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From mythology to psychology: Identifying archetypal symbols in movies

ABSTRACT

In this article, we introduce the theory of archetype, which explains the connection between ancient myths and the human mind. Based on the assumption that archetypes are in the deepest level of human mind, we propose that archetypal symbolism is a kind of knowledge that supports the cognitive process for creating subjective world-view towards the physical world we live in. According to archetypal symbolism, we conducted an empirical study to identify archetypal symbols in modern movies. A new collection of movie clips was developed to represent eight essential archetypes: anima, animus, mentor, mother, shadow, hero's departure, hero's initiation and hero's return, which can be used in future studies on human emotion. In order to investigate the emotions towards these archetypal symbols, we provide suggestions from the psychological point of view. The present study demonstrates how to identify symbolic meanings in movies, and indicates a new direction for future studies in psychology.

KEYWORDS

mythology
archetypes
symbolic meaning
movies
psychology
human emotion

INTRODUCTION

Myth is the oldest form of storytelling in human history. Since there are no historical records or scientific proof, it is difficult to justify if these mythical narratives are true facts or just merely imaginary stories made up by ancient people. Nevertheless, myths are still influencing modern society and still fascinating to people nowadays. Myths, as a primeval form of living reality, have been woven into our lives in many different ways. In general, there are two ways of interpreting myths: literal and symbolic (Dundes 1988). Literal interpretations look into factual or historical bases for myths while symbolic interpretation prefers to regard myths as a code requiring some deciphering. In the early nineteenth century, myths were treated as nothing different from fables, inventions and fictions (Eliade 1998). Thus, rationalists treated myths as delusions and pure imaginations (May 1991). From a literal perspective, myths would be merely an unrealistic and unscientific version of history. The greatest value we can gain from myths would probably be anthropology (Tylor 1920), rituals (Eliade 1998) and religions (Malinowski 1954), which mostly aim at finding a reasonable explanation or rational speculation for the reality of ancestral societies. Interestingly, it was found that ancient people tend to present symbols as an instance of association with reality, instead of looking for rational causes (Kirk 1975). It appears that myths probably were not meant to give a rational explanation of reality but to provide a symbolic representation that shows the natural tendency of how ancient people experienced the reality that they lived in.

The nature of myth is different from fictions we read today. More than just storytelling, some scholars consider a myth as a way of making sense the physical world (May 1991). A myth is a sacred narrative usually explaining how the world or humankind came to be in its present form (Dundes 1988). One of the foremost functions of myth is to establish models of behaviour (Eliade 1998). Through its myth, a healthy society gives its people relief from guilt and anxiety, and encourages humans to discover true values in their lives (May 1991). Rather than merely imaginary stories, myth is a narrative resurrection of a primeval reality. 'It is a living reality, believed to have once happened in primeval times, and continuing ever since to influence the world and human destinies' (Malinowski 1948: 100). Indeed, it is surprising that even though the content of myths seems unrealistic and irrational, myths are still manifested in modern society. Moreover, some contemporary writers created a new narrative genre *Mythopoeia*, integrating traditional mythological themes and the modern form of literature (Carpenter 2006). Nowadays we still can see many traces of myths not just in books but also in mass media, such as artwork, music and movies (Faber and Mayer 2009). It seems that myths are still influencing modern societies in an implicit way.

Psychologist Carl Jung (1981) proposes the theory of archetypes, claiming that there exists an inherent tendency to the manner in which human beings unconsciously experience the world. The theory of archetypes explains how the symbolic meanings in myths influence our unconscious mind from a psychological point of view. Extended from Jung's theory, we provide a theoretical framework that connects mythology and psychology, and define archetypal symbolism as a kind of knowledge for humans to experience the world in a symbolic manner. Similar to myths, movie is a visual–auditory symbolic narrative that manifests the living reality of modern people. Based on Jung's theory, movies have become a fruitful resource for studying archetypes in popular culture and modern society (Hauke and Alister 2001). Therefore, we

performed an empirical study. In this study, we identified symbolic contents in modern movies based on archetypal symbolism and edited these featured scenes as short movie clips for future use. Since we took into account both archetypal symbolism and psychology, these movie clips can be directly used in psychological studies, especially studies on human emotions. Finally, we discuss the implication of our findings and directions for future work.

THE COLLECTIVE UNCONSCIOUSNESS AND ARCHETYPES

The connection between mythology and psychology was first revealed by Jung (1981). Based on his own observation of his mentally disordered patients during their therapeutic sessions, and on extensive research on myths, religions and cultures, he proposed the concept of *the collective unconsciousness* (Jung 1981). This suggests that all human beings share a deep level of unconscious mind universally, which is hidden beneath the personal psyche (including both conscious and unconscious minds). The collective unconsciousness contains some contents and modes of behaviour that are identical in all human beings, and thus constitutes a common psychic substrate of a universal nature which is present in every individual. As a result, all human beings, sharing essentially the same biological equipment (e.g. the brain and central nervous system), would show a tendency to perceive common meanings embodied in a symbol, even at an unconscious level (Bradshaw and Storm 2012).

