

To define animation, in part, is to study the etymology of the word. The word animation has two ordinary means, both of which are serendipitous in defining animation: one meaning refers simply to movement, while the other refers to coming alive. (Crafton 97). Paul Wells pithily notes, "To animate, and the related words, animation, animated and animator all derive from the latin verb, animare, which means 'to give life' and within the context of the animated film, this largely means the artificial creation of the illusion of movement in inanimate lines and forms" (Wells 10). The central theme is 'to give life'. This postulates that animation resembles liveliness and to bring aspects of life through the service of motion. Thomas Lamarre observed that "[t]his experience in which 'moving' and 'coming to life' become synonymous has encouraged commentators to see in animation an animistic worldview, a world in which everything is endowed with life force or spirit and maybe even a soul" (Lamarre 118).

The early use of the word animare was theological, as an "act of endowing with a spirit or soul" (Crafton 97). The term used as an adjective "identified the presence of supernatural beings" (Crafton 97) and "the concept of animation was an example of 'magical thinking' in the ancient writings" (Crafton 97). The 17th-century Anglophonic usage borrowed and augmented the term, where "Animator with a capital A was a euphemism for God" (Crafton 97).

The term developed in French secular usage, where "[*a*]*nimer* as a transitive verb came to mean to arouse or awaken" (Crafton 97) and "[t]he reflexive form of the verb, *s'animer*, means to intensify, as when a face lights up, a discussion becomes heated, or a nightclub livens up after midnight" (Crafton 97). The term 'animate' was used in a figurative sense and meant "to impart vividness" (Crafton 97). The expressions were utilized in secular modus with the proviso to the theme of 'to give life' or 'semblance of life' as referential. Animation accumulated the atavistic theological 'to give life' meaning and the secular 'simply moving or changing' meaning.

> The commonality in these definitions is that *animer* and *to animate* are performative. They are statements that execute an action, cause something to be done or status to change. To animate effects a dramatic transformation from one state to one much different […] There was a glissando in the 19th century between this semantic use of animation as performative to animation as actual performance. (Crafton 98)

Crafton accredits Charles-Emile Reynaud as a key figure for expanding animation's secular usage from performative to both performative and performance. "Reynaud identified not the pictures, but the act of projecting them, the performance" (Crafton 98). The invention liberated the displayed image from the mechanisms that displayed it and no intervention from a third party was required. "Not only does the machine generate liveness in its images, it's implied that the pictures move by themselves" (Crafton 98). Reynaud had a "clear attempt to join the two functions to his machine, 'to move the drawings' and to 'transmit life' to them" (Crafton 98).

The etymology of animation indicates how the term animation attained its amalgamated meaning; however, this does not situate animation in relation to motion pictures as a whole.

Situating Animation into Motion Pictures

Another component to defining animation is to address what animation is in relation to motion pictures; specifically cinematography, as animation and cinematography are both media of movement.

> A prevalent line of thought in contemporary film and media studies asserts that the media form that became cinema is an instance or special case of the larger encompassing entity, animation. Accordingly, the cinema of animation not only pre-dates cinema but envelops all cinema. (Crafton 94)

Donald Crafton in *The Veiled Genealogies of Animation and Cinema* analyses the validity of the statement that "film is a subset of animation" (Crafton 94) . The polemical view, as described by Tom Gunning, is that animation is a "super-genre of moving image media" (Gunning, *The Transforming Image* 52) which was posited by Lev Manovich in his *Language of New Media*. Crafton stipulates an interesting counter point to the notion that cinema originated from animation: He stated that,

> My objections to the genealogy that animation begat cinema are that it may be largely semantics, deploying disingenuous definitions of animation and cinema; that it uses the power of naming to create categories based on affinities that may be misleading. (Crafton 94)

The inversion of the marginalized status, where animation has now enveloped cinema, can obscure the potential of both cinematography and animation's communicative ability and complicate the characterization of either medium. The assimilation of either medium into the other is, therefore, to the detriment of both media. It is best to consider them as separate media under the umbrella term motion pictures[4].

Donald Crafton summarizes the two notions for why contemporary media studies asserts that animation 'begat' cinema. The first notion:

> There is the historical argument that the optical toys and other 19th-century devices synthesizing motion with sequential drawings paved the way for cinematography, which merely applied the same concept to photographs. (Crafton 94)

The second notion:

> Then there is the ontological argument that cinema arose conceptually from and is therefore a subcategory of animation as a domain of knowledge. (Crafton 94)

Crafton's objection[5] to the first notion is due to the association fallacy it presents: "The trouble comes from the easy connection made between 'animated' and 'cinema'. To be animated is not necessarily to be cinema." (Crafton 96). His objection to the second notion is that such reasoning falls to the "*post hoc ergo propter hoc* fallacy" (Crafton 97), which stipulates that simply because event X occurred temporally after event Y does not mean that event Y caused event X. In question is the causality: causal coherence between the two separate phenomena is not simply because they followed each other sequentially. The ambiguity is that the word 'animation' allows for the grouping of loosely related concepts in disingenuous ways. The term animation preceded *cinéma* by centuries and acquired uses that have nothing to do with film.

[4] The phrase 'motion pictures' encompasses all types of moving pictures. The term cinema refers to motion pictures produced by cinematography. In this interpretation, cinema is not a synonym for the venue where the motion picture is shown; nor is it a generic term for pictures that move. The differentiation is so that the terms do not act as synonyms but instead have their own explicit meanings. The necessity for differentiation is because the terms cinema, film, motion pictures and animation are often used interchangeably. The distinction between terms is crucial for the discussion.

[5] Donald Crafton's use of the word cinema is interpreted as cinematography rather than synonym for theatre, film or motion pictures in general.

The fact that animation and cinematography share the same principle technique[6] in producing the 'animated effect' should not justify the assimilation of either medium into the other as subset-superset. The notion that cinematography shares common characteristics, such as "favoring the 'viewer mode of attraction' over the 'player mode of attraction'" (Crafton 99) or the projection of images that appear to move by themselves are only the aspect that make them superficially similar. Indeed, established animators such as John Halas and Joy Batchelor, "posit the view that, 'if it is the live-action film's job to present physical reality, animated film is concerned with metaphysical reality – not how they look, but what they mean " (Wells 11). Paul Wells suggests, "[T]o view animation as a distinctive form that works in entirely different ways from live-action cinema" (Wells 5).

Ultimately, as Tom Gunning warns, "Manovich makes us aware that all moving images could be considered forms of animation, this insight should not erase the important distinction between motion picture and photography and traditional animation" (Gunning, *The Transforming Image* 54). The distinction between animation and cinematography in contemporary media is complicated by the hybrid image. To understand the hybrid image a continuum of motion pictures is required.

Animation as a continuum

Maureen Furniss offers a practical definition of animation: "[T]he imagery is recorded frame by frame and the illusion of motion is created rather than recorded" (Furniss 5). It is important to note the subtle distinction between 'created rather than recorded' motion. Muareen Furniss observes two trajectories generally applied to understanding animation. The first is the methods employed to produce animation. The second is animation's relation with live-action (its mimetic status).

Muareen Furniss provides perspective on the matters of 'motion pictures' by proposing an alternative to the usual process of defining animation. She establishes animation on a continuum between mimeses and abstraction. This is an interesting proposition that reduces the need of an absolute or rigid definition and allows for a broader discussion of the topic of animation. "[A] continuum represents all possible image types under the broad category of 'motion picture production' " (Furniss 5). This is an inclusive approach, which neutralizes the incompatible subset-superset relation of animation and cinematography. The continuum is constructed relatively and

[6] Donald Crafton indicated that the technique for creating apparent motion is exploited by the anorthoscope, yet unlike the phenakistiscope it is not credited as an early precursor that caused cinema or animation.

arbitrarily, meaning there is not a fixed point. The terms 'abstract' and 'mimesis' act as optimal[7] descriptors, as the structure relates the comparison of animation to live-action. Muareen Furniss describes memesis as "the desire to reproduce natural reality (more like live-action work)" (Furniss 5) and abstraction as "the use of pure form - suggestion of a concept rather than an attempt to explicate it in real life terms (more like animation)" (Furniss 5).

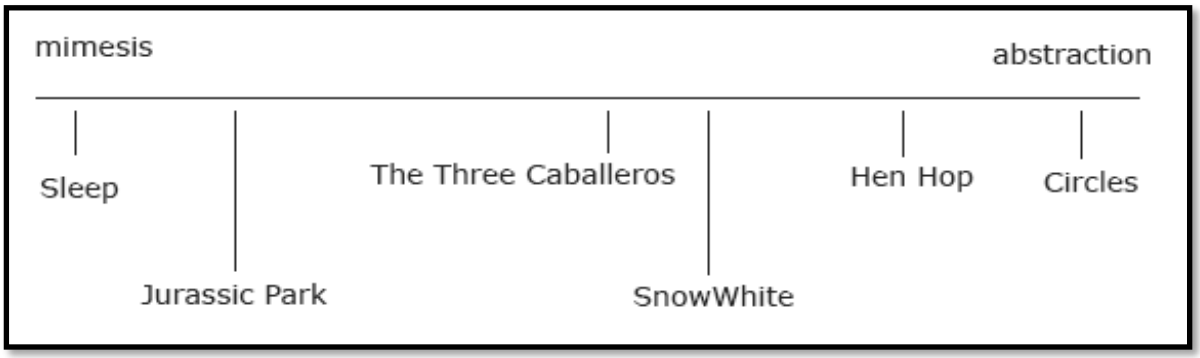


Figure 1. Muareen Furniss' example of the mimesis–abstraction continuum, illustration from: Furniss, Maureen. Art In Motion: Animation Aesthetics. John Libbey Publishing, 2007, p.5 . Print

The 'mimesis–abstraction' continuum is especially serendipitous for contemporary motion pictures where the staple of contemporary motion pictures is a hybrid image. The hybrid image utilize photorealistic computer generated imagery (highly mimetic CGI) and visual effects[8] (VFX) along with cinematography (live-action). The advantage of the continuum is the acceptance of difference and similarity, where neither difference nor similarity is favoured. The continuum as stated, however, does not define a distinction between highly mimetic animation and cinematography. The continuum's principle criteria are only that of 'mimesis-abstraction relation' and motion. This prompts further investigation of motion in motion pictures.

[7] The use of the word 'optimal' is to illustrate the best fit approach. "Although the terms 'mimesis' and 'abstraction' are not ideal, they are useful in suggesting opposing tendencies under which live action and animated imagery can be juxtaposed." (Furniss 5 pp)

[8] Visual Effects, in this essay, refers to the manipulation of images outside the live action cinematography, which generally but not always consists of computer generated imagery. Visual effects are separate from special effects, which are filmed rather than post processed.

Motion and The Illusion

An important component to defining animation is considering 'apparent motion' perception and the difference between 'apparent motion' and 'real motion', for "movement forces itself on every spectator" (Munsterberg 57). Perception contributes a fascinating ingredient to human experience in that it is unreliable. Illusions serve as the reminder of an imperfect[9] perception. When viewing an animation, the objective reality is a rapid display of sequential images. If the experience were accurate, it would generate impressions of static images. Yet, this is not the case as the experience is motion instead. Donal Crafton summarizes "the minimal conditions for the 'animation effect' to occur" (Crafton 96).

> [T]he elemental images must resemble each other enough to enable their perception during the animation event as one coherent body or form. Yet they must vary sufficiently to produce an impression of metamorphosis or movement; if an image departs too much from the ones before and after, the impression will be of a jump between pictures, and not of one picture moving. There has to be a mechanism for allowing one image to substitute for the next without revealing the transition, which would produce a blur, not motion […] The times of exposure and occlusion must fall within specific parameters of human vision and be perceived within complex cognitive frameworks. The latter are physiological, but also highly subject to cultural influences. (Crafton 96)

The persistence of vision theory derives somewhat jointly from Peter Mark Roget[10] and Joseph Plateau. "[W]hen the human eye is presented with a rapid succession of slightly different images, there is a brief period during which each image, after its disappearance, persists upon the retina, allowing that image to blend smoothly with the next image" (Anderson and Anderson 4). It is the impression that remains shortly after visual stimulus has ceased. The persistence of vision theory was, and to some extent still is, largely credited for perceiving the phenomenon of motion in motion pictures; however, this is said to be disproven by Marx Wertheimer. *The Myth of Persistent Vision Revisted* by Joseph and Barbara Anderson stated that, "the proposed fusion or blending of images

[9] 'Imperfect' was used to state the inability to adequately and accurately detect what is presented - the veridical truth that is the static image.

[10] Roget was not crafting the persistence of vision theory per se, and did not intend to apply it to motion pictures. He was investigating the optical illusion created by wheel spokes and how it seemed to be motionless when spinning. He was observing real motion and apparent motion. (Munsterberg 6). Joseph Plateau invented the phenakiscope.

could produce only the superimposition of successive views" (Anderson and Anderson 5), which would produce an overall image that is overlaid with multiple images. Joseph and Barbara have ascribed myth status to the persistence of vision theory, claiming that it "found its way into film literature in two ways: 1) through a lack of careful scholarship among film writers, and 2) because of a considerable amount of confusion about the nature of apparent motion among early investigators of the phenomenon" (Anderson and Anderson 5). Persistence of vision might account for the constancy of a light source that rapidly flickers, such as the traditional movie projectors that would blank-out the transitioning between frames to prevent a blurred image.

Marx Wertheimer offered an improved insight by describing two forms of apparent motion: the beta movement (known as optimal apparent motion) and the phi phenomenon (known as 'pure' apparent motion). Beta movement occurs when presented with static images at the 'right speed'. Phi phenomenon is "'pure' movement in the sense that the movement is perceived in the absence of any object seen to be changing position in space" (Steinman, Zygmunt and Filip J 2258). The insight concerning beta movement and phi phenomenon is also debated (Anderson and Anderson 7).

Hugo Mustenberg in *Photoplay: A Psychological Study* considered both theories. While Mustenberg's focus is on cinema[11], it is applicable to animation. Mustenberg determined that persistence of vision in itself was insufficient at explaining the experience of apparent motion. He did not disregard the theory as an attributing factor, rather the experience for him could not be reduced to seeing separate position. It also did not account for perceiving "a movement where no actual changes of visual impressions occur" (Munsterberg 61). He illustrated this by referencing an optical trick that induces motion from something unchanging and static[12]. Mustenberg pivots Wertheimer's findings to substantiate his suspicion about motion perception: that the "impression of motion is surely more than the mere perception of successive phases of movement" (Munsterberg 69). Mustenberg ascribes the bulk of the responsibility for understanding continuity and motion to the "complex mental process" (Munsterberg 69). He noted that what he had offered was not really an explanation, and in a contemporary setting, the insight that the mind creates the continuity and unity is perhaps not as interesting or novel; however, his comparison between theatre and motion pictures offers intriguing insight.

[11] Munstenberg was trying to substantiate why cinema was not inferior to theatre. Theatre had proper depth and real motion. Film only had a partial depth and apparent motion. His concern was to validate cinema as more than just a cheap theatre knock off.

[12] The optical trick Munstenberg was referencing in his book was a black spiral spinning disk that, if stared at for a sufficient amount of time and then removed from sight, would cause the viewer to see shrinking and swelling images after they had looked away (Munsterberg 62).

> The theater has both depth and motion, without any subjective help ; the screen has them and yet lacks them. We see things distant and moving, but we furnish to them more than we receive; we create the depth and the continuity through our mental mechanism. (Munsterberg 71)

This distinction between theatre's movement and motion picture's movement is that theatre requires no 'subjective help' in the form of a spectator. It requires no 'subjective help' because it can only ever be real motion. Motion pictures, by contrast, require the 'complex mental processes' to generate apparent motion, which would otherwise remain a sequence of rapidly displayed images. The subjective involvement is the difference between real motion and apparent motion. The involvement of mental processes hinges on well-crafted metamorphosis.

Metamorphosis as an Essential Trait

A differentiating feature of animation is 'metamorphosis'. *The Transforming Image: The Roots of Animation in Metamorphosis and Motion* by Tom Gunning attributes 'metamorphosis' as a unique feature that only animation can access without limitation: He stated that,

> I want to place the defining aspect of animation – its creation of moving image- in relation to perhaps a more fundamental, if less immediately evident, impulse: the ability of an image to transform. (Gunning, *The Transforming Image* 55)

Tom Gunning emphasizes the transformation that occurs between images – the interplay of the image. The power of the "transforming image relates less to the goal of accurately portraying moving objects than to magical metamorphosis, to potentiality more than actuality" (Gunning, *The Transforming Image* 56). His remark of the potential over the actual is of particular interest and is further discussed in the section *Virtual Movement and Animated Realities*.

Gunning isolates the metamorphic ability of animation as a motivated separation between cinematography and animation. He urges the most intense usage of metamorphosis. Muareen Furniss admits that, "metamorphosis is a tool that lends itself to the development of fantasy" (Furniss 78) though it is not an exclusive feature of animation because metamorphosis "is apparent to some extent in more realistic scenarios" (Furniss 78). The very act of moving, unless inorganic,

"reveals the contortions that the body goes through in any act of movement" (Furniss 78), a concept well understood at Disney and one which has found its ways into fundamental principles of animation.

Suspension of Disbelief and Attention in Animation

An element that is required for animation to be effective in communication is the suspension of disbelief. Samuel Taylor Coleridge, in his '*Biographia Literaria, Or, Biographical Sketches of My Literary Life and Opinions',* originally described the process as, "to transfer from our inward nature a human interest and a semblance of truth sufficient to procure for these shadows of imagination that willing suspension of disbelief for the moment, which constitutes poetic faith." (Coleridge 3).

The important feature being a 'willingness' to accept the images presented to suspend disbelief, otherwise it would be discarded as uninteresting or lacking relevance. Suspension of disbelief is the ability to restrain logical judgement about the validity of what is being presented. Indeed, there are limits, as no one fully restrains their judgement into naïve believability. Motion pictures in general require some suspension of disbelief; however, due to the nature of animation it could be argued that an audience can either be more obstinate or be more accepting to the renderings of animation. Samuel notes "two cardinal points of poetry" (Coleridge 1) from which this suspension of disbelief could be obtained. The first being "the power of exciting the sympathy of the reader by a faithful adherence to the truth of nature" and the second being "the power of giving the interest of novelty by the modifying colours of imagination". (Coleridge 1).

