

ACTION UNDERSTANDING IS NOT ENTIRELY NEUTRAL IT IS EXISTENTIAL, IT IS IGWEBUIKE

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Abstract

*Action understanding is defined as: "The capacity to achieve the internal description of an action and to use it to organize appropriate future behavior".¹ Since the advent of the mirror neuron explanation to action understanding, there has been a lot of uproar as to whether this can be finally named to be the solution of the age long misunderstanding of the phenomenon known as the decoding of the others' action or whether this as other before it, is merely a fluke. The Mirror Neuron System (MNS) proposed in the 80s' by Rizzolatti et al, is called upon in the explanation of a range of activities arising from the other, namely intention, action, imitation. That is to say that with the aid of Mirror Neurons (MNs), we can be able to decode the others' actions and intention, and even engage in mimicry, if it be the case. More to this, we can also engage in empathy, which is totally human and interact intersubjectively. This according to the MN proposers can be explained via MNs. Furthermore, what this says is that a full understanding of the other, is wired in the brain of the human person, that is to say that it is neural. According to the MNS explanation of action understanding is: When an observed action evokes a neural activity which is normally evoked when the observed action is executed, the meaning of the action is understood because of the similarity between the two neural activities.² Action understanding could be mediated by the MNS. But what truly defines our ability to understand the action of the other, and in the same wise, understand the other? If we define action understanding as the ability to decode and decipher the action of the other, even without being told, can we say that it is because we have a wired-to-grasp neural mechanism that determines this? Or are these mechanism a mere reflection of the existential-ness, the Igwebuike-ness, of the action understanding reality? The Igwebuike thesis pays attention to the existential-ness of persons, thereby situating the understanding of the human action, not on neural mechanism, but on the *ibikọ ọnu ọnu* element of the Igbo-verse. Igwebuike says that action understanding is tied to the existential structures of togetherness that colorfully defines the Igbo worldview, and that*

¹ G. Rizzolatti, L. Fogassi, & V. Gallese, *Neurophysiological Mechanisms Underlying The Understanding And Imitation Of Action*, Nature Reviews Neuroscience, 2, 2001, 661-670.

² G. Rizzolatti, L. Fadiga, L. Fogassi, & V. Gallese, *Premotors Cortex And The Recognition Of Motor Actions*, Cognitive Brain Research, 3, 1996, 131-141.

of the entirety of the human race. This paper would seek to explain how vital Igwebuike is to action understanding, determining it, even though it is scientifically situated in the neural mechanism of the brain. Here the Igbo existentialism enjoys a rapport with science. It starts off by giving a full understanding of the MNs thesis. It will then move on to explain why this thesis is seemingly flawed based on the evidence that counteract the scientific findings that have been proposed by the MNs proponents. Then we will eventually end up with one conclusion, namely that action understanding is better mediated by the fact of living together, that is to say that a shared existence is what makes understanding of the action of the other better articulated.

Keywords: Action Understanding, Mirror Neurons, Igwebuike, The human person.

Mirror Neurons: A Clarification

Mirror neurons, which have been discovered by single cell recordings in the parieto-frontal areas of the macaque's brain, are neurons that discharge in the monkey's brain both when a specific action is observed and when the same action is performed³ by the monkey himself. In healthy humans, a direct measuring of neural activity is not possible for ethical reasons as the scalp has to be opened for single cell recordings. Still, there is broad evidence from indirect studies that a similar parieto-frontal mirror mechanism also exists in humans.⁴ From the above we could say thus that the key characteristics of mirror neurons are that their activity is modulated both by action execution and action observation, and that this activity shows a degree of action specificity. This distinguishes mirror neurons from other 'motor' or 'sensory' neurons whose discharge is associated with either execution or observation, but not both. It also distinguishes mirror neuron responses from other types of response to vision of objects or other non-action stimuli. As the activity of mirror neurons cannot yet be unambiguously detected using neuroimaging techniques.⁵

Mirror neurons were first described in the rostral division of the ventral premotor cortex (area F5) of the macaque brain, and have subsequently been reported in the inferior parietal lobule, including the lateral and ventral

³ V. Gallese, *Mirror Neurons And Embodied Simulation And The Neural Basis Of Social Identification*, In *Psychoanalytic Dialogues*, Vol 19, 2009, 519–536.