Jung further developed the concept of archetypes (Jung 1964). Archetypes are defined as the components of the collective unconsciousness, which is an inborn tendency that cannot be consciously acquired to experience things in a certain way. They exist universally in the psyche, and prepare individuals psychologically to deal with life experiences that are universally common (Walters 1994). Archetypes are unconscious psychic impulses that are impersonal, inherited traits that present and motivate thoughts, emotions and behaviours long before any consciousness develops. An extreme analogy would be describing archetypes as the structure of the psyche, which is similar to organs of the physical body (Jacobi 1973). In this way, archetypes are similar to other sensory and cognitive models, e.g., receptive fields of the retina are not consciously perceived, but determine the structure of visual perception (Perlovsky 2007). People interpret the world through archetypes, however without being aware of the existence of them.

ARCHETYPAL SYMBOLISM

In essence, symbols itself are ontologically objective, and bear no psychological meaning. Their meanings emerge only when a person start to *live* in the world. By saying this means that the meaning of symbols is ontologically subjective to the knowledge in one's mind. Therefore, symbols can be in any kind of forms or values of anything in the physical world depending on how we approach the physical world (White 1940). Symbolic meaning is seen as a dynamic phenomenon, being constructed while interaction occurs, and in turn, grounding the basic understanding among people within it. It could also be understood as a *pre-understanding* of the physical world. Extended from this pre-understanding by *living* within it, humans create their new *understanding*, which in turn becomes the pre-understanding of the society. This loop is so-called hermeneutic circle (Gadamer 1975). People living in the same society or in the same culture to some extent share the same languages,

value system, and even ways of thinking. Sometimes we also see some global trends occurring along with time. The meaning of symbols would vary based on which layers of knowledge are adopted to support the experiencing procedure. This knowledge is not always explicitly given through education, but more often is gained implicitly through living within it.

In our previous work (Chang et al. 2013), we argue that there are many levels of knowledge that supports the cognitive process that constructs our subjective world-view (see Figure 1). These five levels of knowledge are personal, social, cultural, global and universal. The first four levels of knowledge are neither static nor independent, but in a dynamic circulation. Information flows through different levels, influencing their next level of knowledge simultaneously. According to the theory of the unconsciousness, the top level – personal knowledge – is related to the concept of one's ego, which makes a person consciously think herself as a unique individual. The next three levels of knowledge are concealed in one's personal unconscious mind. Thus, a person would be unconsciously influenced by the given society, culture, or even global trends. Top four levels of knowledge change differently with time while the deepest level of knowledge remains consistent across time and space as we call it the universal knowledge of symbols (Kooijmans & Rauterberg 2007). This deepest level of knowledge is inborn with the collective unconsciousness, appearing ever before any consciousness is built. The essential components of the collective unconsciousness, archetypes, represent the universal tendency of how humans think and act towards the physical world. This universal level of knowledge constructs a fundamental structure of world-view, which provides a convincing explanation for the phenomenon that many symbolic contents in ancient myths still manifest in modern society. In this sense, archetypal symbolism can be defined as a universal knowledge of symbols that describes how these universal symbolic meanings of the physical world are revealed to humans and represented in myth, culture and religion across time.
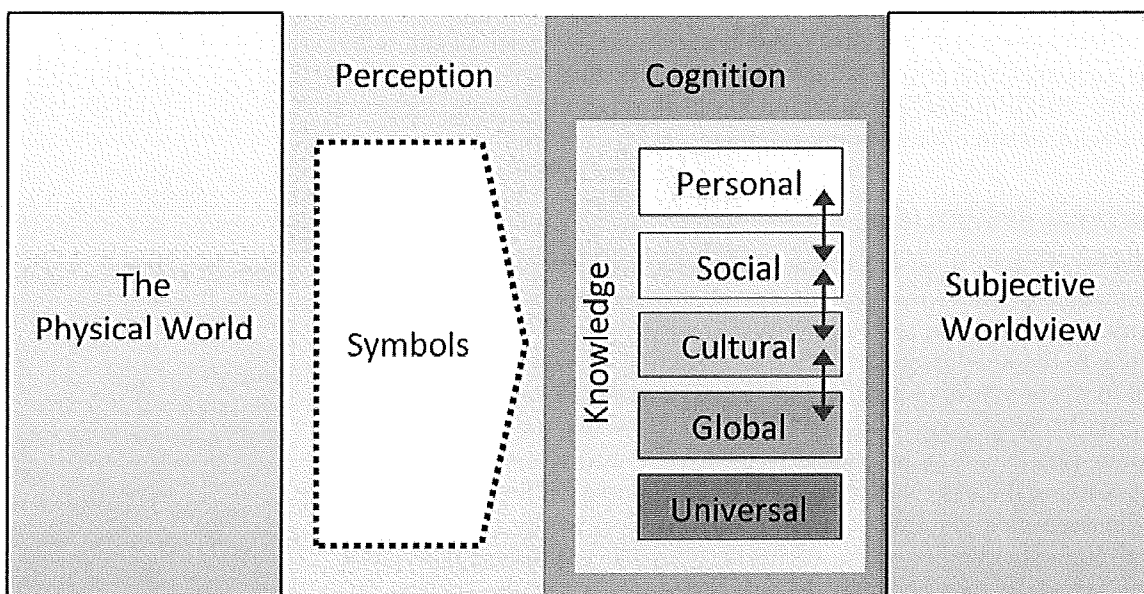

Figure 1: The framework of how subjective world-view is built with symbols, adapted from our previous work (Chang et al. 2013).