Hugo Munsterberg illustrated a comparable but somewhat different view. At first the technological wonder (the novelty) of films and optical devices were able to capture and enthral the viewers; however, soon thereafter "[t]he mere enjoyment of the technical wonder as such necessarily faded away and the interest could be kept up only if the scenes presented on the screen became themselves more and more enthralling" (Munsterberg 19). In Coleridge's terms, the film had to 'excite sympathy' in the viewer and allow for the participation through imagination with 'human interest' from the audience to be invested and enthralled. The 'advance', for Munsterberg, 'was internal' because it was driven by an aesthetic cause or as Munsterberg would say the "esthetic idea" (Munsterberg 21). Munsterberg thought that,

> A work of art may and must start from something which awakens in us the interests of reality and which contains traits of reality, and to that extent it cannot avoid some imitation. But it becomes art just in so far as it overcomes reality, stops imitating and leaves the imitated reality behind it. (Munsterberg 143)

The Photoplay investigates the need for a scene to be more than an impression. A scene worthy of attention is layered with meaning. Munsterberg finds attention at the centre of how chaos is organized into experience (Munsterberg 73). Attention is divided into two entwined forms of attention: voluntary and involuntary. Voluntary attention is to "approach the impressions with an idea in our mind as to what we want to focus our attention on" (Munsterberg 74). Involuntary attention is guided by external influences rather than internal. "The cue for the focusing of our attention lies in the events which we perceive" (Munsterberg 75). Attention makes vivid the subject of interest, while fading non-essentials out of our immediate consciousness. Munsterberg illustrates the requisites of attention and a lack of objective independence as compared with reality (Munsterberg 90), only by paying attention do the images represent anything other than light patterns.

> The act of attention which goes on in our mind has remodeled the surrounding itself. The detail which is being watched has suddenly become the whole content of the performance, and everything which our mind wants to disregard has been suddenly banished from our sight and has disappeared. (Munsterberg 87)

The notion of focused attention is akin to immersion. Immersion is a term applied to media where interactive participation is required. The participation within immersion is applied to the player model rather than to a viewer model and, therefore, operates notably different.

A Summarized Definition of Animation:

The components of animation condensed into a functional definition:

Animation is the study and the art of synthesised motion, ranging from various mimetic to abstract signs, through a frame-by-frame process, which produces apparent motion for something otherwise inanimate.

Chapter 2: Semiotic Primer

Investigating animation's unique communicative potential requires specific concepts from semiotics. A general description of semiotics is the study of signs. The investigation is not a semiotic analysis of a particular piece. It is an evaluation of the semiotic concepts relative to animation: the models and the modes of different signs, how the literal and figurative is established visually, the modality of animation compared to cinematography and the 'responsibility of motion' in animation. Understanding image types will enable an analysis of the unique hybrid image within contemporary animation and cinematography. The investigation into animation, cinematography and the hybrid image is to better understand the representation of reality as not "all representations of reality are of equal status – quite the contrary" (Chandler 12). This research uses Daniel Chandler's *Semiotics: The Basics* as a foundational text on semiotics concepts[18].

A core criticism of semiotics, noted by Andrew Dudley as "obviously troublesome" (Dudley 67), is the 'extreme generality' and 'epic scope' of semiotics. The criticism reflects the unwarranted overreach of semiotics into other disciplines, which often enforce a linguistic influenced perspective on that discipline. Linguistics significantly influences semiotics, which may complicate the application of semiotics to extra-linguistic communication systems. Semiotics is voluminous with multiple debates[19] and features various theories that often compete and contradict.

Criticism aside, what makes semiotics important is its concern with representation. It is capable of locating the differences and similarities in types of representation. Semiotics has a "reputation for being dense with jargon" (Chandler 11); however, the jargon allows for specificity that alleviates ambiguity. An important aspect to note, which is often underplayed, is that "we need not accept the postmodernist stance that there is no external reality beyond sign-systems, studying semiotics can assist us to become more aware of the mediating role of signs and of the roles played by ourselves and others" (Chandler 11). An optimum approach is to cover the topics that are relevant to animation as a primer starting with the models of sign.

[18] Daniel Chandler's book does an excellent job of delivering foundational semiotics theories and discussions in a clear and concise manner.

[19]Film as single, double, triple or no articulation is debatable. This essay, to some capacity, explores the extent to which photographic and cinematic codes produce a 'language'. Authors such as Eco, Metz, Pasolini and Barthes have noted different stances on the matter.

Models of Sign

The semiotic study of sign ordinarily consists of two dominant contemporary models. The first is the Swiss linguist Ferdinand de Saussure's dyadic model of semiology. The second is the American philosopher and pragamaticist[20] Charles Sanders Pierce's triadic model of semiotics. (Chandler 13). The dyadic and triadic models are separate but complementary models in understanding sign, as each model has "different philosophical implications" (Chandler 59), therefore, different advantages and disadvantages in applications. It is best to start with the Saussurean model for a base understanding of sign.

The Saussurean Model

The Saussurean model of sign is dyadic in that it divides sign into two parts: the signifier and the signified. "[T]he *sign* is the whole that results from the association of the signifier with the signified" (Chandler 15) and is referred to as signification. In the Saussurean model, the sign must have a signifier and a signified, changing either will result in a different sign, as they are inseparable. The Saussurean model 'brackets the referent' which means it does not reference (or at least not explicitly) the external world. The bracketed referent is worth noting as the Peircean triadic model deviates from this substantially. The distinction between the signifier and the signified is that: the signifier is the 'form' the sign takes and the signified is the 'concept' the sign refers to.

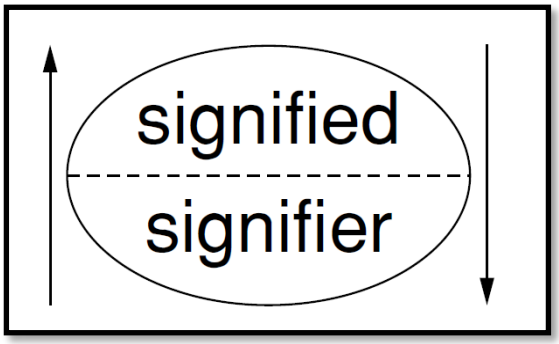


Figure 2. The relation of signified and signifier, illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.14 . Print

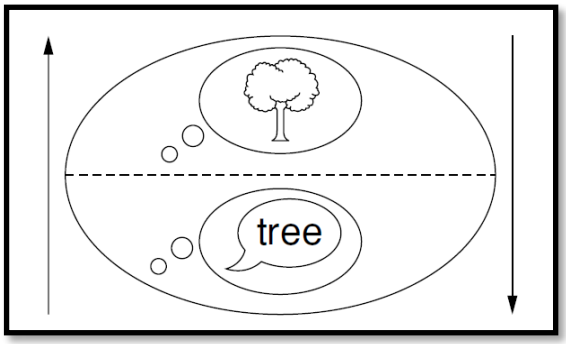


Figure 3. The difference between signifier (word) and signified (concept), illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.15 . Print.

[20] Peirce identified himself as a pragmaticist in an attempt to distinguish his concept of pragmatism from others as he disagreed with their pragmatics. His philosophy influenced his thinking about sign.

Saussure was interested in the immaterial linguistic sign, which sets emphasis on the psychological dimension of sign; however, "[Saussure] disliked referring to it as 'abstract'" (Chandler 17). Daniel Chandler notes two points of immateriality. The first is the concept: the signifier (or the word) does not invoke the object itself but the concept of the object – the signified. The second is the impression: the signifier is fashioned immaterially through formulating it as an impression and not as the actual material phenomenon, therefore, removing the material dimension of the signifier itself. If interpreted this way, both the signifier and the signified may be regarded as form rather than substance (Chandler 15).

In contemporary use the basic Saussurean model "tends to be a more materialistic model than that of Saussure himself" (Chandler 15) where the signifier is interpreted as the material form of the sign. "Contemporary theorists tend to acknowledge that the material form of the sign may generate connotations of its own" (Chandler 52). The material form of sign is determined by the medium. Valentin Voloshinov argued that Saussure's ideas are "'the most striking expression' of 'abstract objectivism'" (Chandler 52) and insisted that all signs have a material aspect to it.

"Saussure argued that signs only make sense as part of a formal, generalized and abstract system. His conception of meaning was purely *structural* and *relational* rather than *referential*: primacy is given to relationships rather than to things" (Chandler 18). The value of sign requires a system of sign as "[no] sign makes sense on its own but only in relation to other signs." (Chandler 18). Sign for Saussure has "no 'absolute' value independent of this context" (Chandler 19). If signification is the relationship between the signifier and the signified; then the '*value*' of the sign is the relationship of the sign to other signs.

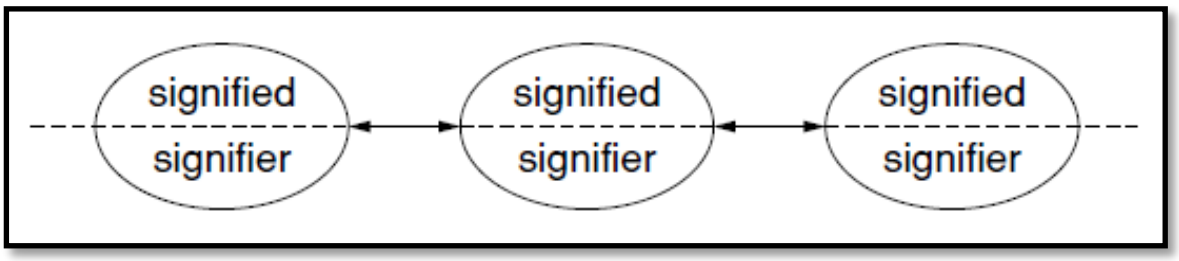


Figure 4. The relation between signs that generates the signs value, illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.20 . Print.

In the Sausserean model, the relational value of a sign to a sign is 'differential' because it emphasizes the "differences between signs" (Chandler 21). The process of distinguishing a sign is to contrast it with other signs in the system, therefore, "what distinguishes a sign is what constitutes it" (Chandler

21). The process of differentiation[21] is 'negative and oppositional' as it is the demarcation of what the sign is not. An undifferentiated term would apply to everything. The process of differentiation does not imply negativity in the sign itself, for "the sign in which they [the signifier and the signified] are combined is a *positive* term." (Chandler 22) and "the moment we compare one sign with another as positive combinations, the term *difference* should be dropped" (Chandler 22) because two signs are not different from each other; they are only distinct in that they are "in *opposition* to each other" (Chandler 22).

The Saussurean model is best suited to linguistic[22] and symbolic mode signs, partly due to the model's bracketed referent and immateriality, but largely due to relatively arbitrary sign composition. The Saussurean model emphasizes arbitrariness in the relationship link between the signifier and the signified; however, with caution the principle of arbitrariness may apply to the whole sign-system. The relationship link for Saussure has no inherent, essential or natural connection. The arbitrary relationship of the signifier and the signified is best exemplified in the statement, "there is nothing 'treeish' about the word 'tree'" (Chandler 22). Arbitrariness allows for versatility in language, as it does not enforce a "one-to-one link between signifier and signified" (Chandler 25). A signifier can apply to multiple signifieds and vice versa; however, that constitutes as being different signs. Saussure's analysis on the language state was synchronic and not diachronic.

Saussure avoided relating the "principle of arbitrariness to the relationship between language and an external world" (Chandler 22). Saussure alluded to the importance of the external world, as Daniel Chandler illustrates with a quote from Saussure, "the street and the train are real enough. Their physical existence is essential to our understanding of what they are" (Chandler 22).The principles of arbitrariness can be controversial and radical because it allows for an 'autonomy of language' that is not strongly bounded to reality. If reality is considered a 'seamless continuum' then the result of dividing reality in categories might be arbitrary. Language, however, cannot be completely arbitrary as it would destroy its communication purpose and render itself useless. "Saussure admits that 'a language is not completely arbitrary, for the system has a certain rationality'" (Chandler 26). The section *The Implications of a Referent* elaborates on this, however, knowledge of the Peircean Model of sign is required to compare with the Saussurean Model.

[21] Daniel Chandler explains 'negative oppisitional differentiation' through color. When teaching someone what the color red is you would show them an item that is red and then compare it with items that are not red but the same in all other regards. (Chandler 22)

[22] The Saussurean model is generally applied to language because the model 'phonocentrically ' privileges the spoken word . (Chandler 16)

The Peircean Model

The Peircean model, known as Semiotics, allows for a wider range of sign analysis beyond the linguistic signs by providing a 'logical taxonomy of sign types' and an explicit (non-bracketed) 'referent'. The Peircean model is triadic in structure:

1. The *representamen*: the form which the sign takes (not necessarily material, though usually interpreted as such) – called by some theorists the 'sign vehicle'.
2. An *interpretant*: not an interpreter but rather the *sense* made of the sign.
3. An *object*: something beyond the sign to which it refers (a *referent*). (Chandler 29)

In the Peircean model, sign is the unity of the representamen, the object and the interpretant. This interaction is called semiosis. The representamen is similar to the signifier. The interpretant is comparable to the signified; however, it differs in that "it is itself a sign in the mind of the interpreter" (Chandler 31), which can result in an infinite chaining of signs called an infinite semeiosis. The interpretant emphasizes the notion of interpretation from an interpreter; therefore, the idea of the interpreter is implicit in the interpretant. The object is the explicit 'referent' outside of the sign itself. "Peirce's *object* is not confined to physical things and like Saussure's *signified* it can include abstract concepts and fictional entities" (Chandler 33). The difference is that the "Peircean model explicitly allocates a place for materiality and for reality outside the sign system" (Chandler 33). Daniel Chandler warns against a tendency to collapse representamen (or signifier) into same notion as just sign, for "*sign* is the whole meaningful ensemble" (Chandler 30).

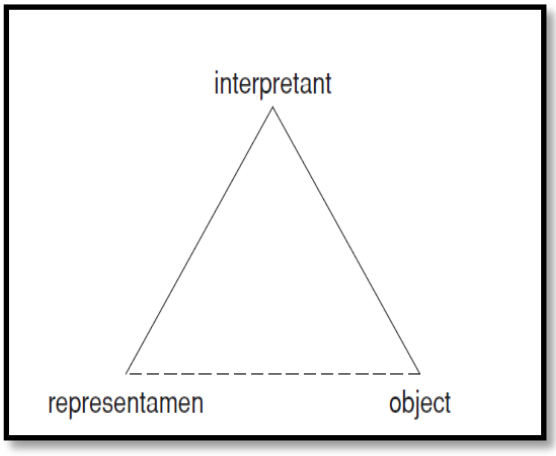


Figure 5. The triangular relationship between representamen, interpretant and object, illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.30 . Print.

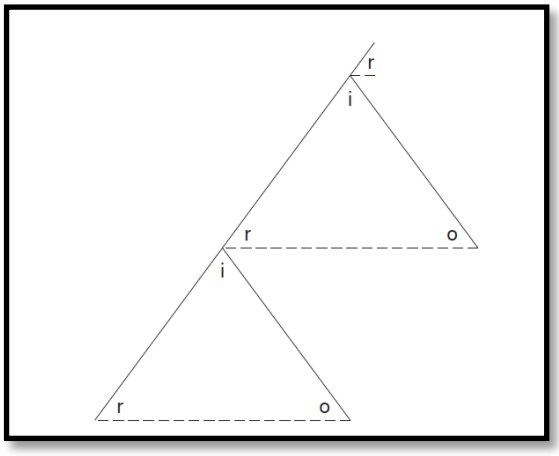


Figure 6. The interpretants acting as a sign to a sign, illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.32 . Print.

The dashed line between the representamen and the object indicates "that there is not necessarily any observable or direct relationship between the sign vehicle [representamen] and the referent [object]" (Chandler 30). The Peircean model becomes more novel with its introduction of sign modes.

Sign Modes

Pierce offered a fundamental 'typology' of sign with his tripartite classification – Symbolic, Iconic, and Indexical. Daniel Chandler insisted that it is more productive to refer to the typology of sign as a relationship mode between signifier and signified, rather than a classification of 'sign type'[23] because signs are not exclusively one mode (Chandler 36). A sign can combine different modes[24] and occasionally the context of the sign determines the mode of the sign. A photograph, which is iconic and indexical, can act as a symbol based on its usage. The three modes of sign in a decreasing order of conventionality:

1. **Symbol/symbolic**: a mode in which the signifier does *not* resemble the signified but which is fundamentally *arbitrary* or purely *conventional* – so that this relationship must be agreed upon and learned. (Chandler 36)

2. **Icon/iconic**: a mode in which the signifier is perceived as *resembling* or imitating the signified (recognizably looking, sounding, feeling, tasting or smelling like it) – being similar in possessing some of its qualities. (Chandler 36)

3. **Index/indexical**: a mode in which the signifier is *not arbitrary* but is *directly connected* in some way (physically or causally) to the signified (regardless of intention) – this link can be observed or inferred. (Chandler 37)

[23] Daniel Chandler attempts to keep his semiotic jargon consistent. He applies the terms signifier and signified to Pierces concepts of representamen and interpretant.

[24] Chandler illustrates the combination of sign modes with an example of a map. The map is indexical as it points to an actual location, iconic in that it utilizes an understanding of direction and symbolic with its use of conventionalized signs (Chandler 44)

Iconic and Indexical sign do not 'bracket' the referent. They are unique in that they refer to something outside of the sign-system and are not strongly bound to convention. The iconic sign admits some degree of conventionality, whereas, the indexical sign is directly connected to the referent (the object) with no or little conventionality. The iconic and indexical signifier is constrained by the referent. Chandler notes the effects of constraining a signifier,

> The more a signifier is constrained by the signified, the more 'motivated' the sign is: iconic signs are highly motivated; symbolic signs are unmotivated. The less motivated the sign, the more learning of an agreed convention is required. (Chandler 38)

Language is a system based on convention and is predominantly symbolic; therefore, a language requires a great deal of effort to be learnt. Media such as motion pictures have less conventionality; however, saying it is convention-less is inaccurate and a disservice to the medium.

The Mode of Symbolic

> A symbol is 'a sign which refers to the object that it denotes by virtue of a law, usually an association of general ideas, which operates to cause the symbol to be interpreted as referring to that object'. We interpret symbols according to 'a rule' or 'a habitual connection'. 'The symbol is connected with its object by virtue of the idea of the symbol-using mind, without which no such connection would exist'. (Chandler 39)

In other words, symbolic signs are largely convention based and arbitrary. A 'genuine symbol' has a general meaning, which signifies a 'kind' (a generalization) of thing and not a specific thing. Chandler warns that colloquial use of the term symbolic is often not the semiotic use of the term symbolic but rather a mixture of symbolic and iconic (Chandler 38). In semiotics, symbolic is a technical term that avoids the ambiguity of the colloquial term. It is unlikely for animation to be completely symbolic for that would make it more akin to the spoken or written language. Animation might feature symbolic signs or even be symbolic in certain aspects.

