Journal of Arts & Humanities

Volume 11, Issue 01, 2022: 01-11
Article Received: 29-11-2021
Accepted: 18-01-2022
Available Online: 31-03-2022
ISSN: 2167-9045 (Print), 2167-9053 (Online)
DOI: https://doi.org/10.18533/jah.v11i1.2213

A study on Aristotle's Theory of Catharsis and Empathy based on the function of Mirror Neurons With the functionalist approach

Fateme Delfani Baluch[1]

ABSTRACT

The issue of mind and body is one of the most important topics in the philosophy of mind. The purpose of this approach is to study the category of mind, discover the origin of mental states, explain it and study its function. Conditions such as compassion, fear, or empathy are considered in this article. To explain these situations, the theory of functionalism in the philosophy of mind has been used. Using this theory of mental states, a tragic representation of Aristotle is referred to as fear and compassion, and its output is called catharsis or refinement. The purpose of this study is to determine which part of the brain is responsible for this processing and the researcher of this output, assuming that the input information of watching the tragic show stimulates fear, compassion and empathy and the output is the sense of refinement and catharsis. In this regard, mirror neurons have been considered as agent. The research method is to study the theoretical framework of functionalism, Aristotle's theory of catharsis, then what and how Mirror neurons work in the brain. In the next step, the relationship between mirror neurons and the emergence of empathy (catharsis) is explained. Finally, we explain, using the functionalist approach, the relationship between Aristotle's catharsis, the mirror nerves, and how this sense is produced by a particular part of the brain.

Key Words: Catharsis, Mirror Neurons, Empathy, Functionalism.

1. Introduction

New scientific findings indicate the discovery of a group of neurons in the pre-motor part of the cortex of the brain. Some of these neurons, including motor neurons, sensory neurons, and some of the most important recent discoveries are known as mirror neurons. Ramachandran as a neurologist whose researches and books are on brain, neurons and its relationship with states of mind and feelings like empathy has written books such as "The Emerging Mind, 2003" "A Brief Tour of Human Consciousness: From Impostor Poodles to Purple Numbers, 2005". "The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human, 2010", and "The Encyclopedia of Human Behavior

[1] Iran.Email: fatemedelfani43@gmail.com

(editor-in-chief), four-volume second edition, 2012". Ramachandran, Vilayanur (1978). Studies on binocular vision. Cambridge University. Retrieved 25 January 2022.

The present article examines mirror neurons in order to explain its functions in the process of imitation, empathy and its relationship with the concept of Aristotle's catharsis. It seems that the roots of Aristotelian catharsis can be traced to the way in which mirror nerves function. Functionalist theory of the mind defines mental states based on the functions associated with those states in the neural structure of living things.

The main question of the present study is how physiologically, the audience is cultivated through observation of the play and through empathy with the other and is refined based on Aristotle's theory of catharsis? Studies in the field of philosophy of mind and the relationship between mind and body, along with studies that have examined the relationship between the mirror nerve and the brain with art and aesthetics, have a history of the last two decades. Since the forthcoming research is in the field of interdisciplinary studies, reference to similar books and articles in the past can be very extensive, but the author is among the various works in the first place those works that relate art, aesthetics and sympathy to the mirror nerves are pointed out. The following are articles by a number of scholars who have specifically examined the functionalist approach to the philosophy of mind and nerves.

"Empathy, mirror neurons and SYNC" by Ryszard Praszkier explains how people synchronize their thoughts through empathetic relationships and points out the elementary neuronal mechanisms orchestrating this process. "Empathy-Related Responses to Depicted People in Art Works" by Ladislav Kesner is another article in which the writers based on Existing theories of empathic response to visual art works postulate the primacy of automatic embodied reaction to images based on mirror neuron mechanisms. Present an integrative model of empathy-related responses to depicted people in art works. The model assumes that as response to empathy-eliciting figural artworks engages the dynamic interaction of two mutually interlinked sets of processes: socio-affective/cognitive processing, related to the person perception, and esthetic processing, primarily concerned with esthetic appreciation and judgment and attention to non-social aspects of the image. In "From "Einfühlung" to empathy: exploring the relationship between aesthetic and interpersonal experience" by Joanna Ganczarek et eal, introducing the special section titled "From 'Einfühlung' to empathy: exploring the relationship between aesthetic and interpersonal experience", we briefy sketch these two motivations and the relationship between the diferent mechanisms that have been associated with both aesthetic and interpersonal experience. Beardsley, M.C. (1966) Aesthetics from Classical Greece to the Present, New York: Macmillan. Beardsley, M.C. (1983) 'An Aesthetic Definition of Art', in H. Curtler (ed.) What Is Art?, New York: Haven,

In all the researches, the philosophical or scientific aspect has always been studied. In interdisciplinary studies, no research has been done on Aristotle's catharsis and its relationship to the mirror nerves in the brain. This discussion is necessary because the results of the forthcoming research, in addition to helping human beings to know their emotions using the tools of science, open new doors for researchers in the field of art and philosophy of art and aesthetics. Such studies enable the opinions of the great philosophers to be revised with newly discovered scientific tools and to give researchers more operational possibilities. Such fundamental researches, as a foundation for advances in artificial intelligence and cognitive science knowledge that are effective in everyday life are less done.