Archetypes have been found to be represented as ancient motifs and predispositions to patterns of behaviour that manifest symbolically as archetypal images in dreams, art or other cultural forms (Jung 1964). Jung identified various archetypes from his diagnoses of mental disorder in his patients by asking them to verbalize or visualize their dreams (Jung 1981). He also tried to translate his own emotions into images while he was 'diving' into his unconsciousness, or rather to find the images that were concealed in his emotions (Jung 1989). Drawing mandalas (a kind of archetypal symbol originated from Hinduism) enabled Jung to represent *the self* (a specific kind of archetypes) (Jung 1964). Meanwhile, mandala was also considered as a telematics design of the cosmos and consciousness, and represents high-level spirituality of humans (Huh 2010). Mandala, as the representation of the archetype of the self, is a typical example of the universal symbolic content that exists across culture and time. There are still many other archetypes that are manifest in myth and modern society that await further discovery.

APPLYING ARCHETYPAL SYMBOLS TO MODERN PSYCHOLOGICAL STUDIES

Jung's theories built a basic framework that explains the connection between myths and human minds, and further became the theoretical basis of analytical psychology and Jungian psychotherapy (Knox 2001; Roesler 2012). However, these theories were often criticized by the mainstream of science for the unfalsifiability of his explanation (Jones 2003; Walters 1994). There seems a missing link between Jung's theories and the paradigms of modern psychology. Nevertheless, one of our previous studies ((Ivonin, Chang, Chen, & Rauterberg 2013) has shown that the archetypal symbols of the self induces unconscious emotions in people who have no acquired knowledge about Jung's theory. Emotion is an important aspect of human psychological representations. Although the collective unconsciousness cannot be accessed and observed in an objective manner, this study has shed some lights on applying Jung's theories in research towards emotion. It seems promising to consider archetypal symbols as a new category of affective stimuli that are often used in experiments about human emotions. In light of this, we followed archetypal symbolism to conduct an empirical study to develop a collection of archetypal symbols that fit the need for psychological experiments. This collection of archetypal symbols can thus be used in future studies on human emotions.

IDENTIFYING SYMBOLIC MEANINGS IN MOVIES

One of the most prominent resources of archetypes would be movies. Movies are a very complex form of symbolic content that communicates delicate and rich visual–audio information to the audiences by means of storytelling. Cinema offers not only the content of movie, but also both a means and a space highly similar to psychotherapeutic sessions that enable the viewer to witness their psyche in projection (Hauke and Alister 2001), which means that viewers are in a process of projecting themselves in the movies and not just being a pure 'viewer'. Moreover, it is also claimed that the cinema deliver a contemporary experience for the viewers to set apart from their daily life and engage their unconscious in a manner similar to hypnosis and dreaming. Some researchers have put efforts towards elaborating symbolic meanings on modern movies according to Jung's theory (Hauke and Alister 2001). These efforts have provided good references for our analysis of archetypes.

Jung first discovered several essential archetypes: hero, shadow, anima, animus, mentor (or wise old man) and mother (Jung 1968; Neumann 1970). Furthermore, mythologist Joseph Campbell (1973) extended Jung's concept of the hero archetype to a more complete scope – *monomyth* (or hero's journey), a common structure in all mythical hero stories in different cultures and religions. This metaphorical structure depicts seventeen stages that the hero has to go through to complete his adventure. These stages can be generally divided into three larger stages: departure, initiation and return. A similar pattern can also be seen in modern screenwriting: setup, confrontation and resolution (Field 1984). Interestingly, the structure of monomyth also applies to modern society and is clearly manifest in modern mass media (Faber and Mayer 2009). These abovementioned archetypes are considered to be essential among all the archetypes. Therefore, we included all of these eight archetypes as the first attempt in this undertaking: anima, animus, mentor, mother, shadow, hero's departure, hero's initiation, hero's return. To fulfill the requirement of psychological experiment, it is suggested to have stimuli with standardized format for each archetype. Therefore, we aimed at developing at least one movie clip for each of the eight archetypes. The length and the resolution of these movie clips should be identical or at least similar.

METHOD

The goal of this study is to develop one five-minute movie clip from one commercial movie to represent each archetype. For each archetype, we surveyed two to three alternative movies that have a character relevant to the given archetype. For each movie, we looked into all the scenes of the target character and selected special scenes that feature the corresponding archetype. Next, we edited these featured scenes into a five-minute movie clip. To further confirm that the selected scenes authentically represent archetypes, we looked for the collaboration with researchers from the organization[1] The Archive for Research in Archetypal Symbolism (ARAS) to help verify the alternative stimuli we prepared. Since the early 1930s, ARAS has been collecting and annotating mythological, ritualistic and symbolic images from all over the world and from all epochs of human history. Experts of ARAS offered their help to review the film clips we had collected. They did the review separately for all the clips. Only those clips that they all considered as archetypal clips were kept in our collection. After several iterations of discussions and strict filtering sessions, we built a set of movie clips that are verified as archetypal symbols.