⁴ A. Steinhorst-J. Funke, *Mirror Neuron Activity Is Not Proof For Action Understanding*, In *Frontiers In Human Neuroscience*, Vol 8, Article 333, May 2014, 1-4.

⁵ J.M. Kilner-R.N. Lemon, *What We Currently Know About Mirror Neurons*, In *Current Biology* 23 Vol 23, Nos 23, December 2, 2013, R1057–R1062.

intraparietal areas, and in the dorsal premotor and primary motor cortex. But despite the large array of areas in which mirror neurons have been reported, the majority of mirror neuron research has studied the activity of mirror neurons in area F5.⁶ The discovery of mirror neurons generated much excitement about their possible role in mechanisms of movement and action perception (understanding). When we observe someone performing an action, such as waving their hand hello, how do we instantaneously understand that their intention is to greet us? According to the 'simulation theory', we covertly and unconsciously simulate ourselves performing the movement, access our own associated intentions and goals for that particular movement, and assign them to the person we are observing. Mirror neurons have been proposed as the physiological mechanism that enables a critical step in this process: precise visual to motor mapping.⁷ According to the theory, whenever you observe someone performing a movement, particular movement-selective mirror neurons embedded in your motor system are activated, enabling you to simulate yourself performing that movement, and access your own associated intentions and goals (probably through activity of other brain areas, including the limbic system).⁸ Mirror neurons' activity reveals the existence of a mechanism through which perceived events as different as sounds, or images, are nevertheless coded as similar to the extent that they represent the assorted sensory aspects of the motor act's goal. It has been proposed that mirror neurons by mapping observed, implied, or heard goal-directed motor acts on their motor neural substrate in the observer's motor system allow a direct form of action understanding, through a mechanism of embodied simulation.⁹

Several studies using different experimental methodologies and techniques have demonstrated also in the human brain the existence of a mechanism directly mapping action perception and execution, defined as the Mirror Neuron. Such studies reveal that during action observation there is a strong activation of premotor and posterior parietal areas, the likely human homologue of the monkey areas in which mirror neurons were originally described. The mirroring mechanism for actions in humans is somatotopically organized; the same regions

⁶ Ibid.

⁷ I. Dinstein, *Human Cortex. Reflections Of Mirror Neurons*, In *Current Biology*, Vol 18, No 20, 2008, R956-R959.

⁸ Ibid.

⁹ V. Gallese, *Mirror Neurons And Embodied Simulation And The Neural Basis Of Social Identification*, In *Psychoanalytic Dialogues*, Vol 19, 2009, 519–536.

within premotor and posterior parietal cortices normally active when we execute mouth-, hand-, and foot-related acts are also activated when we observe the same motor acts executed by others.¹⁰ Watching someone grasping a cup of coffee, biting an apple, or kicking a football activates the same neurons of our brain that would fire if we were doing the same. The MNS in humans is directly involved in imitation of simple movements,¹¹ imitation learning of complex skills,¹² in the perception of communicative actions,¹³ and in the detection of action intentions.¹⁴ Furthermore, the premotor cortex containing the MNS is involved in processing action-related words and sentences, suggesting that mirror neurons together with other parts of the sensory-motor system could play a relevant role in language semantics.¹⁵

An important functional aspect of mirror neurons is the relation between their visual and motor properties which mediates imitation and action understanding. Virtually all mirror neurons show congruence between the visual actions they respond to and the motor responses they code. According to the type of congruence they exhibit, mirror neurons have been subdivided into “strictly congruent” and “broadly congruent” neurons.¹⁶ Mirror neurons in which the effective observed and effective executed actions correspond in terms of goal (e.g., grasping) and means for reaching the goal (e.g. precision grip) have been classed as “strictly congruent.” They represent about one third of F5 mirror neurons. Mirror neurons that, in order to be triggered, do not require the observation of exactly the same action that they code motorically have been classed as “broadly congruent.” They represent about two thirds of F5 mirror neurons.¹⁷

¹⁰ Ibid.