2. The importance of this issue

To understand how emotions and mental states work, choosing a method that is based on empirical observations and the possibility of experimentation will naturally have citationable and practical results in the field of cognition, treatment, or understanding how the human mind functions. The study of emotions and mental states as elements that are an integral part of human life are essential both for improving performance and for therapeutic uses and cognition. In this feeling, like empathy, it plays a very key role in evacuating emotions and connecting people to each other.

The study of the philosophy of mind, whose one of the main concerns is to discover the relation of mental states to the body, is a very important step in progression of human knowledge. Because by understanding this, more practical actions can be taken that are beyond mere theory and are in addition to discovering part of the functional structure of the human mind and body, it is effective in

daily life, providing practical solutions, therapies and many other things, including human cognition. According to this functionalism has been choose as the main theoretical approach in this article. The writer choose functionalism cause, first of all it allows for the definition of many mental terms at once, avoiding the problems created by the piecemeal definitions of analytical behaviourism; the second reason is that it frees reductionism from a chauvinistic commitment to the particular ways in which human minds happen to be embodied, allowing them to be "multiply realized" in any number of substances and bodies, including machines, extraterrestrials, and perhaps even angels and ghosts (in this way, functionalism is also compatible with the denial of type identities and the endorsement of token identities); and, most important, and the lastreason is that it allows philosophers of mind to recognize a complex psychological level of explanation, one that may not be straightforwardly reducible to a physical level, without denying that every psychological embodiment is in fact physical. Functionalism thus vindicated the reasonable insistence that psychology not be replaced by physics while avoiding the postulation of any mysterious nonphysical entities as psychology's subject matter (Jay Frank Rosenberg شد نامه یکا داند یه ریه تاند یه ریه)

Until now, what has been done by philosophers in relation to art, and in particular the perception of the art object, has often been in the category of theoretical studies. In recent decades, however, researchers in art studies have conducted interdisciplinary research in the arts and cognitive sciences, arts and medicine, arts and psychology, and other fields of knowledge. Among the emerging discoveries in the field of science and knowledge, the discovery of mirror nerves and how they work in humans attracted the attention of researchers in other fields. Among them, psychologists have conducted extensive studies on the issue of imitation and learning in humans. Linguists have also made new advances in the field of child language learning.

3. Methodology

The present study intends to review Aristotle's theory of catharsis by using discoveries about how mirror nerves work in the human brain and their relationship to human empathy and perception of each other based on functionalism approach. Functionalism in the philosophy of mind is the doctrine that what makes something a mental state of a particular type does not depend on its internal constitution, but rather on the way it functions, or the role it plays, in the system of which it is a part. This doctrine is rooted in Aristotle's conception of the soul, and has antecedents in Hobbes's conception of the mind as a "calculating machine", but it has become fully articulated (and popularly endorsed) only in the last third of the 20th century. Though the term 'functionalism' is used to designate a variety of positions in a variety of other disciplines, including psychology, sociology, economics, and architecture, this entry focuses exclusively on functionalism as a philosophical thesis about the nature of mental states.

here the writer first, the concept of catharsis has been studied by Aristotle, then the function of mirror neurons and how they function in relation to the problem of empathy based on functionalism approach has been studied. Finally, based on the entrance the concept of catharsis has been revised through the lens of empirical science. Input stimuli, such as watching a tragedy, and output, which here is a feeling of compassion, fear, and empathy, are explained using a place in the brain called the mirror neurons. In fact, according to the theoretical framework of functionalism, the mental and emotional state of empathy and catharsis is the result of certain input data or information (which, of course, is associated with the principle of multiple realizability) Here, the encounter with the tragic matter is a special input, and the agent of this realization is the mirror nerves inside the brain. According to this theory, the audience of the tragedy, on the one hand, is afraid of getting caught in the same situation as the hero of the tragedy, and on the other hand, feels sympathy for him. What is of great social importance to us is the goal that Aristotle sets for tragedy; It means cultivation, which is the purification of the spectators by imitating actions that evoke fear and pity. This cultivation is based on a specific psychological action: based on the drowning of the spectator in people whose behavior is imitated by the actors. But what happens in the body that leads to such an experience? It seems that the activity of mirror neurons can respond to this process of perception by the audience. In this regard, first a description of Aristotle's theory of catharsis and then an overview of how the discovery and function of mirror nerves in the human brain has been done. A connection is made between the

function of the mirror nerves and what Aristotle acknowledged in relation to catharsis when viewing the play, and in particular tragedy. This research is a kind of revision and redefinition of previous concepts about the concept of perception by the audience, which uses science to revise or supplement the theories of humanities with more accuracy