RESULTS

The detailed editing instructions for these movie clips are provided in Table 1. In this section, we will explain the symbolic meaning of each archetype and the corresponding movie that has been chosen.

Anima

In the unconscious of the male, the archetype anima finds expression as a feminine inner personality whereas animus is expressed as the masculine inner personality in the female's unconscious. The anima is the utmost important factor in the psychology of a man in terms of emotions and affects (Jung 1981). Anima intensifies, exaggerates, falsifies and mythologized all emotional relations with his work, generating fantasies and entanglements. 'When the

Archetype	Movie	Length	Time editing [start–end]
Anima	*American Beauty* (Mendes, 1999)	5'10"	0:15:02–0:17:20; 0:19:03–0:20:04; 0:36:09–0:37:28; 0:43:39–0:44:11
Animus	*Black Swan* (Aronofsky, 2010)	5'29"	0:46:40–0:49:24; 1:17:22–1:18:22; 1:19:13–1:20:48
Hero's departure	*Braveheart* (Gibson, 1995)	5'08"	0:04:50–0:06:18; 0:09:05–0:10:02; 0:13:17–0:16:00
Hero's initiation	*Braveheart* (Gibson, 1995)	6'37"	0:36:11–0:37:00; 0:38:10–0:39:05; 0:39:22–0:41:43; 0:47:21–0:49:01; 0:49:58–0:50:50
Hero's return	*Braveheart* (Gibson, 1995)	5'12"	2:43:17–2:46:31; 2:47:08–2:47:48; 2:48:55–2:50:14
Mentor	*The King's Speech* (Hooper, 2010)	4'46"	0:25:40–0:27:55; 0:35:00–0:36:01; 0:37:14–0:38:44
Mother	*All About My Mother* (Almodóvar, 1999)	5'08"	0:02:50–0:04:22; 0:04:56–0:07:06; 0:08:28–0:08:57; 0:09:00–0:09:11; 0:10:32–0:10:48; 0:11:52–0:12:19
Shadow	*Fight Club* (Fincher, 1999)	5'04"	0:51:07–0:51:27; 0:59:18–1:01:50; 1:47:41–1:49:53

Table 1: The detailed editing instructions for the movie clips with archetypes.

anima is strongly constellated, she softens the man's character and makes him touchy, irritable, moody, jealous, vain, and unadjusted. He is then in a state of 'discontent' and spreads discontent all around him' (Jung 1981: 70–71).

Alternative movies for this category include *American Beauty* (Mendes, 1999), *Malèna* (Tornatore, 2000) and *The Wrestler* (Aronofsky, 2008), and *American Beauty* is selected as the final movie clip for the anima archetype. In the movie *American Beauty* (Mendes, 1999), the image of the young cheerleader girl becomes the projection of the middle-age man's anima, generating all the illusions of highly sexual temptations, which are beyond the control of his consciousness. The man is entirely obsessed, and considers himself awakening from a coma, which is actually the illusion that put him into an extremely discontent condition. Just like the spindle in the fairytale 'Sleeping Beauty' (Ronnberg and Martin 2010), the man is pricked by the thorn of the rose (the girl), and falls into a deep dream constructed and controlled by his dark anima. The main reason to choose *American Beauty* as the final decision for anima is the embodiment of the symbols. A rose, as a mythical symbol that represents the self, plays an important role as a trigger that leads to anima, which makes it more explicitly than other two alternative movies.

Animus

As mentioned above, the female is compensated by a masculine element, and therefore her unconscious has a masculine imprint, which is the animus (Jung 1968: 11–12). As the counterpart of anima in one's psyche, the animus influences a woman's interactions with men and her attitude towards them. Alternative movies for this category are *Black Swan* (Aronofsky, 2010), *Million Dollar Baby* (Eastwood, 2004) and *American Beauty* (Mendes, 1999); *Black Swan* is selected as the final movie clip for the animus archetype. In the movie

Black Swan (Aronofsky, 2010), Thomas, the male tutor as the projection of the anima, tries to lead the female dancer Nina into her own unconsciousness reservoir of passion and feeling. He represents the deepest fear of her for being cast aside. On the other hand, he is also seductive in a way that pre-empts her initiative. This is a kind of projective identification that is a characteristic strategy of the animus archetype, which in the end successfully induced the shadow of Nina in her unconsciousness to take over the control of her psyche. The final decision goes to *Black Swan* due to the reason that the character of the tutor represents a typical animus: powerful, fearful, and at the same time sexually seductive (to lead Nina to be more creative). In addition, the relationship between the tutor and Nina is also clear and intense to manifest. In *American Beauty*, the wife has an affair with a business rival, who represents her animus. However, her internal feeling is not described as deeply as Nina in *Black Swan*. In *Million Dollar Baby*, the female boxer shows determination as a representation of her internal animus, and her coach plays a role as a mentor. However, the character of the mentor might distract the focus and make the animus difficult to manifest.