¹¹ M. Iacoboni, R.P. Woods, M. Brass, H. Bekkering, J.C. Mazziotta, & G. Rizzolatti (1999), *Cortical Mechanisms Of Human Imitation*, In *Science*, 286, 1999, 2526–2528.

¹² G. Buccino, F. Lui, N. Canessa, I. Patteri, G. Lagravinese, F. Benuzzi, *Et Al.*, *Neural Circuits Involved In The Recognition Of Actions Performed By Nonconspecifics. An Fmri Study* In *Journal Of Cognitive Neuroscience*, 16, 2004a, 114–126.

¹³ G. Buccino, S. Vogt, A. Ritzl, G.R. Fink, K. Zilles, H.J. Freund, *Et Al.*, *Neural Circuits Underlying Imitation Learning Of Hand Actions. An Event-Related Fmri Study*, In *Neuron*, 42, 2004, 323–334.

¹⁴ M. Iacoboni, I. Molnar-Szakacs, V. Gallese, G. Buccino, J. Mazziotta, And G. Rizzolatti, *Grasping The Intentions Of Others With One’s Owns Mirror Neuron System* In *Plos Biology*, 3, 2005, 529–535.

¹⁵ V. Gallese, *Mirror Neurons And Embodied Simulation And The Neural Basis Of Social Identification*, In *Psychoanalytic Dialogues*, Vol 19, 2009, 519–536.

¹⁶ V. Gallese, L. Fadiga, L. Fogassi, G. Rizzolatti, *Action Recognition In The Premotor Cortex*, In *Brain* 119, 1996, 593–609.

¹⁷ G. Rizzolatti-L. Craighero, *The Mirror Neuron System*, In *Annu. Rev. Neurosci.*, Vol 27, 2004, 169–92.

How does MNs Permit Action Understanding?

Action mirroring, action understanding, action decoding, all converge at one point, namely that the intended action is not only perceived by on-lookers, it is also “intentionally” deciphered. Action understanding is that cognitive ability to compute and decode or decipher another person’s actions, be it mobile or stationary, verbal or non-verbal, by connecting the information received via perception with the an already seated knowledge of one’s experience that has been coloured by one’s worldview and sociocultural milieu. According to Rizzolatti and Craighero,

Two main hypotheses have been advanced on what might be the functional role of mirror neurons. The first is that mirror-neuron activity mediates imitation; the second is that mirror neurons are at the basis of action understanding.¹⁸

This fact of action understanding though is not limited to the functioning of the mirror neurons. For, “even though”, in the words of Rizzolatti and Craighero,

we are fully convinced (for evidence see next section) that the mirror neuron mechanism is a mechanism of great evolutionary importance through which primates understand actions done by their conspecifics, we cannot claim that this is the only mechanism through which actions done by others may be understood.¹⁹

Action understanding in humans, paves the way for intention understanding, this is because the human cognitive capabilities and his brain is more advanced and very much complex in its dealings and undertakings. According to Gallese,

We (humans) not only understand what others are doing but also why, that is, we can attribute intentions to others. Indeed, the mainstream view on action and intention understanding holds that humans when understanding others start from the observation of an intentionally opaque behavior, biological motion, which has to be interpreted and explained in mental terms. This explanatory process is referred to as “mind reading,” that is, the attribution to others of internal mental states, mapped in the mind of the observer as internal representations in

¹⁸ Ibid.