No article or book with this title has been published before. Related articles and books are listed in the Resources section. The research method is library and it uses internet resources and books. The research is fundamental.

4. Functionalism in philosophy of mind

In philosophy of mind, functionalism is the thesis that mental states (beliefs, desires, fears, being in pain, love, sympathy etc.) are constituted solely by their functional role, which means, their causal relations with other mental states, sensory inputs and behavioral outputs (Ned, 1996: 45)

Functionalism developed largely as an alternative to the identity theory of mind and behaviorism.

It is a theoretical level between the physical implementation and behavioral output (D., 1982: 32).

According to functionalist theory, mental states are not based on the physical structure of brain states. Rather, it should be defined in terms of the function that those states in the nervous system of a living organism Plays. Functionalists refer to the work of having a mental state such as pain in the nervous system performs causal relationships that that state has with other mental states

It also generates physical stimuli and behavioral data.

Therefore, it is different from its predecessors of Cartesian dualism (advocating independent mental and physical substances) and Skinnerian behaviorism and physicalism (declaring only physical substances) because it is only concerned with the effective functions of the brain, through its organization or its "software programs". Since mental states are identified by a functional role, they are said to be realized on multiple levels; in other words, they are able to be manifested in various systems, even perhaps computers, so long as the system performs the appropriate functions. While a computer's program performs the functions via computations on inputs to give outputs, implemented via its electronic substrate, a brain performs the functions via its biological operation and stimulus responses.

Functionalism is fundamentally what Ned Block has called a broadly metaphysical thesis as opposed to a narrowly ontological one. That is, functionalism is not so much concerned with what there is than with what it is that characterizes a certain type of mental state, e.g. pain, fear or kindness as types of states that it is. Previous attempts to answer the mind-body problem have all tried to resolve it by answering both questions: dualism says there are two substances and that mental states are characterized by their immateriality; behaviorism claimed that there was one substance and that mental states were behavioral disposition; physicalism asserted the existence of just one substance and characterized the mental states as physical states (as in "pain = C-fiber firings"). On this understanding, type physicalism can be seen as incompatible with functionalism, since it claims that what characterizes mental states (e.g. pain) is that they are physical in nature, while functionalism says that what characterizes pain is its functional/causal role and its relationship with yelling "ouch", etc. However, any weaker sort of physicalism which makes the simple ontological claim that everything that exists is made up of physical matter is perfectly compatible with functionalism. Moreover, most functionalists who are physicalists require that the properties that are quantified over in functional definitions be physical properties. Hence, they are physicalists, even though the general thesis of functionalism itself does not commit them to being so.

5. Types of functionalism

5.1 Machine-state functionalism

The broad position of "functionalism" can be articulated in many different varieties. The first formulation of a functionalist theory of mind was put forth by Hilary Putnamin the 1960s. This formulation, which is now called machine-state functionalism, or just machine functionalism, was inspired by the analogies which Putnam and others noted between the mind and the theoretical

"machines" or computers capable of computing any given algorithm which were developed by Alan Turing (called Turing machines) (Putnam , 1967: 183). Putnam himself, by the mid-1970s, had begun questioning this position. The beginning of his opposition to machine-state functionalism can be read about in his Twin Earth thought experiment (Putnam, 1960: 197) (Putnam, 1967: 37-48).

5.2 Psycho-functionalism

It is based on the rejection of behaviorist theories in psychology and their replacement with empirical cognitive models of the mind. This view is most closely associated with Jerry Fodor and Zenon Pylyshyn and has been labeled psycho-functionalism. The fundamental idea of psycho-functionalism is that psychology is an irreducibly complex science and that the terms that we use to describe the entities and properties of the mind in our best psychological theories cannot be redefined in terms of simple behavioral dispositions, and further, that such a redefinition would not be desirable or salient were it achievable. Psychofunctionalists view psychology as employing the same sorts of irreducibly teleological or purposive explanations as the biological sciences (see, Fodor, 1998).