Mentor

The manifestations of the archetypal figure of the mentor (or the wise old man) are demonstrated in various myths and fairytales. His role is precisely that of the one whose words assist the hero through the trials and terrors of the weird adventure (Campbell 1973: 34). The mentor archetype typically appears and represents the knowledge that is needed to cross the thresholds when the hero is in a hopeless or desperate situation from which he cannot extricate himself alone. 'This figure is described as representing knowledge, reflection, insight, wisdom, cleverness, and intuition, as well as moral qualities such as goodwill and readiness to help, which make his spiritual character clear' (Jung 1981: 217–30).

Alternative movies for this category are *The King's Speech* (Hooper, 2010), the trilogy of *The Lord of the Rings* (Jackson, 2001, 2002, 2003). *The King's Speech* is selected as the final movie clip for the mentor archetype. In the movie *The King's Speech* (Hooper, 2010), the king, as the hero in a myth, acknowledges his weakness in speaking, as a metaphor that he lives in a mundane world, but still refuses to accept it. Dr Lionel, as the mentor archetype, gives the earphones to him as a very distinctive sign of the call to the adventure. The recording without hearing his own voice, which the king considers as a trick, represents the supernatural aid that guides the hero to start his journey. It also suggests the need of the person being mentored to accept what the mentor wants them to hear and to stop listening to his own destructive mental processes, which might induce severe doubt that he can overcome his obstacle. The character Gandalf in the *Lord of the Ring* trilogy is also another good example. However, other heroes that Gandalf mentors in the movie are too many and it could distract the subjects from the experience of mentor archetype, whereas the mentor archetype that Dr Lionel represents to the British King in *The King's Speech* is simple and clear.

Mother

The demands of the child upon the mother are at first connected with the role of the mother as protector, caretaker and supplier of nutritive needs (Jung 1916). With the germinating eroticism later, the child's love becomes admixed

with the developing sexual quality and is exhibited as jealousy. In this way, the typical conflict is developed which in the son is directed towards the father and in the daughter towards the mother, which are known as the *Oedipus complex* for the son and *Electra complex* for the daughter (Bettelheim 1983). The mother archetype has two ambivalent aspects: she is both loving and terrible (Jung 1981: 82). Positively, the mother archetype has been associated with solicitude, wisdom, sympathy, spiritual exaltation, helpful instincts, growth and fertility; the negative or evil side of the mother archetype is associated with secrets, darkness, the world of the dead, seduction and poison.

Alternative movies for this category are *All about My Mother* (Almodóvar, 1999), *Black Swan* (Aronofsky, 2010), and *All about My Mother* is selected as the final movie clip for the mother archetype. In the movie *All about My Mother* (Almodóvar, 1999), the positive mother archetype is well presented by seeing through from the son's eye when he interacts with his mother. He is eager to assure the mother's love towards him, and meanwhile he also intends to know more about his mother's past, especially his father, who seems to have abandoned him. Her willingness to share the memories about his father, even if it may be unpleasant, a difference from a smothering mother who cannot let the boy find his father, a discovery that might separate her son psychologically from her. Contrary to the mother in *All about My Mother*, the mother in *Black Swan* is a typical negative mother archetype. Since we decided to select one movie clip for each archetype, the positive mother archetype was adopted in the present study, and the negative mother archetype will be included in the future.

Shadow

'Shadow, the inferior part of the personality, sum of all personal and collective psychic elements, because of their incompatibility with the chosen conscious attitude, are denied expression in life and therefore coalesce into a relatively autonomous "splinter personality" with contrary tendencies in the unconscious' (Jung 1981: 284). The shadow personifies everything that a person refuses to know about himself (Jung 1981: 284). Although it usually hides in one's unconsciousness, the shadow is always imposing itself on the person's mind directly or indirectly. The encounter with the shadow plays a central part in the process of individuation. Although the shadow usually appears negative, sometimes traits and associations arising from the shadow can also suggest a positive resolution to conflict.

Alternative movies for this category are *Fight Club* (Fincher, 1999) and *Black Swan* (Aronofsky, 2010), and *Fight Club* is selected as the final movie clip for the shadow archetype. In the movie *Fight Club* (Fincher, 1999), the unnamed protagonist (played by the actor Edward Norton) is discontented with his current life until he meets the man Tyler, who lives in freedom. After a series of conflicts and struggles, the protagonist realizes that Tyler is actually the counterpart in his unconsciousness, his shadow. One of the typical scenes is when Tyler forces the protagonist to feel the pain of being burned by chemical acid. The consciousness was trying to escape by meditation and refuse to obey Tyler's order. However, in the end, the consciousness gives up resisting, and becomes more obsessed with the dark shadow. The shadow archetype usually can be found in movies about Dissociative Identity Disorders (DID) although this mental disorder does not equal to the presence of shadow archetype. *Black Swan* is also a very nice alternative for shadow archetype. Although

Fight Club and *Black Swan* both depicts the situation of being possessed by shadow archetype, the shadow archetype in *Fight Club* are presenting some positive qualities that are complementary to the protagonist, such as confidence, determination, and attractiveness, whereas the shadow archetype in *Black Swan* is simply negative except the creativity in dancing. For the present study, we decided to use *Fight Club* as the positive shadow archetype, and leave the negative shadow archetype in *Black Swan* for future work.