¹⁹ Ibid.

propositional format. These representations supposedly play a causal role in determining the observed behavior to be understood.²⁰

But how do mirror neurons mediate understanding of actions done by others? The proposed mechanism is rather simple. Each time an individual sees an action done by another individual, neurons that represent that action are activated in the observer's premotor cortex. This automatically induced, motor representation of the observed action corresponds to that which is spontaneously generated during active action and whose outcome is known to the acting individual. Thus, the mirror system transforms visual information into knowledge.²¹ In other words what is being said is that subject who observes the action of the object (subject) automatically sets himself in the place of the object (subject), and is able to decipher what action is to follow next from the action itinerary that is being witnessed. The subject recognizes the action pathway that the object (subject) threads and so is able to know the outcome of such an action. Arising from Neurophysiological evidence, experiments demonstrate that when individuals observe an action done by another individual their motor cortex becomes active, in the absence of any overt motor activity. A first evidence in this sense was already provided in the 1950s by Gastaut and his coworkers. They observed that the desynchronization of an EEG rhythm recorded from central derivations (the so-called *mu* rhythm) occurs not only during active movements of studied subjects²², but also when the subjects observed actions done by others. This observation was confirmed by Cochin et al. and by Altschuler et al. around 1999 and 2000, using EEG recordings, and by Hari et al. in 1998 using magnetoencephalographic(MEG)technique. This last study showed that the desynchronization during action observation includes rhythms originating from the cortex inside the central sulcus.²³ More direct evidence that the motor system in humans has mirror properties was provided by transcranial magnetic stimulation (TMS) studies.²⁴ And this approach has been used to study the

²⁰ V. Gallese, *Mirror Neurons And Embodied Simulation And The Neural Basis Of Social Identification*, In *Psychoanalytic Dialogues*, Vol 19, 2009, 519–536.

²¹ G. Rizzolatti-L. Craighero, *The Mirror Neuron System*, In *Annu. Rev. Neurosci.*, Vol 27, 2004, 169–92.

²² G. Cohen-Seat, H. Gastaut, J. Faure, G. Heuyer, *Etudes Experimentales De L'activite Nerveuse Pendant La Projection Cinematographique Dans Rev. Int. Filmologie* 5, 1954, 7–64.

²³ R. Hari-R. Salmelin, *Human Cortical Oscillations. A Neuromagnetic View Through The Skull* In *Trends Neurosci.* 20, 1997, 44–49.

²⁴ G. Rizzolatti-L. Craighero, *The Mirror Neuron System*, In *Annu. Rev. Neurosci.*, Vol 27, 2004, 169–92. Tms Is A Noninvasive Technique For Electrical Stimulation Of The Nervous System. When Tms Is Applied To The Motor Cortex, At Appropriate Stimulation Intensity, Motor-Evoked Potentials (Meps) Can Be Recorded From

mirror neuron system. The importance of TMS studies indicate that a mirror-neuron system (a motor resonance system) exists in humans and that it possesses important properties not observed in monkeys. First, intransitive meaningless movements produce mirror neuron system activation in humans, whereas they do not activate mirror neurons in monkeys²⁵. Second, the temporal characteristics of cortical excitability, during action observation, suggest that human mirror-neuron systems code also for the movements forming an action and not only for action as monkey mirror-neuron systems do.²⁶

Is there more to action understanding than the mirror neurons?

For Rizzolatti et al the mirror neuron system may not be the only mechanism that can support action understanding. They also note that these [mirror neuron] findings do not exclude the possibility that other areas are involved in the description of biological movement and the understanding of action. According to G. Hickok, action understanding is not limited to the MN itinerary. This is because action understanding in humans is a complex series of events that calls to bear the physiological, psychological, emotional state of the human person and not just the neural. Thus for Hickok, the goal of action understanding is more in the consequences of the action, than in the neural encoding and decoding of the action. He references the fact made upon the macaque monkey in which it is scientifically believed that the MNs in such animals mediate action understanding.²⁷ He notes,

Let's consider the task employed by Umilta et al., grasping food with pliers. What is the goal of such an action? As these authors suggest, there are both proximal and distal goals. Umilta et al. suggest that the distal goal is to grasp the food (it is probably more accurate to describe this as an intermediate goal with the ultimate goal being something closer to eating the food, but let's gloss over this), while the proximal goal is to

Contralateral Extremity Muscles. The Amplitude Of These Potentials Is Modulated By The Behavioral Context. The Modulation Of Meps' Amplitude Can Be Used To Assess The Central Effects Of Various Experimental Conditions.