Pierce favoured the symbolic signs for their generality. The property of generality, in Pierce's opinion, is essential for reasoning and therefore, according to Chandler "Peirce privileges 'the

symbol-using mind'" (46). The symbolic sign-vehicle has type-token distinction[25] and the difference is ontological. Types are abstract, generalized but specific. Tokens are the concrete instances of a type. The symbolic is associated with the type and not the token.

The Mode of Iconic

The term iconic is another technical term in semiotic, where the colloquial usage differs from the semiotic usage. The iconic sign is based on perceived resemblance and "represents its object 'mainly by its similarity'" (Chandler 40). The iconic sign does not have a dynamic[26] "connection with the object it represents" (Chandler 40) because it is fixed by resemblance to the object and "is closer to 'direct perception', making the highest 'modality' that of iconic signs" (Chandler 38). All images are iconic because they have qualities that resemble the object they represent; however, signs do not need to be visual in order to be iconic. A pure iconic sign is unlikely to exist due to the influence of stylistic convention and medium. A sign, regardless of its mode, depends on properties of the medium. The medium constrains the possibilities of the sign; therefore, materiality is a dimension of sign. "Jay David Bolter argues that 'signs are always anchored in a medium [...] there is no such thing as a sign without a medium'" (Chandler 55). An interesting notion about materiality of sign comes from Derrida stating that material "relinquishes translation" (Chandler 54).

The Mode of Indexical

The indexical sign references the object directly "like 'a fragment torn away from the object'" (Chandler 42), where this indexicality serves "as evidence of an object's existence" (Chandler 43). The indexical sign has a "'genuine relation' between the 'sign' and the *object* which does not depend

[25] Umberto Eco notes three kinds of type-tokens:

> "• signs in which there may be any number of tokens (replicas) of the same type (e.g. a printed word, or exactly the same model of car in the same colour);
>
> • 'signs whose tokens, even though produced according to a type, possess a certain quality of material uniqueness' (e.g. a word which someone speaks or which is handwritten);
>
> • 'signs whose token is their type, or signs in which type and token are identical' (e.g. a unique original oil-painting or Princess Diana's wedding dress)" (Chandler 50).

[26] Dynamic in the sense that it is not time dependent or able to change relation as with the conventionality of symbol.

purely on 'the interpreting mind'" (Chandler 42); however, identifying the indexicality of a sign is "based on an act of judgement or inference" (Chandler 38). "The *object* is 'necessarily existent'" (Chandler 42) and the "index is connected to its object 'as a matter of fact'" (Chandler 42). The indexical sign is more than mere resemblance for it stands unequivocally for the existing object. The indexical sign is not defined by similarity, analogue or resemblance; it is defined by contiguity to its object. The indexical sign does not need 'properties' of its own. It only requires a connection[27] that is demonstrable.

> Iconic and indexical signs are more likely to be read as natural than symbolic signs when making the connection between signifier and signified has become habitual. Iconic signifiers can be highly evocative. Such signs do not draw our attention to their mediation, seeming to present reality more directly than symbolic signs. (Chandler 41)

The Implications of a Referent

The Saussurean model is immaterial, relatively arbitrary with a bracketed referent. Therefore, it could be considered "a denial of the essentialist argument that signifieds are distinct, autonomous entities in an objective world which are definable in terms of some kind of unchanging essence" (Chandler 63). It allows for an inverse relation where signifier is giving primacy over the signified, which in turn can result in a 'radical response' to realism: "that things do not exist independently of the sign-systems that we use" (Chandler 61). If argued this way, the Saussurean model could be interpreted as idealist. The notion that language and symbolic sign-systems constitute reality is convincing, perhaps even liberating, yet troublesome. The degree to which the sign-system constructs reality is debatable for "the emphasis which Saussure gave to arbitrariness can be seen as highly controversial in the context of a theory which bracketed the referent" (Chandler pp 23). The notion that reality is an undifferentiated continuum upon which arbitrary divisions are imposed is enticing; however, it is unsubstantiated for a "system which brackets extralinguistic reality excludes truth values" (Chandler 64).

> [T]he cautionary remarks of John Lyons, that such an emphasis on reality as invariably perceptually seamless may be an exaggeration. Lyons speculates that 'most of the

[27] Chandler notes, "[t]he most important of these connections are spatial co-occurrence, temporal sequence, and cause and effect'" (Chandler 42).

> phenomenal world, as we perceive it, is *not* an undifferentiated continuum'; and our referential categories do seem to bear some relationship to certain features which seem to be inherently salient. (Chandler 61 - 62)

The importance of the notion is not the radical extreme but rather a nuanced statement concerning language:

> Even if we do *not* adopt the radical stance that the real world is a product of our sign-systems, we must still acknowledge that there are many things in the experiential world for which we have no words and that most words do not correspond to objects in the known world at all. Thus, all words are abstractions, and there is no direct correspondence between words and things in the world. (Chandler 62)

The Peircean model allows an explicit referent to both abstract concept and material reality outside of the sign-system. It should be noted that materiality does not imply naïve realism as there is an interpretant. The linguistic sign does not simply name things in a 'language–world *isomorphism*[28]' or take up the function of nomenclature to form nominal realism (Chandler 60). Language needs the ability to refer beyond particular instances for it to be effective in communication.

The Peircean model could be considered more epistemologically realist. Peirce asserts that reality is mediated through sign[29]. "If representations are our only access to reality, [then] determining their accuracy is a critical issue. Peirce adopted from logic the notion of 'modality' to refer to the truth value of a sign, acknowledging three kinds: actuality, (logical) necessity and (hypothetical) possibility" (Chandler 63). The modality is reflected in the mode of the sign. All "signification could only ever be partial; otherwise it would destroy itself by becoming identical with its object" (Chandler 63). This is the paradox of gradability.

[28] Language-world isomorphism is a one-to-one mapping of words to objects in reality.

[29] "[T]he general semanticists adopted the realist stance that language comes 'between' us and the objective world and they sought to reform our verbal behaviour to counteract the linguistic distortion of reality" (Chandler 70).

Chapter 3: Understanding the Images in Animation

All animation is fundamentally iconic for it functions through resemblance. Stressing animation's iconicity alone is insufficient in addressing the medium's uniqueness for cinematography and photography are also considered iconic. Animation has an extensive range of signs that vary in degrees of modality, whereas cinematography is more limited in its range of signs but with a particularly high degree of modality. Paul Wells noted that, "the cartoon carries with it the idea that appearance and identity is a relative and constantly changing thing" (6). The methods used to inject a figurative and symbolic aspect into animation are heterogeneous and often dependant on "the effusion of a specific ethnocultural context" (Langer 30). To understand the range of iconicity in animation we must look to a medium from which animation has borrowed much of it 'vocabulary[30]' - the comic and the comic strip.

Understanding Iconicity through Scott McCloud

Scott McCloud's *Understanding Comics: The Invisible Art* explores the range of the iconic sign along with its application within the medium of comics. McCloud's understanding of iconicity is informative, concise and craftly illustrated. The concepts presented are concerned with the iconicity within comics only; however, they are applicable to animation as both media have a good deal in common. McCloud indicates a need for what he deems "aesthetic surgery" (McCloud 5-6), which is the seperation of form (expression) and content so that the medium of comics, and in this case animation, may be better understood. Chandler warns against seperating form and content (specifically in language) as it would most likely change the meaning (Chandler 123). The seperation McCloud advocates is of an analytical capacity and enables the inspection of potential iconic sign variation. The use of iconicity within animation and comics should not be conflated as being the same. McCloud notes the difference between animation and comics by constructing a working definition of comics[31]. McCloud finds differences in the presentation of images (spacial placement

[30] The notion of vocabulary is in reference to Scott McCloud's usage of the word, where he refers to the vocabulary of the comic.

[31] The working definition of comics provided by Scott McCloud: "Juxtaposed pictorial and other images in a deliberate sequence, intended to convey information and/or to produce an aesthetic response in the viewer" (McCloud 9).

and juxtapositioning), sequencing of images (not in succession of time but in positioning of space which he calls 'the closure') and use of written words. The difference in word usages is explained in the section *Beyond the Singular: Image Motion as Anchorage and Relay 'Like'*. The vocabulary of the icon is what is being investigated.

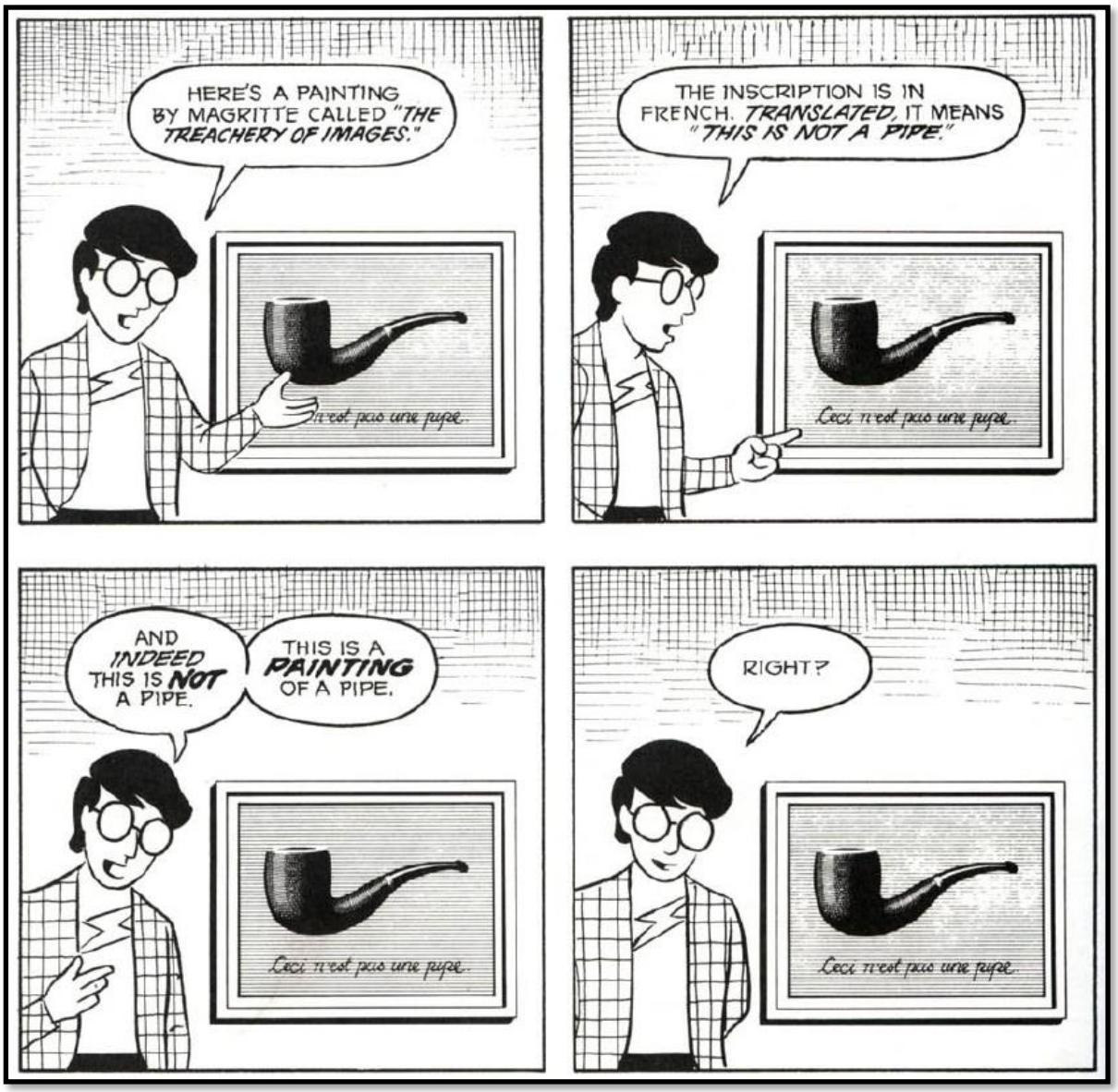


Figure 7. McClouds witty play on *The Treachery of Images*, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.23. Print.

McCloud initiates his discussion of iconicity with the theory of representation captured by René Magritte's *The Treachery of Images 1929*. An image is but a representation (by resemblance) and never the thing itself - 'Ceci n'est pas une pipe'. It is "an illustration of the 'concept' of a pipe rather than of a specific pipe" (Chandler 70). A crucial mapping of McCloud's diction to semiotic jargon is

required. McCloud notes that the word symbolic is too loaded (McCloud 27). He never refers to indexical; however, mentions that as “resemblance varies, so does the level of iconic content” (McCloud 27). McCloud ascribes a relative colloquial usage of the word iconic where the semiotic meaning of symbolic mode merges with the iconic mode. This merger results in what he refers to as ‘pictorial’, ‘non-pictorial’ and ‘abstract icons’. McCloud is aware of the semiotic distiniction and states that, “I’m using the word “iconic” to mean any images used to represent a person, place, thing or idea” (McCloud 27). He purposefully draws attention to symbolic aspects of some iconic signs by refering to them as non-pictorial and abstract icons. The inverse occurs when he highlights the iconic aspect of the symbols in the medium. He considers words abstract icons in context of them being in image format but not in terms of function. In function it would probably be considered symbolic. Essentially, because it’s a visual medium one could consider all elements iconic in that sense.

The colloquial use of the term iconic and the avoidance of the term indexical reflect the intended audience of the book. The intention is to not confuse the audience with jargon and dense theory but to impart an understanding of how icons work in favour of the medium of comics. The difference between the pictorial icon, the non-pictorial icon, and the abstract icon allows him to explore its function. Unfortunately this approach, from an analytical stand point, complicates the investigation.

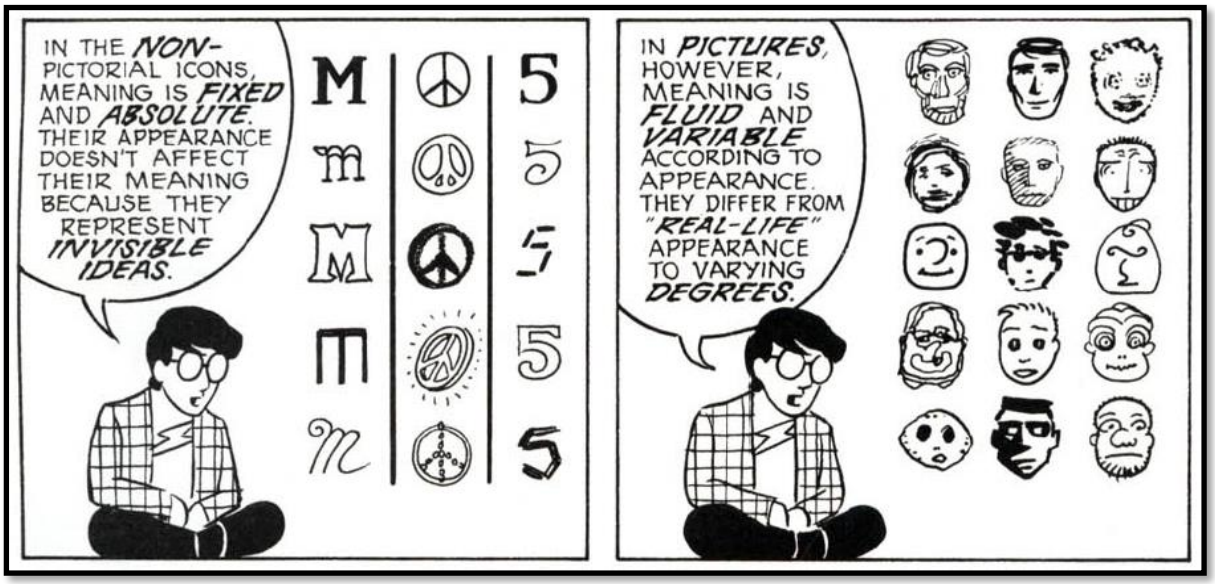


Figure 8. McClouds distinction between non-pictorial and pictorial, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.28. Print.

McCloud observes that highly symbolic icons[32] which he refers to is as non-pictorial and abstract icons are (relatively) fixed in their representation. It is locked to the idea through convention. Naturally the token should resemble the associated type. The token can be styized but not changed in such a way that it changed types. Style does not alter the signified; however, it can add meaning. The icon that he refers to as pictorial can vary significantly from "real-life appearance to varying degrees" (McCloud 28), however, unlike the non-pictorial and the abstract icon this does effect the meaning.

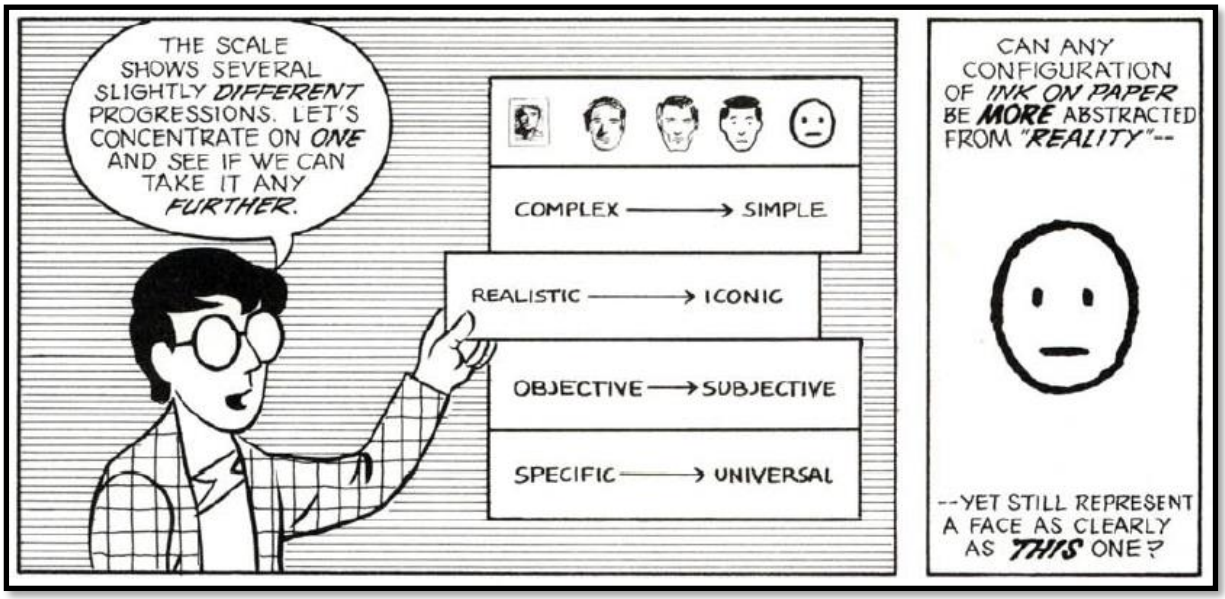


Figure 9. The layers of abstraction, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.28. Print.