Hero's Departure

Based on Campbell (1973), *hero's departure* is the first stage of hero's journey. The hero was born and grows up in the mundane world until he receives *the call to the adventure*. The call to the adventure usually comes with a *supernatural aid*, which invites, encourages, or pushes the hero to accept the call. The hero refuses to answer the call until some miserable tragedies take place, which forces him to be separated from his family, leave the mundane world, and start his journey in a magical world. As at the early stage of the journey, the hero is too immature to fight against the evil, the *mentor*, or the *wise old man*, will appear unexpectedly, guide him to *cross the first threshold*, and help him develop wisdom and skills to face the rest of his own journey.

Hero's Initiation

Hero's initiation is the second stage of hero's journey, and also the main content of the story (Campbell 1973), also described as the confrontation part in modern screenwriting (Field 1984). The hero fights against monsters and villains on his journey to the treasure, *the ultimate boon* or *the magical elixir*. This part of journey is so-called the *road of trials*. The further he goes the more dangerous situations he faces. The most difficult challenges would usually be encountering his deepest fear or darkest evil, and also fighting against his dearest brother or friend. Although eventually he will win, the hero will get seriously injured and almost died. However, with the help of his surprising ally or amazing miracle, the hero is able to escape and bring the ultimate boon or magical elixir back to the people who are still suffering in the mundane world.

Hero's Return

Hero's return is the last stage of hero's journey, and also the main content of the story. The ultimate goal of a hero is to bring the boon or the elixir to save the people. However, on the way he goes back to mundane world, there is the final test waiting for him. Only if he goes across the final threshold, he could eventually return home and accomplish his task. A huge price to achieve this goal must be taken, so the hero would give everything, even sacrifice himself for the life of others. After fierce physical and mental fights, the hero eventually fulfills his goal and becomes the *master of the two worlds*: the magical world and the mundane world. And all the people in the mundane world broadly benefit from the ultimate boon or magical elixir brought back by the hero.

Alternative movies for this category are *Braveheart* (Gibson, 1995), *Superman* (Donner, 1978), *V for Vendetta* (McTeigue, 2005), and the trilogy of *The Matrix*: *The Matrix* (Wachowski and Wachowski, 1999), *The Matrix Reloaded* (Wachowski and Wachowski, 2003a) and *The Matrix Revolutions* (Wachowski and Wachowski, 2003b). *Braveheart* is selected as the final movie

clip for the hero's journey. The movie *Braveheart* (Gibson, 1995) was selected for these three categories of the hero's journey because of its clear stages of the hero's journey. The three general stages of the hero's journey in this story of the Scottish hero, William Wallace, are clear and easy to be identified. Furthermore, the symbols are vividly visualized, e.g. the huge sword he uses, the serious wound, the fire of rebirth, the magic escape by jumping off from the top of the castle into the water, and the final word as the ultimate boon. Finally, both mental and physical struggles are well demonstrated, e.g. the expression while being betrayed, getting wounded in a battlefield, and sacrificing himself for freedom.

REFLECTION ON DEVELOPING ARCHETYPAL MOVIE CLIPS

There are three main issues that need to be taken into account in this empirical study. First, complicated storylines make the editing work extremely difficult. A movie usually has intertwined storylines and characters. Although the above studies have already identified the archetypes in some movies, it seems not possible to use the whole movie as one homogeneous stimulus in an experiment. On the other hand, to edit a short clip from the whole movie that is able to represent solely one archetype appears to be a challenging work. Although those feature scenes can be cut into five-minute clips, the edited story often becomes disconnected and fails to convey the whole concept due to lack of context. To tackle this issue, it is suggested to first extract the core storyline that is directly related to the archetype, and then remove the unnecessary scenes in between. Another requirement is that the leading characters should be recognizable. Since these movie clips will be used in psychological experiments, the effectiveness relies considerably on how fast the subject can engage in the presented story. The subjects will only watch a five-minute clip instead of the whole movie, so that it is important for them to identify the main character immediately.

Second, the movies with too many special effects and outdated acting should be avoided. To assure that subjects would be as much immersed as possible in the story during the experiment, all kinds of factors that might distract them from the story need to be excluded. For example, the new way of filming method in the classic scientific fiction movie *The Matrix* (Wachowski and Wachowski, 1999), the description on the psychological transformation of the hero is overwhelmed by the development of his physical powerfulness. In the movie *Superman* (Donner, 1978), the outdated special effects might draw most of subjects' attention rather than the journey of the hero.

Finally, although the selection process can be referred to as archetypal symbolism, the validity of the interpretation of the symbolic meaning still needs to be verified by experienced experts in the relevant fields. It is suggested that empirical evaluation should be supported by experienced experts in symbolism to avoid mistakes or wrong interpretations. In our study, we asked the experts of ARAS to review the film clips we had collected. This step might require additional effort. However it is mandatory for confirming the validity of the archetypal movie clips for future studies.