5.3 Analytic functionalism

It is concerned with the meanings of theoretical terms in general. This view is most closely associated with David Lewis and is often referred to as analytic functionalism or conceptual functionalism. The basic idea of analytic functionalism is that theoretical terms are implicitly defined by the theories in whose formulation they occur and not by intrinsic properties of the phonemes they comprise (see: lewis, 1986).

5.4 Homuncular functionalism

It was developed largely by Daniel Dennett and has been advocated by William Lycan. It arose in response to the challenges that Ned Block's China Brain (a.k.a. Chinese nation) and John Searle's Chinese room thought experiments presented for the more traditional forms of functionalism (see below under "Criticism") (Beardsley, 1996: 35). In attempting to overcome the conceptual difficulties that arose from the idea of a nation full of Chinese people wired together, each person working as a single neuron to produce in the wired-together whole the functional mental states of an individual mind, many functionalists simply bit the bullet, so to speak, and argued that such a Chinese nation would indeed possess all of the qualitative and intentional properties of a mind; i.e. it would become a sort of systemic or collective mind with propositional attitudes and other mental characteristics (see: Dennett, 1965).

5.5 Mechanistic functionalism

Mechanistic functionalism, originally formulated and defended by Gualtiero Piccinini and Carl Gillett independently, augments previous functionalist accounts of mental states by maintaining that any psychological explanation must be rendered in mechanistic terms. That is, instead of mental states receiving a purely functional explanation in terms of their relations to other mental states, like those listed above, functions are seen as playing only a part—the other part being played by structures— of the explanation of a given mental state (Piccinini, 2010: 269-311).

6. Aristotle and the theory of catharsis

Aristotle introduced catharsis in his theory of art and therefore described the obvious example of art, tragedy, in terms of catharsis, the feeling of fear and compassion in man (Botiqa, 1449b). Catharsis is derived from the Greek root katharos meaning purified, undefiled, pure and free of defects. The word is used in Greek culture in mythological rituals and ceremonies. The word catharsis is used in Aristotle's two works, Politics and Poetry. In Botiqa, catharsis has been used twice: once in the sixth chapter of his book, the definition of tragedy as an imitation that leads to fear and compassion, and again in the seventeenth chapter, it has been used to refer to the ritual of cultivation and purification (Zimran, 2013: 75-6).

The show begins. The hero of the tragedy steps on the stage. The audience communicates with him. Slip and error is observed in the performance and behavior of the main character (Hamartia). In

the end, it is because of this slip that the hero suffers a tragedy. The audience, because they feel close and sympathetic to the hero, internalize his mistake and slip.

In the sixth chapter, Aristotle poetically states in his definition of tragedy that tragedy causes catharsis by arousing the audience's compassion and fear. In fact, it can be said that tragedy causes the audience to sympathize with the protagonist, who is suffering from countless sufferings, and therefore to experience the feeling of compassion and fear in a different way. In other words, tragedy, aroused by the compassion of the audience, forces him to share in the hero's fear. "The story should be written in such a way that even if someone sees the play, as soon as he hears its narration, he trembles from those events and feels like the protagonist of the story of mercy and compassion" (Botiqa, 1398: 9).

But about the literal meaning of catharsis, different definitions can be given from different angles. Because Aristotle's statement on this is not clear, various interpretations of catharsis have been made. For example, from a physiological point of view, catharsis is the purification and emptying of the gastrointestinal tract (url1). According to the psychological approach, tragic drama causes the soul to be emptied of undesirable emotions, internal pressures and harmful interactions, and as a result, it causes calmness and cultivation (Copleston, 2007: 419). In The Eighth Book of Politics, Aristotle likened catharsis to medical treatment. From an ethical point of view, such an approach was extended to Lessing's studies and theories. He considered catharsis a necessity for cultivation, in the light of which undesirable emotional elements are separated from desirable (emotional), and this will be in order to create and cultivate moral virtues. Lyon then examines Golden Catharsis with a rationalist perspective. According to him, based on Memsis theory and imitation, man is able to achieve knowledge and insight. Here, catharsis is also a way that brings man closer to rationalism and enlightenment (Golden, 1962: 51-60).

The present article does not seek to outline different approaches to catharsis and to assess their validity, but to argue that, given the foundations of Aristotle's thought about catharsis and its connection to the problem of empathy explicitly mentioned in Poetry, the function of arousal how the audience's compassion is shown by observing the display of tragedy in the brain.