Chandler notes a regular progression of sign as "Icon, Index, Symbol" (Chandler 46). McCloud offers invigorating insight on ordering the iconic sign. He underlines the levels of abstraction "from concrete reality to abstract generalization" (Chandler 70). The levels of abstraction locates the 'slippage' that could occur while demonstrating the iconic variety. A ladder "metaphor is consistent with how we routinely refer to levels of abstraction [...] to avoid the confusion of *higher logical types* with *lower logical types*. 'A map' is of a higher (more general) logical type than 'the territory'" (Chandler 71), which is a lower logical type. The ladder metaphor is useful in considering "abstraction in terms of levels and logical typing, however it can be too unidimensional" (Chandler

[32] "A 'stylized' image might be more appropriately regarded as a 'symbolic icon'. Such combined terms represent 'transitional varieties'. Peirce also insisted that 'it would be difficult if not impossible to instance an absolutely pure index, or to find any sign absolutely devoid of the indexical quality'" (Chandler 44).

72). McCloud offers an alternative in ordering icons that is not a simple mimetic to abstact reading in a ladder format.

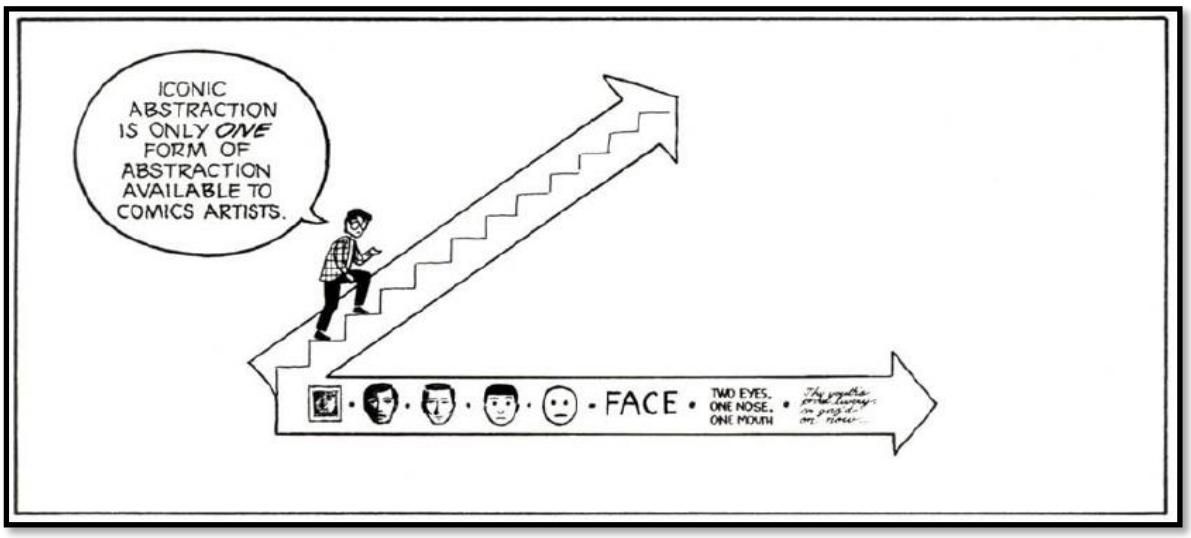


Figure 10. Abstractions Movement, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.50. Print.

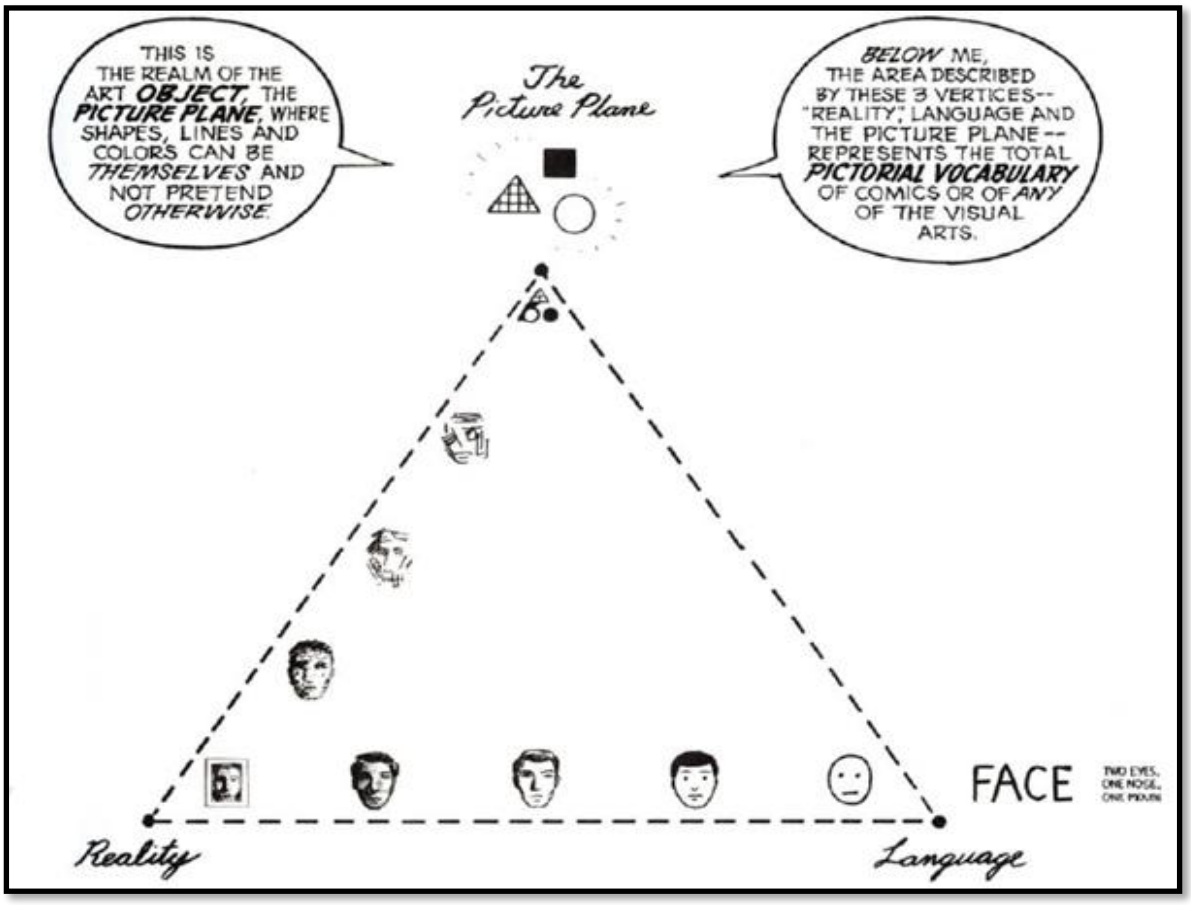


Figure 11. McCloud's Triangle ordering over the ladder analogy, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.51. Print.

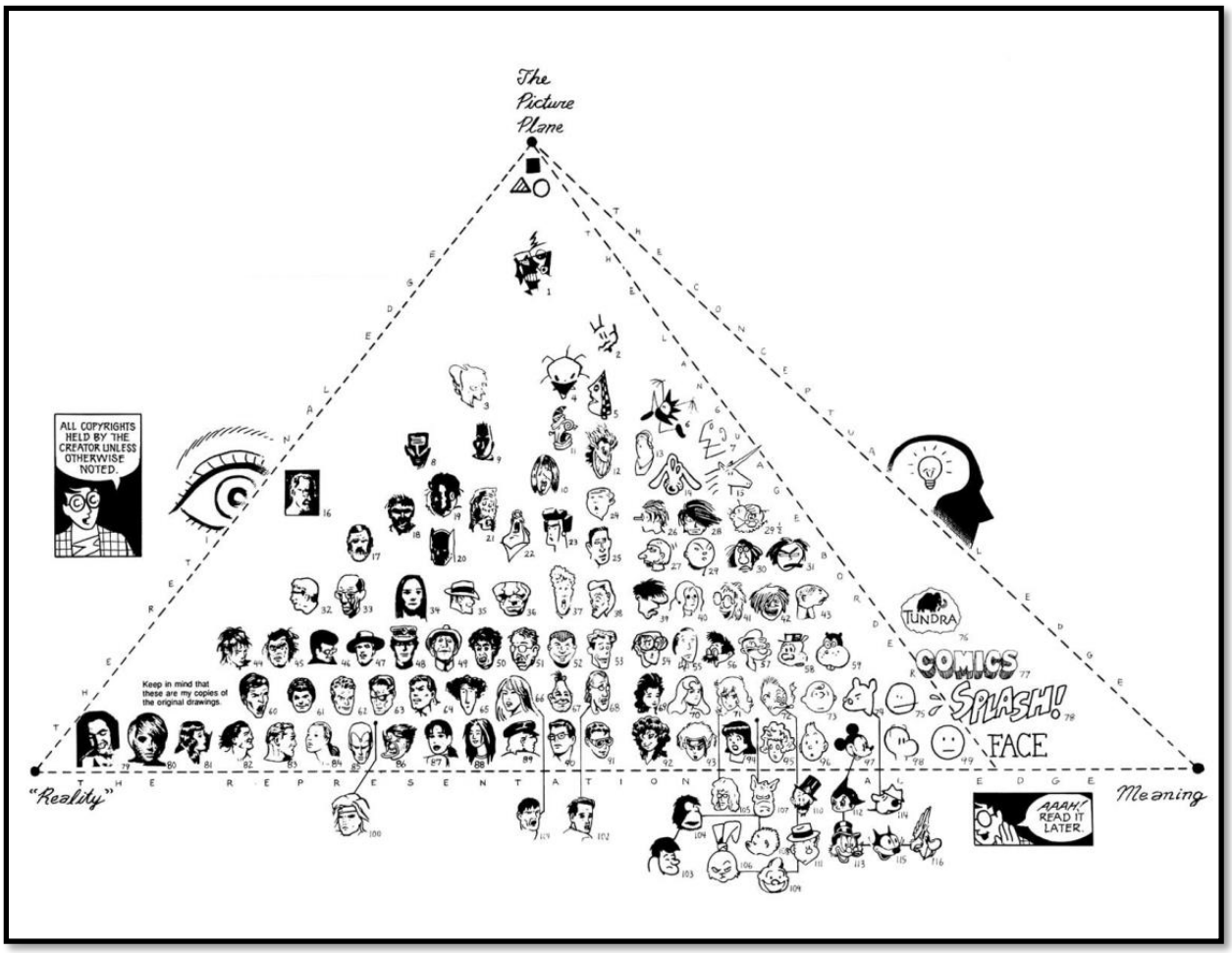


Figure 12. The ordering of various comics by McCloud. Note the division of icon and language by a dashed line, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.52-53. Print.

Figure 12, provided above, is a triangular model that McCloud offers to catalogue iconicity. The triangle presents two directions of movement a horizontal (left to right) and a vertical (buttom to top). It also features a special division between words and pictures. McCloud uses varying terminology, refering to the left as either reaity or resemblance, the right as meaning or language.

The horizontal movement is from reality to meaning. It is perhaps inaccurate to call it a movement from reality to meaning because it assumes that realistic representation cannot have meaning or is only capable of literal and not figurative meaning. It is unlikely that it is intended interpretation. Rather, it is more likely that it is a 'movement of attention': on the left side the attention is on resemblance/versimilitude/likeness, where as on the right side the attention is the meaning and concepts with a stress on conventionality. The right side of the triangle indicates meaning, however, ideas or concepts is infered. The progression of sign motivation and conventionality is shown: more motivated and less conventional on the left; less movitivated and more conventional on the right.

There is also a vital division between words which are non-pictorial and abstract from the icons. The division emphasises the boundary of pure conventional symbols and icons.

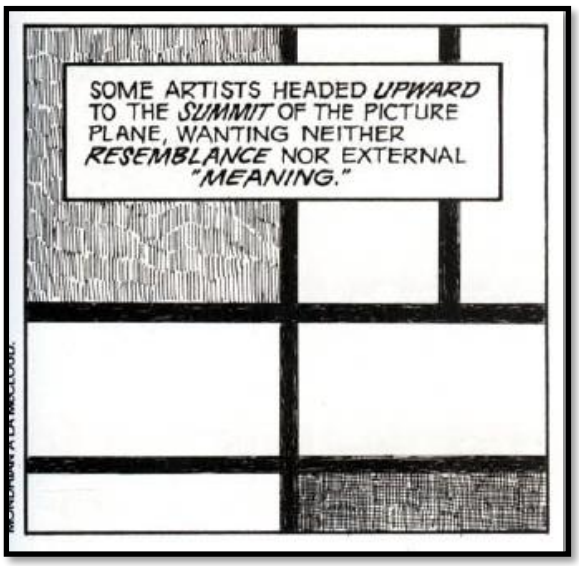


Figure 13. McCloud's picture summit, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.147. Print.

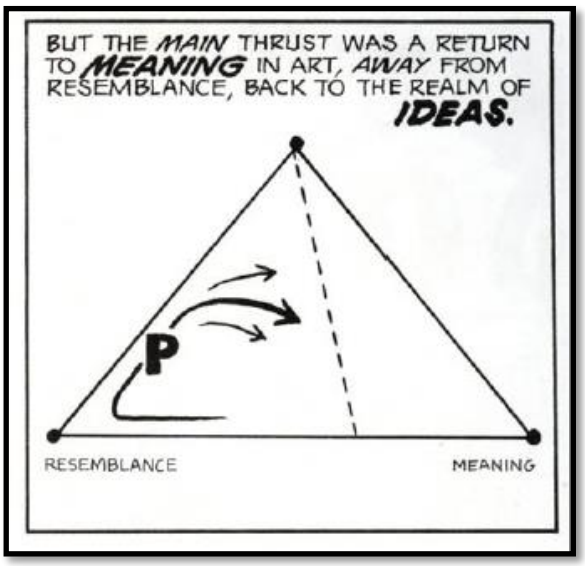


Figure 14. The thrust towards 'meaning', illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.147. Print.

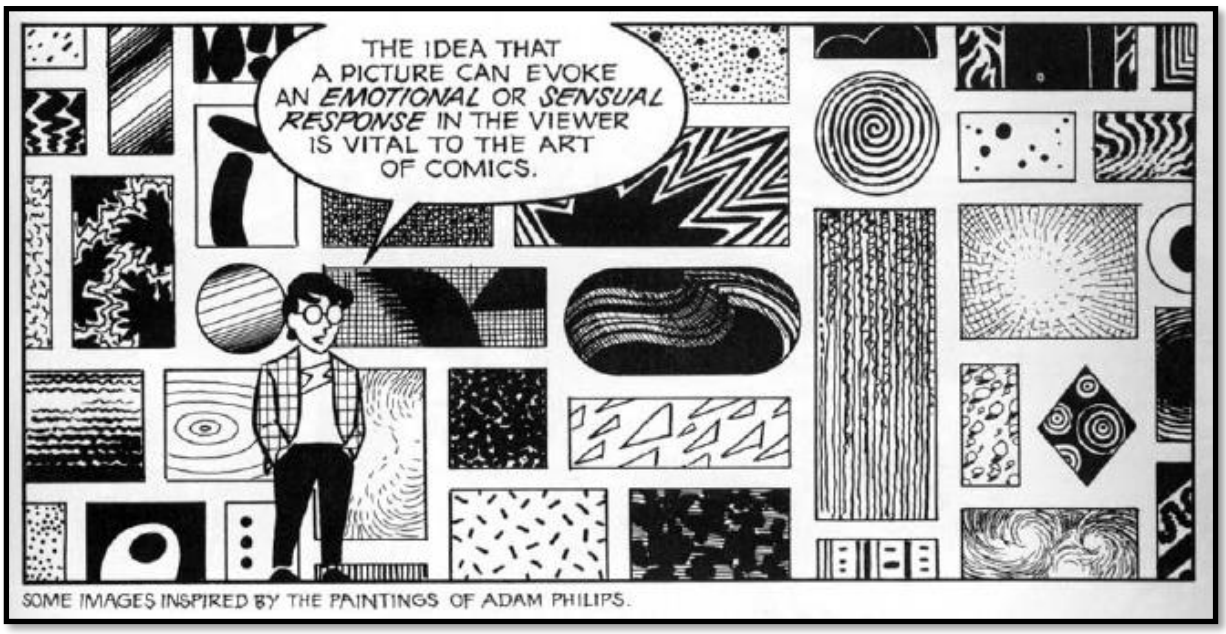


Figure 15. The abstract pictorial illustrating the un-illustratable, which are neither meaning driven nor resemblance driven, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.. Print.