IMPLICATIONS FOR FUTURE RESEARCH ON EMOTION

Our collection of archetypal movie clips can be used for future studies about human emotions. One of the underlying research questions would be: what emotions do people have towards these archetypal symbols? According to

Jung's theory of archetypes, a reasonable hypothesis can be made, that the emotions towards archetypal symbols cannot be consciously felt. To justify this hypothesis, two kinds of emotion need to be measured: conscious emotions and unconscious emotions. The measurement of conscious emotions has been well-established, e.g. self-report questionnaires (Bradley and Lang 1994), whereas the recognition of unconscious emotions is still under development. A promising approach to recognize unconscious emotions is utilizing physiological signals. From the view of neurobiology, A. R. Damasio (2010) proposes that unconscious emotions can be observed through physiological signals, such as facial expression and the heart beats even though these emotions cannot be consciously perceived as feelings. Future studies need to measure both of these emotional responses towards archetypal symbols in order to answer this underlying research question, which might also lead to new directions in research on emotion. If the answer to this research question is positive, archetypal symbolism will become a fruitful resource for investigating the inborn structure of subjective world-view, i.e. how humans intrinsically experience the world. Our study also provides an example for developing affective stimuli according to their content. Furthermore, our study can also be useful for researchers who are interested in analysing symbolic meanings in movies for other purposes.

CONCLUSION

In the present article, we provide a theoretical framework that connects archetypes and modern psychology, and we argue that archetypal symbolism is a kind of knowledge that explains how humans experience the physical world in a symbolic form. According to this theoretical premise, we consider archetypal symbols can be a fruitful resource for psychological studies, and conducted an empirical study to demonstrate how to identify archetypal symbols in movies for future use in psychological studies.

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REFERENCES

Almodóvar, P. (1999), *All about My Mother*, Spain: Warner Soge films S.A.

Aronofsky, D. (2008), *The Wrestler*, USA: Fox Searchlight Pictures.

—— (2010), *Black Swan*, USA: Twentieth Century Fox Film Corporation.

Bettelheim, B. (1983), *Freud and Man's Soul: An Important Re-Interpretation of Freudian Theory*, New York, NY: Vintage.

Bradley, M. M. and Lang, P. J. (1994), 'Measuring emotion: The self-assessment manikin and the semantic differential', *Journal of Behavior Therapy and Experimental Psychiatry*, 25: 1, pp. 49–59.

Bradshaw, S. and Storm, L. (2013), 'Archetypes, symbols and the apprehension of meaning', *International Journal of Jungian Studies*, 5: 2, pp. 154–176, doi: 10.1080/19409052.2012.685662.

Campbell, J. (1973), *The Hero with A Thousand Faces*, Princeton, NJ: Princeton University Press.

Carpenter, H. (2006), *The Inklings: C.S. Lewis, J.R.R. Tolkien, Charles Williams and Their Friends*, London, UK: HarperCollins.

Chang, H.-M., Ivonin, L., Diaz, M., Catala, A., Chen, W., & Rauterberg, M. (2013), 'Experience the world with archetypal symbols: A new form of aesthetics', in N. Streitz & C. Stephanidis (eds), *Distributed, Ambient, and Pervasive Interactions, Lecture Notes in Computer Science Volume 8028*, Berlin, Germany: Springer Berlin Heidelberg, pp. 205–214, doi: 10.1007/978-3-642-39351-8_23.

Damasio, A. R. (2010), *Self Comes to Mind: Constructing the Conscious Brain*, University Park, PA: Pantheon.

Donner, R. (1978), *Superman*, USA: Warner Bros. Pictures.

Dundes, A. (1988), 'The flood as male myth of creation', in Dundes, A. (ed.), *The Flood Myth*, London, UK: University of California Press, pp. 167–82.

Eastwood, C. (2004), *Million Dollar Baby*, USA: Warner Bros.

Eliade, M. (1998), *Myth and Reality*, Illinois: Waveland Pr Inc.

Faber, M. A. and Mayer, J. D. (2009), 'Resonance to archetypes in media: There's some accounting for taste', *Journal of Research in Personality*, 43: 3, pp. 307–22.

Field, S. (1984), *Screenplay: The Foundations of Screenwriting*, New York, NY: Dell Publishing.

Fincher, D. (1999), *Fight Club*, USA: Twentieth Century Fox Film Corporation.

Gadamer, H.-G. (1975), *Truth and Methods*, London, UK: Sheed & Ward Ltd.

Gibson, M. (1995), *Braveheart*, USA: Paramount Pictures.

Hauke, C. and Alister, I. (2001), *Jung and Film: Post-Jungian Takes on the Moving Image*, East Sussex, UK: Brunner-Routledge.

Hooper, T. (2010), *The King's Speech*, UK: Momentum Pictures.

Huh, J. A. (2010), 'Mandala as telematic design', *Technoetic Arts: a Journal of Speculative Research*, 8: 1, pp. 19–30.

Ivonin, L., Chang, H.-M., Chen, W., & Rauterberg, M. (2013), 'Unconscious emotions: Quantifying and logging something we are not aware of', *Personal and Ubiquitous Computing*, 17: 4, pp. 663–673, doi: 10.1007/s00779-012-0514-5.

Jackson, P. (2001), *The Lord of the Rings: The Fellowship of the Ring*, New Zealand: New Line Cinema.