7. Discovery of mirror nerves

Specialists first met around 1990. At the University of Parma, a system of mirror neurons was discovered in monkeys (see Rizzolatti, 2008). Some scientists have studied the brain activity of a number of monkeys in the laboratory to observe how their movements work. In these experiments, for example, when a monkey was picking up an object or food, the devices showed the activity of a specific part of the brain in audio and video. Thus, motor nerve fibers were identified in the monkeys' brains. Interestingly, one day a person in the lab accidentally removes a peanut from the monkeys' diet, and observes the same symptoms. That is, without the monkey touching the peanut, only the movement of another person activates the motor nerves in his brain. Because neurons are activated by observing other personal activity, as if the monkey itself were involved, these neurons were called mirror nerves. In their research, monkeys find that in the pre-motor cortex of their brains, monkeys have neurons that activate whenever they perform an action (such as picking up an object) or observing the actions of other people (monkeys or humans). These neurons are activated. After some research, scientists found that mirror nerves with more complex functions also function in the human brain. Mirror nerves cannot be studied directly in humans in the same way; these systems are evaluated in the brain by tomography, positron emission, magnetic tonic cortex, and functional magnetic resonance imaging (2006). Mirror nerves in the brain are responsible for understanding the actions and intentions of others. The two main functions of the nerves are mirrors of learning through imitation and understanding the actions of others through observation, which is somehow related to the concept of empathy and sympathy. Parma experiments have been confirmed in many other studies, for example, UCLA researchers have found that human anterior cingulate cells, which are usually stimulated when a patient is injected ("pain neurons"), when the patient is transferred to another patient who is in needle. Ramachandran (2006. Other studies using various experimental methods and techniques have shown the existence of a mechanism in the human brain that directly maps the perception of action, defined as the mirror nervous system, MNS). (Gallese 2003, 2009).

Mirror neurons, for the first time in history, provide an acceptable neuropsychological explanation for complex forms of cognition and social interaction (see Iacoboni 2009/2006). Some

scientists use explicit letters such as "empathy neurons" or "Dalai Lama neurons" to describe mirror neurons, believing that they remove barriers between themselves and each other (Ramachandran, 2006).

During practical observation, there seems to be a strong activation in the anterior and posterior wall areas: the same areas that are activated when we move are also activated when we observe the same motor actions performed by others. Mirror neurons, or MNSs in humans, are involved not only in mimicking simple movements, but also in mimicking complex skills, perceiving communication actions, and identifying action goals (Gallese, 2009). Also, based on observations, these neurons are involved in our ability to share emotions with others (Gallese 2003, 2006, 2009).

Various findings suggest that multiple systems in the human brain may have reflective neural mechanisms for integrating and differentiating the perceptual and motor aspects of actions performed by oneself and others (Mukamel et al. 2010; Keyserss and Gazzola 2010: 750-752).

8. Empathy

Art psychology is an interdisciplinary field that studies the perception and recognition of artistic features and its production. In this field, many studies have been done on the concept of empathy. Empathy (1396) or empathy is understanding the feeling and understanding of the sensory experience of others with the ability to see and perceive the issues around them from their point of view and put themselves in their place (Dickert, 2009: 305). The Encyclopaedia of Positive Psychology defines empathy as "the ability to recognize or experience indirectly (emotional state) or the emotional state of another being", or "the emotional response to understanding the emotional state or emotional state of others." Empathy is also meant to understand the interests and concerns of others, an emotional feeling that helps a person not to act violently and to consider the principles of kindness in dealing with others (url2). According to Eisenberg and Streyer: "In our view, empathy means sharing another perceived emotion - 'feeling with another'" (Eisenberg, 1990: 5). Empathy is an essential part of specific emotions and feelings, which includes the element of feeling familiar or connected, physical reaction, verbal or non-verbal communication. Empathy generally means feeling what the other person feels and "being in someone else's place" (Roy, 2010). Empathy is about intuition and, like intuition, helps to understand and recognize the semotions of others. Empathy is therefore also described as recognizing the feelings of others through intuition (Stotland (1969), Hoffman (1987), and Barnett et al).

It all starts with an emotional contagion, which is the primitive form of true empathy. In essence, we are simply infected by the feelings or behavior of others. De Wald believes that cognitive empathy is a state that allows us to understand and actually feel the feelings of others. This capacity arose long ago through motor imitation and emotional transmission, and then evolved little, until our ancestors not only understood what others felt, but also understood what others might do. Want or need something (anticipate). This increased their ability to survive and reproduce and ensure survival.

In the present study, the word sympathy or empathy is equivalent to the German equivalent of Einfuhlung and the English word Empathy. For the first time in 1873. The German philosopher Robert Fischer used the term Einfuhlung in his doctoral dissertation entitled Visual Sense of Form: The Place of Sensory and Aesthetic Perception. His main motivation was to explore the difference between understanding something or someone (verstehen: in-feeling) and empathizing with it (feeling-into Einfühlung :). The work of Theodor Lips, a Munich-based psychologist, played an important role in the early development of the concept of the art of psychology in the early second decade of the twentieth century. His most important contribution in this regard was the attempt to theorize the question from Einfuehlung or "empathy", a term that later became a key element in many theories of the art of psychology.