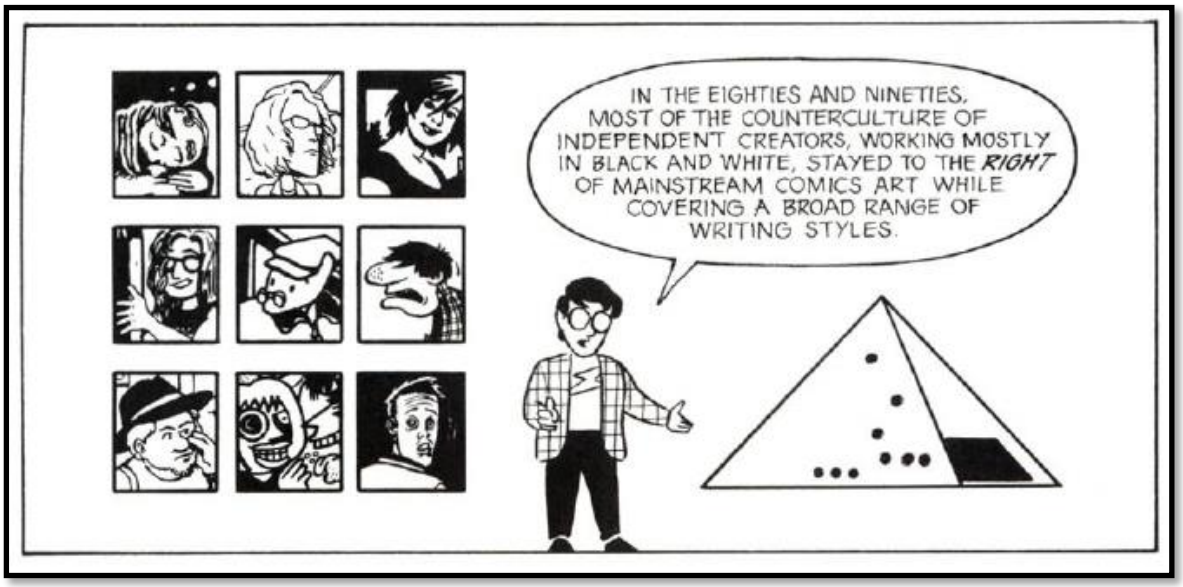
The vertical movement is peculiar for it is also a movement of abstraction; however, it is not in favour of abstracted and extracted meaning but rather in the picture itself. McCloud uses the word picture plane[33] for the zenith of the triangle. The picture plane functions much like abstract art, where it is bound to the visuals for meaning but void of reference (or atleast direct reference). This form of abstraction can be useful for concepts that are invisible and where no set symbolism is defined. Meaning and resemblance are not the direct driving forces. McCloud's example is of movement in comic books and its decomposition through the use of lines as metaphor.





[33] The term picture plane is misleading at first since technically the picture plane refers to a tool for drawing perspective: The plane located between the eye and the object being perceived. It would seem McCloud means a dimension that is pictorial in element but not in reference.


TODAY, MANY AMERICAN MAINSTREAM COMICS STILL FOLLOW KIRBY'S LEAD FOR STORYTELLING, BUT THE DESIRE FOR MORE *REALISTIC* ART AND MORE ELABORATE SCRIPTS HAS PUSHED ART AND STORY *FURTHER APART* IN MANY CASES.
A FIGHT STARTED ON HIS DOORSTEP, HE PUT A STOP TO IT. FAR AS ANYONE KNOWS, ALL THE SURVIVORS ARE PRETTY MUCH OKAY.
WAY YOU TALK, NICHOLAS, FOLKS EXPECT HIM TO START NUKIN' MAMA RUSSIA ANY MOMENT.


IN THE EIGHTIES AND NINETIES, MOST OF THE COUNTERCULTURE OF INDEPENDENT CREATORS, WORKING MOSTLY IN BLACK AND WHITE, STAYED TO THE *RIGHT* OF MAINSTREAM COMICS ART WHILE COVERING A BROAD RANGE OF WRITING STYLES.

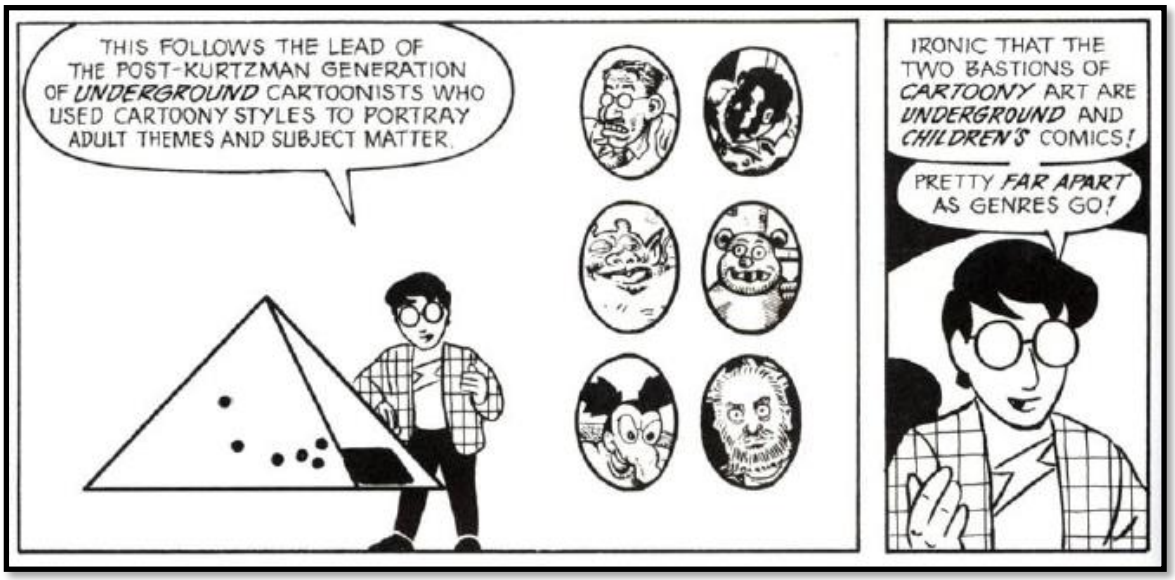

THIS FOLLOWS THE LEAD OF THE POST-KURTZMAN GENERATION OF *UNDERGROUND* CARTOONISTS WHO USED CARTOONY STYLES TO PORTRAY ADULT THEMES AND SUBJECT MATTER.
IRONIC THAT THE TWO BASTIONS OF *CARTOONY* ART ARE *UNDERGROUND* AND *CHILDREN'S* COMICS!
PRETTY *FAR APART* AS GENRES GO!



Figure 16. Various iconic configurations, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.55-56. Print.



Figure 17. Pictorial Abstraction, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.48. Print.

The effectiveness of animation is that it can select from a broad range of indexical to symbolic icons. The required level of detail in the icon can be added when required and stripped away when redundant, all serving the cause of expression, interpretation and identification. In figure 17, provided above, the face moves from photorealistic to abstract, yet the core remains intact. McClouds notes it as the "universality of cartoon imagery" (McCloud 31). McCloud attributes identifiying the object with viewer investment, which is similar to the notion of Mustenberg's

attention. The range of iconicity does not have to be uniformed intra-image as demonstrated by McCloud's crafty combination of background and character.

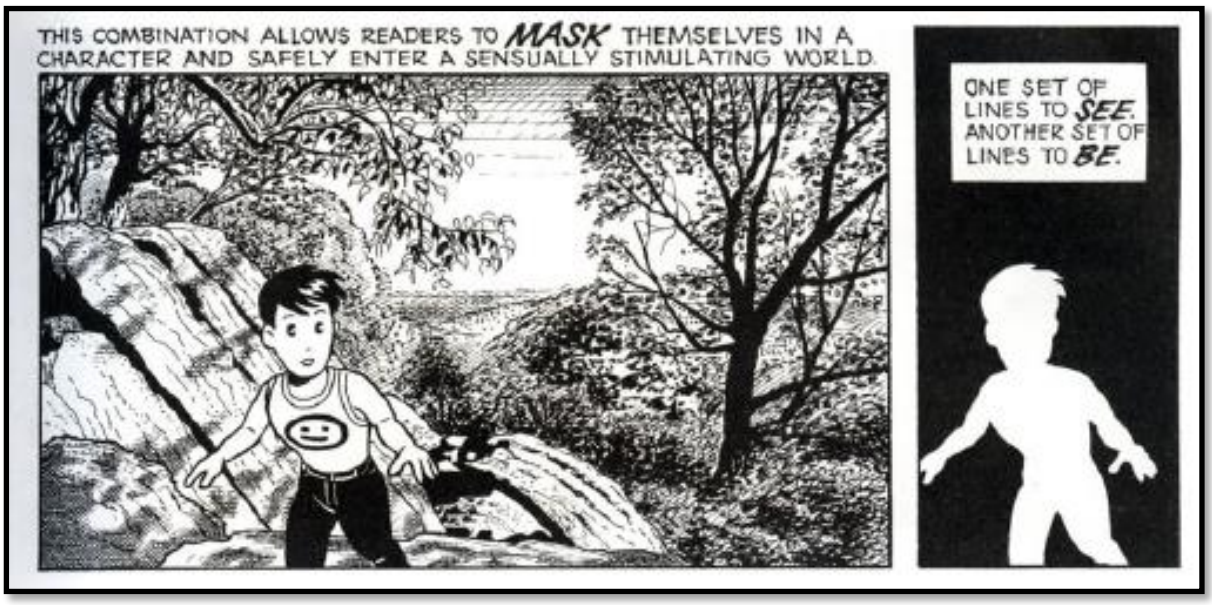


Figure 18. The mixed configuration of different levels of abstraction in background to character, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.48. Print.

Degrees of abstraction describe how the iconic sign varies but not why. An artist might choose to render the character more abstracted while retaining higher realism in the background, as in figure 17, based on a desired effect. Artists do not always strive for versimilitude or pure resemblance. Often artists emphasize meaning.

Visual Attention to Meaning

The United Productions of America's (UPA) influential and 'signature visual style'[34] is an example of the visually orientated 'pull towards meaning'. It is arguable that, "all cartoons are preoccupied with visual reality; it is merely their stance toward it that differs" (Bashara 89). Dan Bashara identified UPA's visual style as akin to Precisionism, which was a modernist art movement in the United States of America. "UPA was firmly engaged in the work of solving particular problems of modern vision through abstraction and simplification" (Bashara 84). Precisionists were "selective realists who

[34] The distinctive look featured: "hard-edged, simplified forms; bold, unmodulated colors; an evacuation of detail; a minimalist environmental surround often reduced to geometric patterns or even a flat color plane; the avoidance of rounded, centerline character design; and a relaxed (at best) implementation of Renaissance perspective" (Bashara 83).

variously distilled the essential forms of a highly refined reality" (Bashara 86). The terms 'selective realist' is somewhat of an oxymoron, in the same way choice in realism photography is a paradox. The two approaches are vastly different in how they aim to sculpt meaning. "The phrase 'selective realists' testifies to the extent to which the Precisionists blurred abstraction and representation" (Bashara 86). It definitely exposes the complex relationship of reality and representation. The term 'selective realist' iterates the concept of convention. The ambition was to remove "barriers to the essential integrity of the object and its direct apprehension" (Bashara 86-87). Texts that are particularly concerned with strategies for structuring and ordering visual meaning are György Kepes's *Language of Vision*(1944) and László Moholy-Nagy's *Vision in Motion* (1947). Representations are simplified through the "principles of abstraction developed by modernist art" (Bashara 88).

The influence of Kepe's *Language of Vision* emphasized communication. Hubley and Schwartz stated that, "animation provided the *only* means of portraying many complex aspects of a complex society" (Bashara 88). Bashara followed by stating, "[A]nimation, as an alternative to photographic representation, could perform a kind of conceptual abstraction that live-action film could not" (Bashara 88). The conceptual abstraction is independent of 'concrete' reality (mimetic representation) and allows for symbolic properties through conventions unique to animation for exploring visual realities.



Figure 19. Still frame from Gerald McBoing-Boing, illustration from: Gerald McBoing-Boing. Dir. Robert Cannon. 1950. Animation.

Exploring visual realities through symbolic properties requires comprehension of the functions of the literal and figurative.

Iconic Variety and Tropes: Figures of 'Speech'

The sign analyzed semantically provides different descriptors for the signifier and the signified. The descriptors 'literal' and 'figurative' operate "at the level of the signifier" (Chandler 137), while the descriptors 'denotation' and 'connotation' operate "at the level of the signified" (Chandler 137). The literal is the denotative meaning and the figurative is the connotative meaning. The "literal image is denoted and the symbolic image [is] connoted" (Barthes 37). "In semiotics, denotation and connotation are terms describing the relationship between the signifier and it's signified, and an analytic distinction is made between two types of signifieds: a *denotative* signified and a *connotative* signified" (Chandler 137). Roland Barthes' framework separates levels of signification. Denotation is the first order of signification with sign consisting of signifier and signified. The second order signification is connotation, which utilizes a denotative sign as a signifier and attaches an additional signified. "The signifier thus stands for a different signified; the new signified replaces the usual one" (Chandler 125). The third order of signification is myth in Barthes terms. In a visual medium, the denotative is recognizable regardless of context, whereas connotation is context dependent, therefore, more open to interpretation. In practice, denotation and connotation are not easily separated. Semiotics challenges the notion that literal representations of things are 'neutral' - as they are.

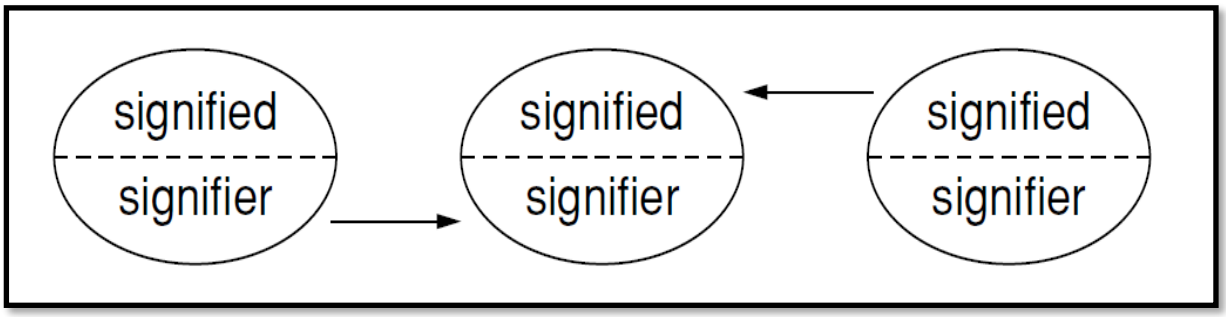


Figure 20. Substitutions in Tropes, illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.125. Print.

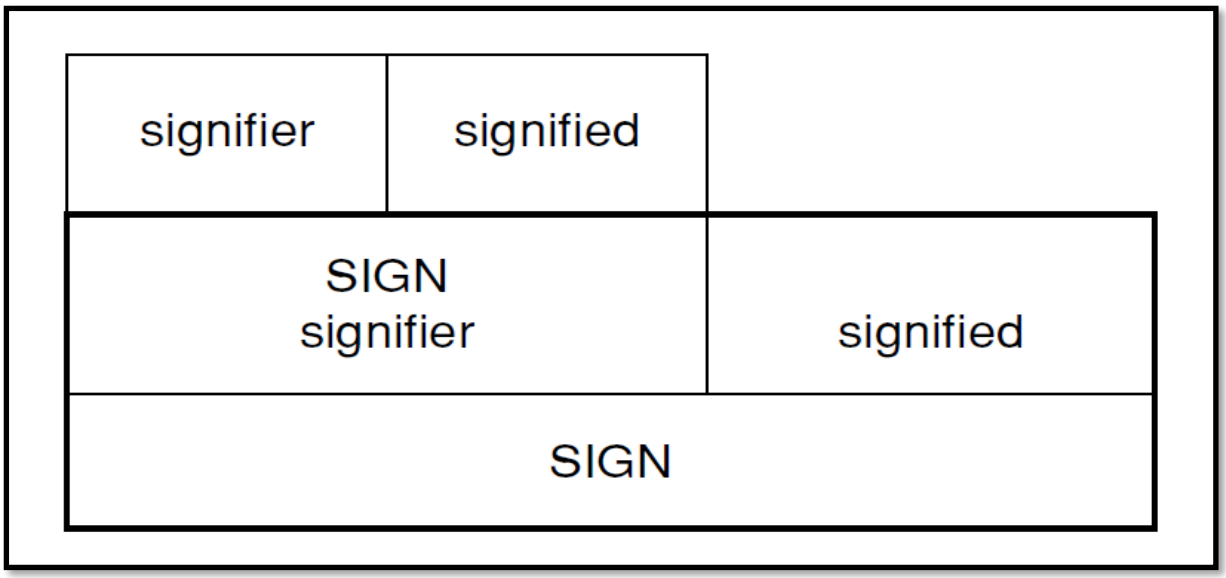


Figure 21. Denotation (first order signification) and Connotation (second order signification), illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.140. Print.

Animation is always literal and often figurative; there is always a denotative and often connotative dimension in animation. Tropes are the manifestation of the figurative. "Tropes may be essential to understanding if we interpret this as a process of rendering the unfamiliar more familiar" (Chandler 124). There are four master[35] tropes: metaphor, metonym, synecdoche and irony. It should be noted that "figurative language constitute a rhetorical code" (Chandler 124)

Metaphor

The first figurative device is the metaphor, which includes simile as an explicit form of metaphor. The essential action of the metaphor is the comparison or association of one experience, meaning or thing to another. "In semiotic terms, a metaphor involves one signified acting as a signifier referring to a different signified" (Chandler 127). Metaphors enable abstraction, transmutation and transference from a less defined form into more defined and comprehensible form. "In literary terms, a metaphor consists of a 'literal' primary subject (or 'tenor') expressed in terms of a 'figurative' secondary subject (or 'vehicle')" (Chandler 127). Context allows us to distinguish the 'primary subject'. The "[m]etaphor is initially unconventional because it apparently disregards 'literal' or denotative resemblance" (Chandler 127) however it does require some resemblance to be interpretable. The metaphor is symbolic and iconic but its "resemblance is oblique" (Chandler 127)

[35] The four master tropes were popularized by American rhetorician Kenneth Burke (Chandler 136).

to an extent; therefore, the metaphor is not arbitrary. George Lakoff and Mark Johnson assert the fundamental kinds of metaphors:

> • **orientational** metaphors primarily relating to spatial organization (up/down, in/out, front/back, on/off, near/far, deep/shallow and central/peripheral);
> • **ontological** metaphors which associate activities, emotions and ideas with entities and substances (most obviously, metaphors involving personification);
> • **structural** metaphors: overarching metaphors (building on the other two types) which allow us to structure one concept in terms of another (e.g. rational argument is war or time is a resource). (Chandler 129)

The link between the metaphor is normally unfamiliar or unconventional; therefore, it requires an "imaginative leap to recognize the resemblance to which a fresh metaphor alludes" (Chandler 127). To illustrate this imaginative leap, using an example of language, *Blade Runner*'s (1982 directed by Ridley Scott) replicant Roy Batty (portrayed by Rutger Hauer) delivers a death soliloquy:

> I've seen things you people wouldn't believe. Attack ships on fire off the shoulder of Orion. I watched C-beams glitter in the dark near the Tannhäuser Gate. All those moments will be lost, in time, like tears in rain. Time to die. (Blade Runner)

The imaginative leap is in the metaphorical sentence, which causes 'displacement' allowed by language. An example of ontological metaphor in pure visual terms is well illustrated by McCloud's chapter *Living in the Lines*, where the 'object plane expression' is utilized to show elements that the medium cannot transcribe such as emotion. The visual metaphor transfers certain qualities of the emotion. Metaphors in visual media occur in more ways than just 'abstract' icons. Metaphors may be established orientationally and structurally through visual juxtaposition of elements either within the image itself or between the combinations of various shots in the form of montage[36]. Anthropomorphism and personification function as ontological metaphors and are used extensively in animation.