—— (2002), *The Lord of the Rings: The Two Towers*, New Zealand: New Line Cinema.

—— (2003), *The Lord of the Rings: The Return of the King*, New Zealand: New Line Cinema.

Jacobi, J. (1973), *The Psychology of C. G. Jung*, London, UK: Yale University Press.

Jones, R. A. (2003), 'Mixed metaphors and narrative shifts: Archetypes', *Theory & Psychology*, 13: 5, pp. 651–72.

Jung, C. G. (1964), *Man and His Symbols*, Garden City, New York, NY: Doubleday.

—— (1916), *Psychology of the Unconscious: A Study of the Transformations and Symbolisms of the Libido*, New York, NY: Moffat, Yard and company.

—— (1968), *Aion: Researches into the Phenomenology of the Self*, Princeton, NJ: Princeton University Press.

—— (1981), *The Archetypes and the Collective Unconscious* (trans. R. F. C. Hull), 2nd ed., Princeton, NJ: Princeton University Press.

———— (1989), *Memories, Dreams, Reflections*, New York, NY: Vintage.

Kirk, G. S. (1975), *The Nature of Greek Myths*, New York, NY: Penguin Books.

Knox, J. M. (2001), 'Memories, fantasies, archetypes: An exploration of some connections between cognitive science and analytical psychology', *The Journal of Analytical Psychology*, 46: 4, pp. 613–35.

Kooijmans, T., & Rauterberg, M. (2007), 'Cultural computing and the self concept: Towards unconscious metamorphosis'. In L. Ma, M. Rauterberg & R. Nakatsu (eds), *Entertainment computing - ICEC 2007 (Lecture Notes in Computer Science, Vol. 4740)*, Berlin, Germany: Springer Berlin Heidelberg, pp. 171–181, doi: 10.1007/978-3-540-74873-1_21.

Malinowski, B. (1954), 'Myth in primitive psychology', *Magic, Science and Religion and Other Essays*, New York, NY: Doubleday & Co., Inc., pp. 93–148.

May, R. (1991), *The Cry for Myth*, New York, NY: W. W. Norton & Company.

McTeigue, J. (2005), *V for Vendetta*, USA: Warner Bros. Pictures.

Mendes, S. (1999), *American Beauty*, USA: DreamWorks Distribution.

Neumann, E. (1970), *The Origins and History of Consciousness*, Princeton, NJ: Princeton University Press.

Perlovsky, L. (2007), Neural dynamic logic of consciousness: The knowledge instinct. In L. I. Perlovsky & R. Kozma (eds), *Neurodynamics of Cognition and Consciousness*, Berlin, Germany: Springer Berlin Heidelberg, pp. 73–108, doi: 10.1007/978-3-540-73267-9_5.

Roesler, C. (2012), 'Are archetypes transmitted more by culture than biology? Questions arising from conceptualizations of the archetype', *The Journal of Analytical Psychology*, 57: 2, pp. 223–46.

Ronnberg, A. and Martin, K. (2010), *The Book of Symbols: Reflections on Archetypal Images*, Cologne, Germany: Taschen.

Tornatore, G. (2000), *Malèna*, Italy: Miramax Home Entertainment.

Tylor, E. B. (1920), *Primitive Culture*, 6th ed., New York, NY: J.P. Putnam's Sons.

Wachowski, A. and Wachowski, L. (1999), *The Matrix*, USA: Warner Bros. Pictures.

———— (2003a), *The Matrix Reloaded*, USA: Warner Bros.

———— (2003b), *The Matrix Revolutions*, USA: Warner Bros.

Walters, S. (1994), 'Algorithms and archetypes: Evolutionary psychology and Carl Jung's theory of the collective unconscious', *Journal of Social and Evolutionary Systems*, 17: 3, pp. 287–306.

White, L. A. (1940), 'The symbol: The origin and basis of human behavior', *Philosophy of Science*, 7: 4, pp. 451–63.

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Looking for Marshall McLuhan in Afghanistan

iProbes and Hipstamatic iPhone Photographs

Rita Leistner

In this timely and highly original merging of theory and practice, conflict-photographer and critical theorist Rita Leistner applies Marshall McLuhan's semiotic theories of language, media and technology to iPhone photographs taken during a military embed in Afghanistan. In a series of what Leistner calls iProbes – a portmanteau of iPhone and probe – Leistner reveals the face of war through the extensions of man. As digital photography becomes more ubiquitous, and as the phones we carry with us become more advanced, the process of capturing images becomes more democratic and more spontaneous. Leistner's photos result from both access and impulse. *Looking for Marshall McLuhan in Afghanistan* will appeal to anyone with an interest in the conflicts in the Middle East, the seminal communications theorist or iPhone apps and photography.

Rita Leistner is an interdisciplinary practitioner-theorist. She received a master's degree in comparative literature from the University of Toronto, Canada, where she teaches a course on documentary photography at Victoria College.
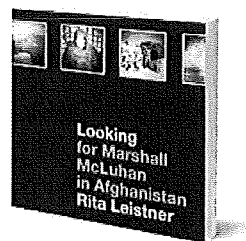
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