9. How mirror nerves work and how they relate to empathy

9.1 Visualized simulation

According to this view, understanding an action is equivalent to simulating it internally. This implicit, automated, and subconscious process of visualized simulation enables the observer to use his or her resources to penetrate another world without explicitly theorizing about it. The process of simulating implicit and pre-reflective action automatically establishes a direct implicit link between the

other and the observer (Gallese 2003). Visualized simulation is understood as a basic functional mechanism by which our brain / body system models its contact with the world. This is a vital functional mechanism in social cognition. Visualized simulation becomes a common underlying functional mechanism that enables one to feel the actions, intentions, feelings, and emotions of others, thus establishing our identification and communication with others (Gallese 2008, 2009, 2011; Gallese

We are implicitly aware of another resemblance to ourselves because we literally embody it. The same nerve base or part of the brain that is activated when we perform actions or emotions that we experience in the mind and are evoked in us, if the same actions, emotions and feelings are performed or experienced by others in us. They have shown activity. Metaphorically speaking, through the reflection of the brain (the mirror of the action of a part of the brain), the "other" becomes the "self" (Praszkier, 2014).

The strong distinction that is classically made between the "I" and the "other" in the act or experience of emotion seems to be very vague at the level of the neural mechanisms that describe it. The gap between these two perspectives is filled by the way in which purposeful relationships are functionally drawn on the surface of the neural body (Gallese 2011).

9.2 Sync

Empathy and embodied simulation show that something extraordinary happens when people communicate, and that the source of life seems to be the mirror neurons that guide the intentional alignment process (Gallese 2008, 2009, 2011). The two brains are synchronized and synchronized beyond and regardless of the content of the connection. Synchronization here means, more broadly, the coordination of events to set up a system. Visualized simulation may lead to a situation in which two brains are synchronized with each other (Ibid).

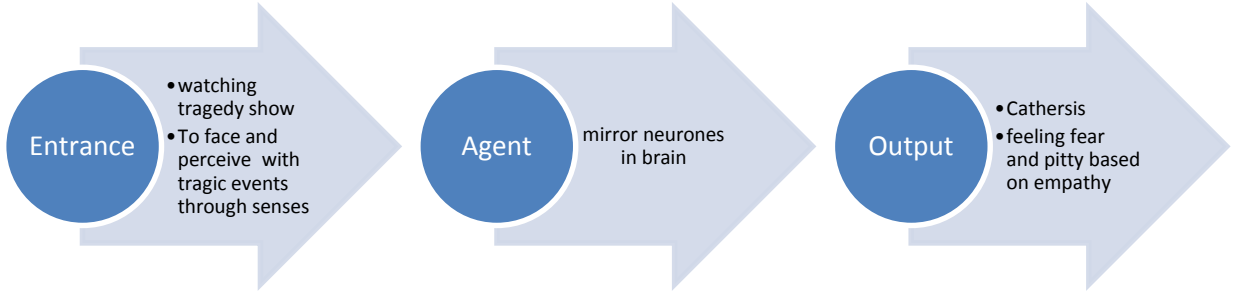
Although there is plenty of room to discuss how empathy arises and expresses it, inevitably only part of it relates to the mirror nerves and the present article is summarized. Interactive alignment, brain pairing, studies of language as a brain-pairing transmitter, neural synchronization, and the role of synchronization in psychotherapy are some of the topics related to empathy and how it is formed in interaction with another, which can be discussed in detail in separate articles. Be.

-The relationship between mirror nerves and catharsis based on functionalism

Entrance: watching tragedy show, tragic events

Through ears, eyes and may other senses

Agent: mirror neurons in brain



Output: Catharsis, feeling fear and love based on empathy

It is true that functionalism considers the principle of multiple realizability, which means that catharsis does not occur in all beings in a specific place in the brain that occurs in the human brain, but

here the author emphasizes the input and output of human beings. . In other words, the mirror nerves are the cause of catharsis with the help of certain input information in the human brain.