Visual media benefits from metaphors in different configuration and the relevance is important to connotative procedures. Animation has the variety of signs, along with the ability of metamorphosis to form a unique selection of visual metaphors. The unique selection of visual metaphors should not be confused as a claim of superiority to other media. Chapter 4 *Verisimilitudinous, Speciality of the*

[36] Sergei Eisenstein provided various methods to approach montage as film formalism.

Photograph and Motion explores cinematography's unique status and the benefits to a hybrid medium.

Metonym

Metonym is defined by substitution, based on indexical relationship where a signified is capable of standing for another signified, which is attributable to direct or adjunct association. Metonym is different from metaphor in that "a metaphorical term is connected with that for which it is substituted on the basis of similarity (and contrast), metonymy is based on contiguity or proximity" (Chandler 131). Metaphors link unrelated concepts through similarity. Metonym links related concept through contiguity and proximity. Metonym does not transmute or transpose; therefore, it does not require, as Chandler calls it, an 'imaginative leap'. It is the ability for one thing to stand in for another through its indexical connection. To illustrate, the substitution may be cause for effect, object for user, substance for form, place for event, place for person, place for institution or institution for people. The nature of metonym may influence meaning by emphasizing certain relationships and suppressing others. "Metonymy can be seen as a textual […] projection of Peirce's indexical mode. Metonyms lack the evidential potential of Peirce's mode unless the medium is indexical – as in photography and film. However, it is on the basis of perceived indexicality that metonyms may be treated as 'directly connected to' reality in contrast to the mere iconicity or symbolism of metaphor" (Chandler 131). Bazin accurately stated that, "The camera cannot see everything at once but it makes sure not to lose any part of what it chooses to see" (Bazin, What is Cinema? Volume I 27)

Synecdoche

Chandler notes that although the definition of Synecdoche varies "the most common tendency to describe synecdoche [is] 'the substitution of part for whole, genus for species or vice versa'" (Chandler 132). Sometimes the direction and/or physicality of the synecdoche is restricted: "part for whole but *not* whole for part" (Chandler 132). Visual media operate through unavoidable synecdoche. An image can only fit a certain perspective. "Synecdoche invites or expects the viewer to 'fill in the gaps'" (Chandler 133). Any attempt to represent reality could be considered synecdoche as there is always a selection of what is to be represented and what is to be left out. It is unlikely

that the chosen medium can transcribe all of reality. Synecdoche offers a particularly well defined indexical relation:

> [I]ndexical relations in general reflect the closest link which a signifier can be seen as having with a signified, the part–whole relations of synecdoche reflect the most direct link of all. That which is seen as forming part of a larger whole to which it refers is connected existentially to what is signified – as an integral part of its being. (Chandler 133)

The 'metonymic/synecdoche fallacy' should be noted. It is when a part is mistaken as an accurate reflection of the whole and in a sense mistaking part for the whole. Theorists vary on whether synecdoche is a form of metonym or a trope of its own. Eco, according to Chandler, notes that metonym is "a substitution within the framework of the conceptual content" (Chandler 134) and synecdoche is a substitution of other elements within reality to which it is "customarily connected" (Chandler 134).

Synecdoche and metonym are fundamental to visual media. The act of framing and the guidance of attention are simple forms of unavoidable synecdoche and metonym. The framing in photography, cinematography and painting has an extensive set of conventions[37]. The iconic variance in animation allows for an additional level, which is perhaps not synecdoche or metonym in the traditional sense. In reference to Chapter 3 *Understanding Iconicity through Scott McCloud*, the tri-directionality of iconicity and the process of abstraction in a sense act as a form of synecdoche where certain elements are retained to represent the whole, while others are omitted.

Irony

Irony could be considered a play on opposite meaning where "the signifier of the ironic sign seems to signify one thing but we know from another signifier that it actually signifies something very different" (Chandler 134). This play of opposite meaning is often a binary opposition. "It can also be seen as being based on substitution by *dissimilarity* or *disjunction*" (Chandler 134). Irony is beyond the literal for it involves a "non-literal substitution of a new signified for the usual one" (Chandler 135). Irony is often difficult to detect as it requires the ability to comprehend the double-ness in the

[37] To name some conventions: rule of thirds, shot distance, angles, 180 rule, panning, tilting, tracking, dolling, zoom and depth of field.

"distinction between what is *said* and what is *meant*" (Chandler 135). Irony differs from other tropes in that "other tropes involve shifts in what is being referred to, [while] irony involves a shift in modality. The evaluation of the ironic sign requires the retrospective assessment of its modality status" (Chandler 135). Irony evaluates the literal in reference to a perceived truth status. Chandler warns that 'irony' should not be conflated with 'lie' for it does not attempt to be taken as true.

Styles and Conventions

A sign system requires a structure beyond the functionality of the literal and the figurative. It requires a set of codes. "Semiotic codes are procedural systems of related conventions for correlating signifiers and signifieds in certain domains" (Chandler 245). The process of encoding and decoding limits the production and interpretation of signs. The medium determines the coding and transcoding capabilities. A core principle of 'new media' is its enhanced transcoding capabilities through its modular organization and variablity (Manovich, The Language of New Media 45). "Codes transcend single texts, linking them together in an interpretive framework" (Chandler 157). A set of codes may allow for multiple interpretations (an open text) or a particular interpretation (a closed text). Classifying codes into types is a subjective process that depends on the semiotician; however, Chandler mentions three types of codes: social codes, textual codes and interpretative codes. (Chandler 149 - 150). Codes may influence the modality of the text. The textual codes fiction and non-fiction is an example where a modal judgement is required to distinguish fiction from non-fiction. "Codes organize signs into meaningful systems which correlate signifiers and signifieds through the structural forms of syntagms and paradigms" (Chandler 148).

Paradigmatic and Syntagmatic

Paradigm and syntagm are linguistic concepts predominantly used for structural text analysis. Christian Metz, in *Film Language* stated that, "concepts of linguistics can be applied to the semiotics of the cinema[38] only with the greatest caution" (Metz 107). The paradigm and the syntagm provide insight on how the sign 'value' is determined and how codes are structured. Lev Manovich demonstrated parallels between the concepts of paradigm and syntagm to the concept of database (Manovich, The Language of New Media 229-233).

[38] The assumption is that Metz notion of cinema is the same as my notion of cinema; however, I do not know if he excludes animation from that category.

The paradigm and the syntagm form two structural axes: a vertical and a horizontal. The syntagm is the horizontal axis and it is the structural combination of signs to each other 'intratextually'. The paradigm is the vertical axis and it is the choice of the sign 'intertextually'. The "syntagmatic relations are possibilities of combination" (Chandler 83). The "paradigmatic relations are functional contrasts" (Chandler 83). The distinction is that "form is a syntagmatic dimension while content is a paradigmatic dimension" (Chandler 86).

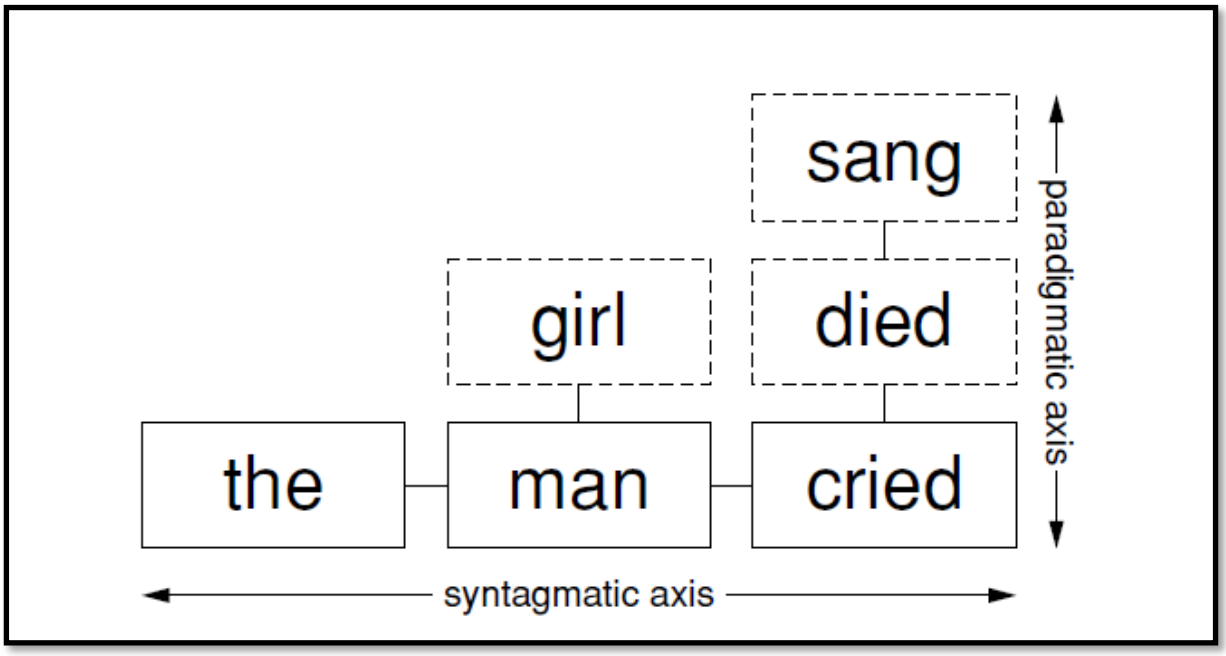


Figure 22. Paradigmatic and Syntagmatic two axes structure, illustration from: Chandler, Daniel. Semiotics: The Basics. Lodon: Routledge, 2002, p.84. Print.

Daniel Chandler explains the difference between paradigm and syntagm using Roland Barthes' clothing analogy:

> The paradigmatic elements are the items which cannot be worn at the same time on the same part of the body (such as hats, trousers, shoes). The syntagmatic dimension is the juxtaposition of different elements at the same time in a complete ensemble from hat to shoes. (Chandler 86)

The paradigm operates on a "set of associated signifiers or signifieds which are all members of some defining category, but in which each is significantly different" (Chandler 84). The paradigm is concerned with what is substitutable or transposable, in absentia, and how that change alters the

meaning. A paradigm compares signifiers through a commutation test[39] to find the 'value' of the sign. Icons do not usually have binary opposites at the denotative level. At the denotative level of the icon there is only difference. Icons generally have a binary opposite at the connotative level. Opposition takes two forms: logically contradictory and logically contrary.

The concept of paradigm applies to any semiotic level whether it is a word, image, sound, style, genre or medium. Language defines clear categories such as nouns, verbs, adjectives, adverbs and conjunctions. Visual media do not define categories as clearly. Images are polysemic and not easily deconstructed into elemental parts. In reference to the iconic variety, a paradigm constitutes which icon is selected based on the appropriateness of style, narrative, genre and modal judgement.

The syntagm is the relationship of parts (signs) to other parts (signs) in a structure and reveals the rules of combination in praesentia. "Syntagms are created by the linking of signifiers from paradigm sets which are chosen on the basis of whether they are conventionally regarded as appropriate or may be required by some rule system" (Chandler 85). The syntagm can be spatial or temporal. Spatial syntagms have an element of simultaneity. In "visual signs it is *spatial* relations that are dominant" (Chandler 110), however there is no proper prescribed hierarchy in visual media. Motion pictures often investigate effects of shot-to-shot editing such as the 'Kuleshov effect'[40] or Eisenstein's montage theory[41]. Metz investigated the syntagms of narrative motion pictures through the shots and sequences (termporal syntagm) and arrived at eight[42] key syntagms. Metz acknowledged that the concept of a master cinematic grammar has fallen out of favour. (Metz 145).

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[39] The commutation test is done by selecting a particular signifier and then considering alternatives to this signifier. (Chandler 89). To produce paradigmatic transformations signifiers are substituted and transposed. To produce syntagmatic transformations signifiers are added and deleted.

[40] The Kuleshov effect is the interaction between shots where the edit develops a different meaning through the juxtaposition of isolated shots. Kuleshov discovered this effect in an experiment where he alternated a shot of Ivan Ilyich Mozzhukhin with other shots. (Levaco 200)

[41] Eisenstein defined five methods of montage:

- Metric montage – shots are cut based on measured 'absolute lengths' subordinating the content of shot. (Eisenstein 72)
- Rhythmic montage – shots are cut based on 'actual length' where the content of shot is considered. (Eisenstein 73)
- Tonal montage – shots of similar emotion/theme are combined. (Eisenstein 75)
- Overtonal montage – the combination of metric, rhythmic and tonal montage. (Eisenstein 78)
- Intellectual montage – shots combined to form a particular conceptual meaning. (Eisenstein 82)

[42] The eight key syntagms identified by Metz:

- the *autonomous shot* (e.g. establishing shot, insert);
- the *parallel syntagm* (montage of motifs);
- the *bracketing syntagm* (montage of brief shots);
- the *descriptive syntagm* (sequence describing one moment);
- the *alternating syntagm* (two sequences alternating);
- the *scene* (shots implying temporal continuity);
- the *episodic sequence* (organized discontinuity of shots);
- the *ordinary sequence* (temporal with some compression).

The syntagmatic analysis is valuable in that it allows an understanding of the structure. Categorization of syntagms, from Hodge and Tripp, “divide syntagms into four kinds, based on syntagms existing in the same time *(synchronic)*, different times (*diachronic*), same space (*syntopic*), and different space *(diatopic)*” (Chandler 120).

> “• *synchronic/syntopic* (one place, one time: one shot);
> • *diachronic/syntopic* (same place sequence over time);
> • *synchronic/diatopic* (different places at same time);
> • *diachronic/diatopic* (shots related only by theme)” (Chandler 120).

The syntagms mentioned are concerned with editing and are not specific to animations but rather to cinematic language and principles in general.

Chapter 4: Verisimilitudinous – The speciality of the Photograph and Motion

In the pursuit of verisimilitude, artistic endeavour has achieved the ability to produce computer-generated images that are nearly indistinguishable from the photographic image. This research has approached icons from a point of abstraction, considering the figurative with the attention towards meaning. This research will now engage with the photorealistic image where attention is directed towards verisimilitude. Understanding the ontological difference between the deviously indexical photorealistic image and the photographic image is to understand its implication on the medium. A distinction between analogue and digital is important in analysing this ontological difference. The analogue is continuous with "graded relationships on a continuum" (Chandler 48). The digital is discontinuous and involves "discrete units" (Chandler 48). "Signifying systems impose digital order on what we often experience as a dynamic and seamless flux. The very definition of something as a sign involves reducing the continuous to the discrete" (Chandler 48). The image, or at least the photographic image, is much more resilient to division and unitization. The photographic image's continuous nature is fundamental to its 'truth claim' and gives insight into the photorealistic image's construction.

Referent to Reality: the Photographic 'Truth' Claim

> [T]he practice of faking or counterfeiting can only exist when true coin of the realm exists as well. Rather than denying photography's truth claim, the practice of faking photographs depends upon and demonstrates it. (Gunning, *What's the Point of an Index?* 42)

The photograph is both iconic and indexical. It is iconic because it resembles the object captured and it is indexical through its physical and optical correspondence. The unedited photograph might find its indexicality through optics; however, its iconicity makes it susceptible to convention. The iconic and the indexical are intertwined in the process of creation. The "playfulness celebrated in the digital revolution remains parasitic[43] on the initial claim of accuracy contained in some uses of photography" (Gunning, *What's the Point of an Index?* 41). Gunning does not attribute inherent

[43] The tem parasitic is potent, but it does explain the relationship on which manipulated images thrive.

truthfulness to the photograph for its indexicality. "[T]he apparatus, in itself, can neither lie, nor tell the truth" (Gunning, *The Transforming Image* 42) and always "lurking behind it is a suspicion of fakery" (Gunning, *What's the Point of an Index?* 42). Gunning is concerned with the 'visual accuracy' found in the photograph and the drive to counterfeit that 'visual accuracy'.

Roland Barthes wrote informative essays on photography called *The Photographic Message* (1961) and *Rhetoric of Images* (1964). Barthes specifically analyzed photographic images that were intended for signification (images used by the press and for advertising); however, his theories are applicable to photographic images as a whole. The photographic image is separate from the photographed object; however, it is still directly dependant on that object. There is no 'transformation' to a digital sign for the photograph functions by analogy[44] - it is the perfect analogue of the object captured, as Barthes stated:

> In order to move from the reality to its photograph it is in no way necessary to divide up this reality into units and to constitute these units as signs, substantially different from the object they communicate; there is no necessity to set up a relay, that is to say a code, between the object and its image. (Barthes 17)

The analogue nature of the photograph loses the equivalent characteristics of a 'true sign system' and takes on "a statement of quasi-identity" (Barthes 36). The photographic image has the unique status of "a message without a code" (Barthes 17); however, it also paradoxically possesses a message with a code (Barthes 18). Essentially, the message without a code is at the denotative level, while the message with a code is at the connotative level. The denotation of the photographic image is 'motivated' by 'perceptual analogy' (Metz 108-109). "The photographic signifier seems to be virtually identical with its signified, and the photograph appears to be a 'natural sign' produced without the intervention of a code" (Chandler 137). To describe the denoted image "consists precisely in joining to the denoted message a relay or second-order message derived from a code which is that of language" (Barthes 17) - a connotation.

Interestingly, Barthes argues that the photographic image at a denotative level cannot attain a 'supplementary message' in the 'style of reproduction' for it does not set up 'a code' between the object and its image (Barthes 17). He contrasts photographs with other 'reproductions of reality'

[44] The photograph does not digitize a continuous experience and remains continuous; therefore, it does not form 'sign units'. A specific type of transcoding is involved. The transcoding is reductive in terms of proportion and dimension but not in a transformational capacity (Barthes 17). Lev Manovich notes that the image presents a process of sampling (Manovich, The Language of New Media 45).

that do set up a code between the object and the image such as painting and drawing (Barthes 17). The photographic image, therefore, denotatively operates differently to that of other memetic reproductions. Barthes identifies three levels of the 'coded nature' in drawing:

- "[T]o reproduce an object or a scene in a drawing requires a set of *rule-governed* transpositions" (Barthes 43).
- "[T]he operation of the drawing (the coding) immediately necessitates a certain division between the significant and the insignificant" (Barthes 43). The act of creation always involves a selection of what is important and what is not important. The continuous is transformed into the discrete.
- "[T]he drawing demands an apprenticeship" (Barthes 43). The artist learns a set of codes to reproduce an image. Drawing is not an innate ability.

An illustration obtains a supplementary meaning through "schemes, colours, graphisms, gestures, expressions, arrangements of elements" (Barthes 18). The process of configuration by abstraction establishes a certain discontinuity. The photographic image attains a connotative meaning; however, it is separate from the denotative.

> [O]n the one hand, the press photograph is an object that has been worked on, chosen, composed, constructed, treated according to professional, aesthetic or ideological norms which are so many factors of connotation; while on the other, this same photograph is not only perceived, received, it is *read,* connected more or less consciously by the public that consumes it to a traditional stock of signs. (Barthes 19)

Barthes proposes six connotative procedures[45]: trick effect, pose, object, photogenia, aestheticism and syntax. The trick effect, pose and object produce connotation by modifying the reality of the denoted image itself. The connotative procedures are devious in that the photograph allows the photographer to conceal the preparation of the image (Barthes 21).

The trick effect alters the denoted image by blending various photographic elements from other images. The trick effect is similar to the concept of photomontage or compositing; however, the term 'trick effect' emphasizes the action it has on the denotative. The newly formed image plays on the "special credibility of the photograph" (Barthes 21), which is the visual accuracy and the inherent

[45] The phrase 'connotative procedure' is Barthes' way to describe a set of processes used to change the meaning of a connotative message and infringe on a purely uncoded denotative message.

indexicality of the photographic image. The image created is connotatively loaded; nevertheless, it is capable of appearing as denotatively uncoded. “Naturally, signification is only possible to the extent that there is a stock of signs, the beginnings of a code” (Barthes 21). The trick effect is dependent on the connotative procedures pose and object. The ‘pose’ is the specific configuration and placement of an object. The pose “prepares the reading of the signifieds of connotation” (Barthes 21) and supplements the message through association and metaphor. The object is physically discrete and may contain a connotation of its own or function as a symbol. The unitized object and the sequencing of images allows for a ‘syntax’. Syntax is the combinational structure where the ‘signifier of connotation’ is “no longer to be found at the level of any one of the fragments” (Barthes 24) but at the concatenation. Photogenia is the connotation within the image itself through techniques of lighting, exposure and print. Photogenia requires an inventory of techniques with sufficiently constant connotations to be incorporated into a cultural lexicon of technical 'effects'. (Barthes 23).

The purpose of connotative procedures is best summarized by Andre Bazin’s comment on image making:

> Today the making of images no longer shares an anthropocentric, utilitarian purpose. It is no longer a question of survival after death, but a larger concept, the creation of an ideal world in the likeness of the real, with its own temporal destiny. (Bazin, What is Cinema? Volume I 10)

Andre Bazin, an advocate of realism, contributed to understanding the purpose of the photograph and cinema in *The Ontology of The Photographic Image*. The photograph for Bazin liberates other art forms from the “obsession with likeness” (Bazin, What is Cinema? Volume I 12), enabling it to focus on the “expression of spiritual realities wherein the symbol transcended its model” (Bazin, What is Cinema? Volume I 12), thereby, reducing the pressure for a perfect imitation. Bazin felt that the plastic arts were in a contentious relationship where faithful duplication is enforced in a medium not best suited to it. Bazin claimed that the photograph in its very essence is capable of capturing reality with ‘objective[46]’ “credibility absent from all other picturemaking” (Bazin, What is Cinema? Volume I 13). Bazin designates two forces of human interest: the transcended ideal and the craving for perfect duplication – the subjective and the objective. Bazin explains that artists combine both tendencies:

[46] The notion of photographic ‘objectivity’ should be approached with caution. Earlier in this section, it was demonstrated that denotation may be loaded with connotation and that connotative procedures (trick effect, pose and object) can alter the denotation. Bazin acknowledges the influence of the photographer through selection and approach, however, his emphasis is particularly on photography’s automated process and reduced intervention.

"They have allotted to each its proper place in the hierarchy of things, holding reality at their command and molding it at will into fabric of their art" (Bazin, What is Cinema? Volume I 11).

Bazin incorrectly claimed that only the camera is capable of producing an image that is perceivably real and able to satisfy the craving for perfect duplication[47] (Bazin, What is Cinema? Volume I 14). The statement is refutable and contemporary photorealistic imagery does so. Instead his claim that, "Photography enjoys a certain advantage in virtue of [the] transference of reality from the thing *to* its reproduction" (Bazin, What is Cinema? Volume I 14) is beneficial. The virtue of transference is what 'parasitically' feeds the truth claim of manipulated images. It is important to note that Bazin's theory diverges from the logic of sign by declaring that the photograph is an object in its own right and, therefore, not a sign. The photograph "contributes something to the order of natural creation instead of providing a substitute for it" (Bazin, What is Cinema? Volume I 15).

Andre Bazin on *Aestheticism, Realism and Reality* addresses the fundamental contradiction of choice[48] in a medium that strive for aesthetic realism. Barthes concept of connotative procedures provides a technical understanding of the fundamental contradiction at play, while Bazin highlights the act of choice:

> [R]ealism in art can only be achieved in one way - through artifice. Every form of aesthetic must necessarily choose between what is worth preserving and what should be discarded, and what should not even be considered. (Bazin, What is Cinema? Volume II 26)

Bazin perceives the contradiction of choice as both unacceptable and necessary. The crux is that reality does not make a choice – it simply is. To state it recursively reality is all of reality. Choice, therefore, is "necessary because art can only exist when such a choice is made" (Bazin, What is Cinema? Volume II 26) and it is unacceptable because it is done "at the expense of that reality which the cinema proposes to restore integrally" (Bazin, What is Cinema? Volume II 26). The metonymic and synecdochical structure of the image forces a selection because 'total cinema' does not exist. Munsterberg identified this selection as "the elimination of the indifferent" (Munsterberg 159).

[47] Bazin's statement about the camera: "Besides, painting is, after all, an inferior way of making likeness, an ersatz of the process of reproduction. Only a photographic lens can give us the kind of image of the object that is capable of satisfying the deep need man has to substitute for it something more than mere approximation" (Bazin, What is Cinema? Volume I 14).

[48] It might seem that Bazin's thinking is contradictory. In one instance, he states that cinema attains ultimate realism due to objective 'transference' from the lens. In another instance, he portrays realism as an aesthetic; therefore, 'transference' meets contradiction. The contradiction is important to Bazin's unique approach to realism in cinema.

Bazin's notion is not the standard approach to mimetic representation where something is imitated so closely that it "may be experienced as virtually identical" (Chandler 77). Bazin claimed that,

> [T]he "art" of cinema lives off this contradiction. It gets the most out of the potential for abstraction and symbolism provided by the present limits of the screen […]. It can magnify or neutralize the effectiveness of the elements of reality that the camera captures […].The same event, the same object, can be represented in various ways. Each representation discards or retains various of the qualities that permit us to recognize the object on the screen. Each introduces, for didactic or aesthetic reasons, abstractions that operate more or less corrosively and thus do not permit the original to subsist in its entirety. (Bazin, What is Cinema? Volume II 26)

The interesting play of choice in capturing reality sets up a dynamic that is beneficial for both animation and cinematography. The choice, according to Bazin, "introduces an obviously abstract element into reality" (Bazin, What is Cinema? Volume II 28) and it is the point at which representation differs from reality for "one is compelled to choose between one kind of reality and another" (Bazin, What is Cinema? Volume II 28). Bazin's complex hypothesis of realism places an importance on the aesthetic conventions employed in the vacancy left by the choice "to increase the effectiveness of his chosen form of reality" (Bazin, What is Cinema? Volume II 28). Bazin acknowledges that the medium always involves a point of view and "that there is always a difference between the represented and its representation" (Chandler 78).

Deviously Indexical: Impersonating Reality and Mixing Principles

The invention of the photograph liberated the plastic arts from the 'obsession with likeness'. The progress of technology and the refinement of technique have done a similar favour to the photograph. The photograph is liberated from its duty of transferring the virtue of an object to its image. Lev Manovich veraciously stated that, "cinema can no longer be clearly distinguished from animation" (Manovich, The Language of New Media 295). Indeed, the act of forging indexical impressions to the photographic level of accuracy is impressive and abundant in contemporary films. Cinematography and animation are media of movement with overlapping principles[49] and technical procedure. The notion that cinema "is no longer an indexical media technology but, rather, a subgenre of painting" (Manovich, Image Future 295) is a hefty statement and may indicate the

[49] The principles of cinematography itself are extracted into a digital/virtual format - A virtual cinematography.

erosion of the photographic truth claim. Cinematography and animation are both undeniably affected by the possibilities of digital media. Films produced today have various non-photographed elements infused into their images. Animation and cinematography co-operate to produce a hybrid image which "combines 'the best' qualities of two types of imagery that we normally understand as being ontological opposites: live action recording and 3D computer animation" (Manovich, Image Future 27). The combination forms a sort of advantageous 'metalanguage' (Manovich, Image Future 26). Manovich predicted a decade earlier, when he wrote *Image Future* (2006), that the hybrid image would become the dominant visual culture. A visual culture where:

> [A]esthetics exists in endless variations but its logic is the same: juxtaposition of previously distinct visual languages of different media within the same sequence and, quite often, within the same frame. (Manovich, Image Future 26)

The photorealistic image is constructed by the connotation. If the photographic is bound to what can be transferred, then the computer generated image extends boundaries to what can acceptably be expressed. The photographic code, as Manovich suspected, has not faded away due to its flexibility (Manovich, Image Future 27). Photorealistic animation and digital media as a whole have somewhat enforced, in an unsuspected manner, the photographic code both in process of creation and in the consumption of images. At the same time, it has to some degree eroded the photographic core principles. The contemporary photographic image is largely "photo-GRAPHIC, the photo providing only an initial layer for the overall graphical mix" (Manovich, Image Future 27).

The photograph has an aspect of having-been-there to capture it and the image is not experienced as an illusion. The photograph always acts as evidence for the objects captured by 'having-been-there'. Barthes notes that, "Film can no longer be seen as animated photographs: the *having-been-there* gives way before a *being-there* of the thing" (Barthes 45). The unedited photograph might have these claims; however, the mutable capabilities of the digital has imposed on the validity of the indexical which means it has imposed on the 'having-been-there' statement. The image that remains is not a photograph but only photograph like. It is a 'message with a code' pretending to be a 'message without a code'.

The photorealistic image complicates more than just the photographic and cinematographic principle. To accept[50] the photorealistic image within the photographed image, the photorealistic image needs to remove all perceivable traces of its 'intervention'. Any indicators of artificiality or synthetic-ness will result in claims of inauthenticity, the ersatz or uncanny. This means that the photorealistic image postures claims of indexicality akin to that of the camera; however, the process of creation is vastly different to that of the photograph. The photorealistic image masks the application of connotative procedure to the denotative image, for images in animation are always 'painted'. It is not to say that animation's potential is lost on its creators but it is masked from its consumers.

Lev Manovich argued that, "The internal structure changes first, and this change affects the visible skin only later" (Manovich, Image Future 28) where "we see the old 'superstructure' that still sits on top of the 'new' infrastructure" (Manovich, Image Future 42). The structure of visual culture has changed in both animation and cinematography. Computer generated images are occasionally used in place of photographs. In these instances, "the old 'base' of photography has finally been completely replaced by a new computer-driven one" (Manovich, Image Future 29). The 'skin' is the way a typical photograph looks and it has not yet changed and might never change. The function of the photographic aesthetic prevents it from changing because it is a desire to master the photo-real rather than replace it - the illogical desire to create a perfect imitation. Photorealistic images unsuspectedly reinforced the photographic aesthetic by studying reality itself. This is based on the fundamental assumption that, "in order to re-create an image of reality identical to the one captured by a film camera, we need to systematically simulate the actual physics involved in construction of this image" (Manovich, Image Future 30).

Manovich partitions the construction process into two paradigms: the reality simulation paradigm and the reality sampling paradigms (Manovich, Image Future 31). The framework benefits from the addition of a third paradigm - the manually constructed. The sampling paradigm often involves photographic techniques for their indexical nature, such as photogrammetry, high dynamic range (HDR) lighting, motion capture, camera matching and photographic texturing. The sampling paradigm, therefore, acquires its indexicality from the photograph. The simulation paradigm follows models extracted by studying reality, such as physically unbiased path traced rendering, camera

[50] I mean 'accepted' in terms of appearing real and plausible within the context of the motion picture. I do not mean that people duped by the images as being real. This is why suspension of disbelief is an important concept to motion pictures.

perspective, simulated motion blur and simulated physics. Of course, animation is not required to follow reality but the hybrid image and photorealistic image do.

> The process systematically takes physical reality apart and then systematically reassembles the elements into a virtual computer-based representation. The result is a new kind of image that has a photographic/cinematographic appearance and level of detail yet internally is structured in a completely different way. (Manovich, Image Future 33)

The constructed image underscores the synthesized nature of animation's movement. Simulating and sampling movement challenges the notion of authorship proposed by manual creation. It is important to account for the role of the animator to the animation with the peculiarities of simulated and sampled movement. Manovich proposed that the animator shifts from author to supervisor but ultimately remain in control of the motion and the image created. The animator remains in control through defining parameters and the desired outcome through the selection of the performance. In simulation, a model is applied but this model is not fixed. It may be changed or swapped out.

> In Blinn's terms, an animator who creates movement by manually defining keyframes and drawing in-between frames is like a painter who is observing the world and then making a painting of it. The resemblance between a painting and the world depends on the painter's skills, imagination and intentions, whereas an animator who uses physically based modeling is like a photographer who captures the world as it actually is. (Manovich, Image Future 36).

Blinn's painter and photographer analogy is useful in understanding the difference between manual and simulated creation, but as Manovich stated "it is not completely accurate" (Manovich, Image Future 36). The simulation is removed from actual physics, which "means that a designer can manipulate it in a variety of ways" (Manovich, Image Future 38) not bound to the physical. The simulated is not only captured but also defined. Sampled reality poses another deviation from the typical manual construction, in that 'sampling' references reality directly similar to the camera. The difference between the camera and sampling is that various sampled parts are assembled into something that never existed. It is therefore a different logic to cinematography and photography.

The final conceptual deviation is 'virtual cinematography'. A virtual world is setup and a virtual camera is used to capture that world. The virtual is an extraction of principle into mathematical models. The hybrid image is therefore not traditional animation, not traditional cinematography and

not traditional special effects. “When the techniques drawn from these different traditions are fused together in a computer environment, the result is not a sum of components but a variety of hybrid methods[…]we will no longer find any of these techniques in their pure original state” (Manovich, Image Future 38). It is the potential and versatility that the hybrid image contributes.

Beyond the Singular Image: Motion as Anchorage and Relay ‘Like’

Norman McClaren astutely summarized the spirit of animation:

> Animation is not the art of drawing that moves but the art of movements that are drawn; What happens between each frame is much more important than what exists on each frame; Animation is therefore the art of manipulating the invisible interstices that lie between frames. (Sifianos)

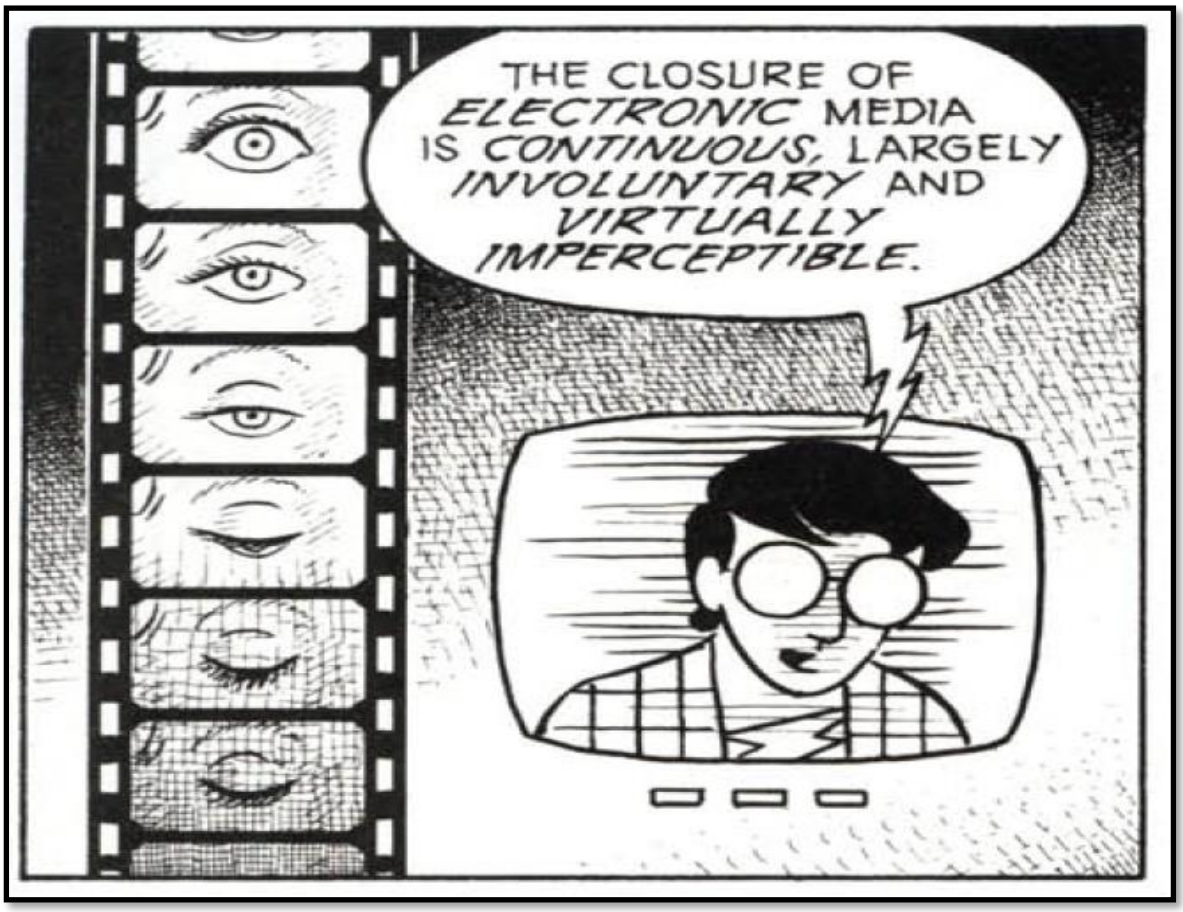


Figure 23. Closure, illustration from: McCloud, Scott. Understand Comics: The Invisible Art. New York: HarperCollinsPublisher, 1993, p.68 Print.