6. Conclusion

If one of the consequences of catharsis is considered to be emotional exhaustion and consequently with positive psychological consequences, it would not be unreasonable to point to the role of empathy in the treatment of anxiety and its social moral consequences. There are mini-indications that empathy may be a therapeutic agent in various disorders (Farrow et al. 2005: 45-53). Researchers have shown that empathy is useful in treating patients with PTSD. By scanning the brain with fMRI, they found that PTSD patients showed a significant increase in neural response to social tasks after a modified cycle of cognitive-behavioral therapy aimed at understanding others and empathy. These findings could be the gateway to an empathy-based treatment program. In addition, empathy plays a key role in altruism and compassion for others in physical or psychological crises. Empathy creates a sense of guilt about hurting someone and a sense of anger towards the person who hurts others. Empathy is a central and determining issue in parents' behaviors that strengthens the understanding of moral issues in raising children. It is also a gateway to internalizing abstract moral principles (Hoffman 2001), especially in the sense that it includes "moral responsibility to another" (Thompson 2001: 17).

From what has been said so far, it can be concluded that what Aristotle called catharsis years ago is justified and we have a scientific exchange in the human body. As Aristotle points out, the audience feels sympathy for the defeated hero by facing tragedy. The possibility of such a thing happening is confirmed by mirror nerves in the brain. We feel empathy when we observe the actions and feelings of others, and in a way our nerves react as if something had happened to us. But what happens when we take a deep breath of relief and do not react realistically to what has happened in another tragedy? In other words, is there a difference between when an ominous event actually happens to a person (such as amputation of a hand) and how he reacts to when an observer imitates his suffering in his mind and sympathizes with him? After sympathy, the observer seems to realize that not all of these calamities have befallen him. It is through his mirror nerves that he fully understands and sympathizes with the unfortunate and injured person, but it is through something else that he calms down and realizes that these things have not happened to him. At such times, he is emotionally drained and feels grateful and relieved in the face of what could have happened to him but did not. So far, catharsis and the function of the mirror nerves in the human brain have taken a path towards common results. But the question is, by what means does man acquire this consciousness?

Ramacandran refers to the sensory receptors and consciousness of the body as elements of consciousness. When someone touches us, our mirror nerves are stimulated despite looking at that person, and we think our hand is cut off. But our skin receptors do not send a message of damage to the brain and do not seek help. The objects and receptors in our skin and bones are healthy. Therefore, while we understand another's pain, we do not suffer as much as he does and we do not take any action to stop the injury. Therefore, when watching a tragedy show, if something scary or heartbreaking happens on the stage, the audience understands its mirror through the function of the nerves and sympathizes with the victim. The question is, if horrific events are non-objective, that is, instead of amputation or bodily injury; Lose a loved one. How does the audience sympathize with the survivors just hearing the news of the loved one's death? Addressing this issue requires writing a separate article. But it seems to be happening through memory and the cerebral cortex, known as the storage of related data and information. Perhaps it can be assumed that by remembering memories and information in our memory, we make connections with what is outside, and in this way we can identify with another. Storing information is a process we call memory, and it is one of the functions of synapses. This means that each time certain types of sensory signals pass through a series of synapses, these synapses are able to better transmit the same type of signal for the next time, which is called the facilitation process. After the sensory signals pass through the synapses many times, the synapses are so facilitated that the signals produced in the brain itself can transmit impulses from the same series of synapses even though the corresponding sensory input is not stimulated. This causes the person to experience the main emotions, although these are in fact only memories of the main emotions (Gaiton, 1389: 893).

References

Aristotle, Poetica, (1398), Translator: Saeed Honarmand, Tehran: Cheshmeh.

Beardsley, T. (1996) Profile: Daniel C. Dennett – Dennett's Dangerous Idea, Scientific American.

Bellet, Paul S., J. Maloney, Michael, (1991), The Importance of Empathy as an Interviewing Skill in Medicine, The JAMA Network.

Block, Ned. (1996). "What is functionalism?" a revised version of the entry on functionalism in The Encyclopedia of Philosophy Supplement, Macmillan.

Copleston, Frederick Charles, (2007), History of Philosophy: Greece and Rome (Vol. 1), Translator: Seyed Jalaluddin Mojtaba, Tehran: Scientific and Cultural Publications.

Dennett, Daniel C. (1965), The mind and the brain: introspective description in the light of neurological findings: intentionality, Oxford University Research Archive (Thesis). Oxford University Press. Retrieved October.

De Waal F (2009) The age of empathy: nature's lessons for a kinder society. Three Rivers Press, NewYork.

De Vignemont F, Singer T (2006) The empathic brain: how, when and why? Trends Cogn Sci.

Dickert, S (2009). "Attentional mechanisms in the generation of sympathy". Judgment and Decision Making.

Eisenberg N, Strayer J (1990) Critical issues in the study of empathy. In: Eisenberg N, Strayer J (eds) Empathy and its development. Cambridge University Press, Cambridge.

Farrow T, Hunter M, Wilkinson I, Gouneea C, Fawbert D, Smith R, Lee K, Mason S, Spence S, Woodruff P (2005) Quantifiable change in functional brain response to empathic and forgivability judgments with resolution of posttraumatic stress disorder. Psychiatry Res Neuroimaging.

Fodor, J. (1998). Concepts: Where Cognitive Science Went Wrong, Oxford.

Fornaro, Sotera, (2016), 'Catharsis'. From Lessing's Moral Purification to Goethe's Purity of Form, SKENE: Journal of Theatre and Drama Studies.

Gaiton, Hall, (2010), Medical Physiology, Translator: Farrokh Shadan, Tehran: Chehr.

Gallese V (2003) The Roots of Empathy: the shared manifold hypothesis and the neural basis of intersubjectivity. Psychopathology 36(4):171–180

Gallese V (2008) Empathy, embodied simulation, and the brain: commentary on Aragno and Zepf/Hartmann. J Am Psychoanal Assess 56(3):769–781

Gallese V (2009) Mirror neurons, embodied simulation, and the neural basis of social identification. Psychoanal Dialogues 19(5):519–536

Gallese V (2011) Mirror neurons and art. In: Bacci F, Melcher D (eds) Art and the senses. Oxford University Press, New York, pp 445–463

Golden, Leon, (1962), Catharsis, Published By: The Johns Hopkins University Press.

Hoffman ML (2001) Empathy and moral development: implications for caring and justice. Cambridge University Press, New York.

Iacoboni M, Dapretto M (2006) The mirror neuron system and the consequences of its dysfunction. Nat Rev Neurosci 7(12):942–951

Iacoboni M (2009) Mirroring people; the science of empathy and how we connect with others. Picador, New York .

Lewis, D. K., (1986), On the Plurality of Worlds, Oxford: Blackwell.

Marr, D. (1982). Vision: A Computational Approach. San Francisco: Freeman & Co.

Mirshakari, Javad and (word selection group), (2017), Dictionary of words approved by the Academy: Fourth Office, Tehran: Academy of Persian Language and Literature Publications.

Mukamel R, Ekstrom AD, Kaplan J, Iacoboni M, Fried I (2010) Single-neuron responses in humans during execution and observation of actions, New York..

Piccinini G (2010). "The mind as neural software? Understanding functionalism, computationalism, and computational functionalism", Philosophy and Phenomenological Research.

Putnam, Hilary. (1960). "Minds and Machines". Reprinted in Putnam.

Putnam, Hilary. (1967). "Psychological Predicates". In Art, Mind, and Religion, W.H. Capitan and D.D. Merrill (Later published as "The Nature of Mental States" in Putnam .

Putnam, H. (1967). "The Mental Life of Some Machines," in H.-N. Castaneda (Ed.), Intentionality, Minds, and Perception. Detroit, MI: Wayne State University Press.
Praszkier, Ryszard, (2014), Empathy, mirror neurons and SYNC, Mind & Society.
Ramachandran VS (2006) Mirror neurons and the brain in the vat. http://www.edge.org/3rd_culture/ramachandran06/ramachandran06_index.html. Accessed 26 Nov 2014
Ramachandran VS, Oberman LM (2006) Broken mirrors: a theory of autism. Sci Am 63:69
Rizzolatti G, Fabbri-Destro M (2008) The mirror system and its role in social cognition. Curr Opin Neurobiol 18(2):179–184
Roy S (2010) The psychology of empathy. Futurehealth. www.futurehealth.org/populum/page.php?f=The-Psychology-of-Empathy-by-Saberi-Roy-100620-281.html. Accessed 26 Nov 2014.
Thompson E (2001) Empathy and consciousness. J Conscious Stud 8(5–7)
Zimran, Mohammad, (2006), Aristotle's Philosophy of Art, Tehran: Academy of Arts.

url1: https://medicaldictionary.thefreedictionary.com/Catharsis+ (medicine)
url2: https://onlinelibrary.wiley.com/doi/book/10.1002/9781444306002: the encyclopedia of positive psychology

To read more about functionalism:
Piccinini G (2010). "The mind as neural software? Understanding functionalism, computationalism, and computational functionalism" (PDF). Philosophy and Phenomenological Research. 81 (2): 269–311. doi:10.1111/j.1933-1592.2010.00356.x.
Gillett, C. (2007). "A Mechanist Manifesto for the Philosophy of Mind: The Third Way for Functionalists". Journal of Philosophical Research, invited symposium on "Mechanisms in the Philosophy of Mind", vol.32, pp. 21-42.
Gillett, C. (2013). "Understanding the Sciences through the Fog of 'Functionalism(s)'". In Hunneman (ed.) Functions: Selection and Mechanisms. Dordrecht: Kluwer, pp.159-81.