Movement produces the impression of reality. In comics, closure is the active participation from the reader in the form of an imaginative leap from panel to panel. In animation, closure is continuous without an imaginative leap for the closure between frames is involuntary (McCloud 65). An imaginative leap is frequently required between shots but rarely within the shot sequence.

The function of a text to an image might provide information about the function of a frame to a frame in motion pictures. Roland Barthes interrogated the linguistic text in conjunction with the photographic image[51]. He reflected on the difference between image-to-text and text-to-image. Appending an image or illustration to a text would visually elucidate and 'realize' the text as a "return to denotation from a principal message (the text) which was experienced as connoted" (Barthes 25). Appending a text to an image shapes the meaning of the image in that it 'sublimates', 'patheticizes' or 'rationalizes' the image (Barthes 25). It is "a parasitic message designed to connote the image, to 'quicken' it with one or more second-order signifieds" (Barthes 25). The text sculpts the meaning of the image but it does not call attention to this action. Barthes was inspecting the 'naturalizing process' where the connotation of text seems to share in the image's denotative objectivity (Barthes 26). Text often conceals the connotative action by taking a stance that it is "simply amplifying a set of connotations already given in the photograph" (Barthes 27).

Barthes identifies three messages: the textual message (linguistic), the literal message (denotative image/'non-coded iconic') and the symbolic message (connotated image/'coded iconic') (Barthes 36). The textual message is separate from the literal message and the symbolic message. The literal message and the symbolic message share the same substance in that they form the iconic message; therefore, they are not separable. The separation is only in an analytical capacity as a literal message in a 'pure state' is improbable. This analytical separation is justified if it assists with understanding how the image works.

The image is polysemic and the 'ineffable richness' complicates signification in that the signifiers imply a "'floating chain' of signifieds" (Barthes 39). A signifier is described as floating when it has multiple signifieds and can result in an uncertain sign – the section *Animation as Simulation* analyses this further. The conundrum is that the image signifies so much that it signifies nothing in a meaningful way. A sign can only be a sign if it stands for something to someone. Techniques are developed with the intention "to fix the floating chain of signifieds in such a way as to counter the terror of uncertain signs" (Barthes 39). The "linguistic message with regard to the (twofold) iconic

[51] Barthes was concerned with photographic images. In particular, the press and advertisement photograph because "in advertising the signification of the image is undoubtedly intentional" (Barthes 33), however I am extracting the concept that can apply in general to images. This is perhaps not the intention of his work.

message" (Barthes 38) is such a technique. The linguistic message functions through anchorage and relay.

In anchorage, the linguistic message anchors through "a denoted description of the image" (Barthes 39) – a denominative function. The linguistic message guides identification in the denoted image and it guides the interpretation of the connoted image. The "text *directs* the reader through the signifieds of the image, causing him to avoid some and receive others" (Barthes 40). Anchorage, therefore, has a repressive action. The repressive action is summarized in a statement by Barthes

> In all these cases of anchorage, language clearly has a function of elucidation, but this elucidation is selective, a metalanguage applied not to the totality of the iconic message but only to certain of its signs. (Barthes 40)

In relay, the linguistic message and the iconic message are complimentary. The cooperation produces a meaning in which neither the linguistic nor the iconic message would have on its own. The "words, in the same way as the images, are fragments of a more general syntagm and the unity of the message is realized at a higher level, that of the story, the anecdote, the diegesis" (Barthes 41).

Analyzing connotation is intricate because a signified might have multiple signifiers (the type-token difference) and there is no particular language to address connotation itself with specificity. The symbolic message can have various readings depending on predisposed knowledge. In Barthes' linguistic influenced terms, "the one lexia mobilizes different lexicons" (Barthes 46). A lexia is the sign unit and in this instance the image. The lexicon is the set of knowledge associated with the lexia, therefore, resulting in a dynamic relationship between creator and receiver. The signifier's medium (substance) and context (syntagm) complicates the ability to analyze the connotation further. The rhetoric of the image is that the signifiers of a medium, referred to as connotators by Barthes, share a common domain of ideology, however, seem neutral and natural. An inventory of connotations forms an ideology.

Motion as a technique of fixing the 'chain of signified' should not be conflated with the linguistic techniques of anchorage and relay. The manner in which anchorage and relay sculpts the meaning of a piece is informative. In a cautious application, motion functions 'like' anchorage and relay simultaneously. The frame that comes after is always anchored to the frame that came before. The consistency of the elements between the two frames, therefore, has a descriptive action. The perceivable consistency guides identification in the denoted image. Interpretation is guided by the

fact that there has been a change: the difference can be identified and therefore compared. Relay is established in that the two images juxtaposed sequentially have a meaning of its own that is not the same as the two images separately – hence 'the invisible interstices that lie between frames'. The difference between motion and the linguistic techniques for fixing floating signifiers is that motion does not hold an ideology of its own, whereas text already has a connotative dimension in the form of ideology.



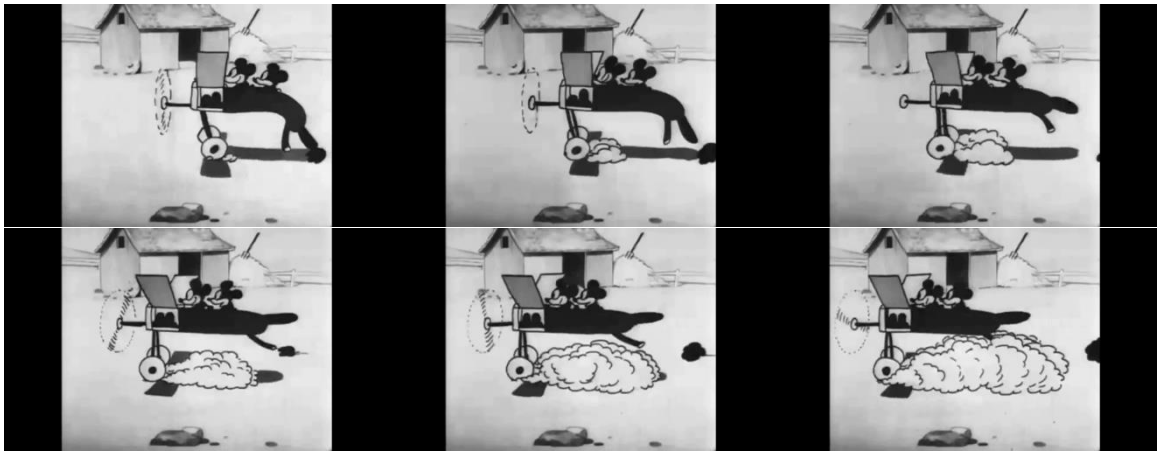


Figure 24. Plane Crazy, 21 frame breakdown showing Anchorage and Relay between Frames, illustration from: Plane Crazy. Dirs. Walt Disney and Ub Irwerks. 1929. Animation.

Virtual Movement and Animated Realities

> The movement-as-life problematic resonates with a philosophical approach rejecting the dualism and substantialism, refusing a divide between matter and energy, body and mind space and time (Lamarre 118).

If animation is a synthesized motion, purposefully crafted frame by frame and rendered to an audience as apparent motion, then it is arguable that animation functions as virtual. Virtual may initially be defined as follows:

> A virtual X (where X is a common noun) is something, not an X, which has the efficiency (virtus) of an X. (Baldwin 763).

The quote establishes what Charles Sanders Pierce considered the proper meaning of virtual. It is a respectable start to situate the concept; however, it would require an understanding of 'efficiency' and what makes a 'virtual x' not an 'x' but in some way representative or functionally an x. The dichotomy between 'x' and 'virtual x' as essence can be problematic from various perspectives – specifically existentialist and nihilist perspectives. The relation of reality and virtuality is dependant on the ontological stance one takes to reality, existence and actuality. Micheal Heim defined virtual as a "philosophical term meaning 'not actually but just as if'" (Skagestad). The concept of virtual is a metaphysical juxtaposition of the concept of actual. The actual and the virtual are not opposing but contrasting. Understanding 'the real' is the core of all disciplines whether it is concerned with subjectivity or objectivity. An exhaustive investigation of virtual would be out of the scope of this

paper; as metaphysical discussion concerning reality and concepts of being and existing have been argued since times of antiquity. It is, therefore, best to define virtual as follows:

> [A] "virtual" X [is] what you get when the information structure of X is detached from its physical structure. (Skagestad)

The approach in this essay was observing how detached 'information structures' are from 'physical structures' through sign. Various art movements have taken an array of approaches to depicting reality (mimetic verisimilitude) or a reality of a sort (subjectivity). Cinematography claims to capture objective reality but at the same time it is able to construct a subjective reality to an extent. Animation has a reduced claim to an objective reality but it can construct any subjective reality, therefore, a discussion of modals is appropriate.

Modality of Animation

Modality in semiotics is the ontological status of reality or reliability (truth value) accorded to a sign or a text. "Umberto Eco provocatively asserts that 'semiotics is in principle the discipline studying everything which can be used in order to lie'" (Chandler 65). When interpreting a text, a modal judgement is made by comparing models of life and the model of the text. A modal judgement is therefore "dependent on relevant experience of both the world and the medium" (Chandler 65). Suspension of disbelief bridges and negates the disruptive difference in the modality of representation and reality. Modal judgement evaluates what is possible, plausible, actual, fact and fiction. Modality is influenced by "formal features of the medium (such as flatness or motion) and content features (such as plausibility or familiarity)" (Chandler 66). The specific truth claim of the photographic with its denotative neutralizing action is an example of the formal features of the medium. Ordering the modality of various media is improbable. A photograph for instance may offer a higher modality in 'formal features' over words; however, it might not have claims to a higher modality in 'content features' or psychological impact. "What are recognized as realistic styles of representation reflect an aesthetic *code*" (Chandler 68) and "[o]ver time, certain methods of production within a medium and a genre become naturalized" (Chandler 68). "At a certain point the iconic representation, however stylized it may be, appears to be more true than the real experience" (Chandler 66) psychologically.

Animation is a medium that references the actual, depicts the possible, allows for the counterfactual, the counterfeit and the factual as required. Animation, however, is not capable of representing the actual itself. Cinematography and photography represent the actual, though it is never quite an accurate representation of the actual. Animation offers the mobility of ideas "which are not controlled by the physical necessity of outer events but by the psychological laws for the association of ideas" (Munsterberg 97). Animations allows for the visual simulation for possible ideas.

Animation as Simulation

> Abstraction today is no longer that of the map, the double, the mirror or the concept. Simulation is no longer that of a territory, a referential being or a substance. It is the generation by models of a real without origin or reality: a hyperreal (Baudrillard 166).

Simulacra and Simulations examine the contemporary relation between sign and reality, and the implications of modular reproduction. "*The desert of the real itself*" (Baudrillard 166) has become a sort of maxim and an astute encapsulation of the concepts posited by Jean Baudrillard. *Simulacra and Simulation* expound the implosion of the sign due to the liquidation of the referent to material and social reality. Signs are increasingly empty or floating and the bond between signifier and signified eroded.

The empty signifier and floating signifier is "a signifier with a vague, highly variable, unspecifiable or non-existent signified" (Chandler 78). The floating signifier requires the signified to be fixed for it to have meaning. Barthes noted the linguistic message as such a technique, whereas, this essay added motion as a fixing technique. "For Lévi-Strauss such a signifier is like an algebraic symbol which has no immanent symbolic value but which can represent anything" (Chandler 79) and "Barthes defines an empty signifier as one with no definite signified" (Chandler 79).

Simulation imitates the operations of reality; however, in the contemporary condition of media it has removed "the abstraction's charm […] the magic of the concept and the charm of the real**"** (Baudrillard 166 - 167) by eliminating the referential and increasing the chain of signifieds. The simulacrum is a copy without the original. Simulation constructs its imitations through miniaturized units, which can produce an indefinite configuration of endless reproductions based on these units. "It no longer has to be rational, since it is no longer measured against some ideal or negative

instance. It is nothing more than operational" (Baudrillard 167). It seems contradictory that a reality, which is rational, could be replaced by something that is irrational. To create a simulation or a simulacrum that is an acceptable replacement for a rational reality in the first place, rationality must form part of it. The validity of Baudrillard's statement concerning rationality aside, the concept of operational and unitization reflects back to animation as potential. Potential that allows for the hyperreal - **"**the product of an irradiating synthesis of combinatory models in a hyperspace without atmosphere**"** (Baudrillard 167)**.**

Animation and simulation intersect in that animation, specifically photorealistic animation, is a "perfect descriptive machine which provides all the signs of the real and short-circuits all its vicissitudes" (Baudrillard 167). Animations are separate from reality if one accepts that there still is a 'true' reality and reject the notion that reality is a hyperreal reproduction or a simulacrum. Animation has the capability of imposing on reality. This is true for the case of virtual reality; however, usually animation does not impose on reality by acting only as a representation. Lev Manovich offers a distinction between representation and true simulation. "The simulation tradition aims to blend virtual and physical spaces rather than to separate them" (Manovich, The Language of New Media 112). The defining criterion is the space in which the viewer participates. A representation is capable of constructing a virtual space; however, true simulation blends actual space and virtual space in experience. Manovich's explanation of a painting illustrate the difference between blending and constructing space:

> [A] painting presents a virtual space that is clearly distinct from the physical space where the painting and spectator are located […] in the simulation tradition, the spectator exists in a single coherent space. (Manovich, The Language of New Media 113)

The difference between simulation and representation is not mutually exclusive for the two principles can cooperate, which is unlike Baudrillard's view where representation and simulation are opposites. In Baudrillard's view, "representation tries to absorb simulation by interpreting it as false representation, simulation envelops the whole edifice of representation as itself a simulacrum" (Baudrillard 170). The distinction proposed might only be appropriate to the first tier of simulation, which Baudrillard identifies[52] as the faithful copy. Animation's motion and iconicity is representation;

[52] The following is the successive phases of the image Baudrillard identified.

1 It is the reflection of a basic reality.
2 It masks and perverts a basic reality.
3 It masks the *absence* of a basic reality.

however, it has the potential of simulation and is capable of second and third tier of simulation – perversion of reality and a play at appearing real. The contentious nature of the deviously indexical animation extends to blur reality. A complete removal of the referential seems impossible. Instead distorting or suppressing the referential by distancing and augmenting meaning, what Baudrillard calls second hand truth and authenticity, is much more likely (Baudrillard 171). It would be an injustice to say animation does not reference reality; however, the reference it draws upon is distant and only trace like. Baudrillard explains the act of simulation:

> To dissimulate is to feign not to have what one has. To simulate is to feign to have what one hasn't. One implies a presence, the other an absence. But the matter is more complicated, since to simulate is not simply to feign. (Baudrillard 167)

Simulation obfuscates the principles of reality by complicating the relationship of the real and the imaginary. The simulator affects objectivity in that the 'symptoms'[53] are true in effect but false in actuality. The distinction of authentic and counterfeit becomes faded[54]. Theorizing that simulation replaces reality and truth in general undermines the alteration individuals induce on a true reality. It does express the lament of losing the ability to distinguish a copy from the original and indeed the "the subtle, maleficent, elusive twisting of meaning" (Baudrillard 176) does occur.

> 4 It bears no relation to any reality whatever: it is its own pure simulacrum. (Baudrillard 170)

[53] Baudrillard used the term symptom in reference to real illness and simulated illness (particularly psychological). Symptom in this essay is used in a more abstracted sense for that which is an observable result of an event or action.

[54] The faded distinction between counterfeit and authentic for Baudrillard is the "worst form of subversion" (Baudrillard 169).

Chapter 5: Conclusion

The research inquired into animation's 'potential to clarify the complex' as a visual messaging system utilizing the mimetic to abstract icons in the pursuit of animation's unique ontological essence. The process inspected two avenues of animation. The first being animation that is notably constructed: images with observable artifacts from the rule-governed-transposition process. The second being animation that is not readily distinguishable as constructed: images suppressing observable artifacts from the rule-governed-transposition process. The contemporary subset-superset dichotomy of animation and cinematography prompted an analytical separation based on the media serving distinct human interests. Animation and cinematography approached the subjective transcended ideal and the craving for perfect duplication in different ways. The separation positioned animation and cinematography into a broader context of 'motion pictures' and bypassed the dichotomy; however, animation as a term called for a functional definition to address core elements of animation: the study and synthesis of apparent motion, secular and sacred usage, 'metamorphoses' within movement, ability to suspend disbelief and its approach to sign usage.

The ontology of the photograph served as a pivotal analytical tool in approaching the distinguishable and indistinguishable rule-governed-transpositions – images distinguishable as constructed and images that are not distinguishable as constructed. A rule-governed-transposition implies a supplemented or transformed meaning in the process of transposing from one medium to another. The photograph's denotative ontological existence does not allow the image to be a rule-governed-transposition in that there is no meaning supplemented or transformed between the object and the photograph of the object. It is the perfect analogy. The photograph is susceptible to connotation through connotative procedure that might change denotation but not through denotation that is coded itself – the rhetoric of the image. The photorealistic animation has a unique nature in that it attempts to mask its artificiality, which is the result of its rule-governed transposition. The photorealistic image in contemporary animation parasitically depends on the photograph's ontological existence to appear untainted by the process of rule-governed-transposition, while it is in fact a message with a code from the very beginning. Animation that does not mask its rule-governed-transposition process applies a wide range of abstraction that benefit figurative communication through the four master tropes. It might become naturalized through convention but it never masquerades as natural.

Animation pivots motion not only for an aesthetic of life or an act of metamorphosis, but also for fixing the denoted image's 'floating chain of signifieds'. The linguistic techniques, anchorage and relay, provided the conceptual ground upon which motion functions similarly in guiding meaning through movement itself. Motion is not equivalent to the linguistic anchorage and relay and caution is advised, for motion does not produce a connotation of its own.

Animation functions in the modality of possibility. It utilizes the actual but never directly. Its rule-governed reproduction uses models and unitization. The representation can oscillate between varieties of truth values. The images are constructed with connotation, which may or may not be naturalized in modern animation. Animation conserves the interest in reality and yet completely changes it so that it is separate of all possible reality. It simulates only aspects of reality that reflects human interest.

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