²⁵ Recall That The Mns Were First Found In Macaque Monkeys, And Then Such Studies Were Used To Explain The Fact Of Man's Ability To Imitate, Understand Action, Intentions And Empathize, Although Detailed Scientific Research As Was Done In The Brain Of The Monkey Has Not Yet Been Done With That Of The Human Brain.

²⁶ G. Rizzolatti-L. Craighero, *The Mirror Neuron System*, In *Annu. Rev. Neurosci.*, Vol 27, 2004, 169–92.

²⁷ It Was In Reference To How Much Was Discovered In The Macaque's Neural Repertoire That Researchers Directed Their Findings To The Human Circle, With The Intention Of Knowing If The Age Long Debate Of Our Ability To Imitate, To Understand Actions And Intentions Are Internal And Neutrally Physical, Than Just Psychological Existentialism Or Theoretical Speculations.

grasp the pliers. The point of the Umilta et al. study is to show that the distal goal at least is not a specific motor program, but rather a more abstract state. So what is it? How does the monkey know when he has achieved the intended goal? The answer is that the goal is encoded neurally as a sensory state: the visually determined positioning of the pliers around the food object and the somatosensory perceived change in resistance of the pliers. If the monkey were blindfolded and prevented from receiving somatosensory feedback, no matter how many movements he executed, accurately or not, the monkey would have no way to know whether the goal was achieved. The motor system alone is literally and figuratively blind and in this sense is incapable of understanding. The goals of an action are not in the actions themselves as Umilta et al. have shown, they are in the consequences of the actions and these consequences are, for the range of actions we are considering here, sensory.²⁸

This goes to imply that to understand an action, we must understand the *sensory* goal(s) of the action. Action understanding is a function of perceptual, not motor systems.²⁹

There is reason to believe that the findings done by Rizzolatti et al, are not so factual, firstly as regards the monkey they used for research, and then the human homologue relating to the research made on the macaque. What has been attributed to be the functioning of the MNs are in fact sensorimotor properties. From the foregoing quoted, if the senses (visual especially) are impaired then the firing of such neurons that have been classed as MNs, would also be impaired.

²⁸ G. Hickok, *Do Mirror Neurons Subserve Action Understanding*, In *Neurosci Lett.* 12 No. 540, April 2003, 56–58. The Experiment Was Performed By Umilta And His Colleagues, As Noted In Umilta Ma, Escola L, Intskirveli I, Grammont F, Rochat M, Caruana F, Jezzini A, Gallese V, Rizzolatti G, *When Pliers Become Fingers In The Monkey Motor System*, In *Proceedings Of The National Academy Of Sciences Of The United States Of America*, 105, 2008, 2209–2213. Monkeys Again Were Used For This Experiment, This Was To Indicate The Fact That Even For Monkeys, Action Understanding Is Not That Direct As We Would Have Believed It To Be Via The Thesis Of Mns. In His Article, *The Eight Problem For The Mirror Neuron Theory*, Hickok Notes In His First Objection To The Mirror Neuron Thesis That *There Is No Evidence In Monkeys That Mirror Neurons Support Action Understanding*. Here He Comes Strongly Against Three Experiments Held In The Support Of The Action Understanding Function Of The Mns. In The Second Experiment Opposed, He Raises An Argument Based On Meaning, And Seeks To Find Out If The Monkeys That Understand The Action Also Understand The Meaning Of The Action, For This Is Essentially The End To All Action Understanding. All That Is Noted Is That The Monkey Is Able To, Via The Senses, Link Up A Series Of Activities That It Has Mastered Over The Course Of Time. Hickok Moves Further To Claim That The Ability To Action Understand In The Macaque Was Not Really Tested. (G. Hickok, *The Eight Problem For The Mirror Neuron Theory*, In *J Cogn Neurosci.*, 21(7), July 2009, 1229–1243.)

²⁹ G. Hickok, *Do Mirror Neurons Subserve Action Understanding*, In *Neurosci Lett.* 12 No. 540, April 2003, 56–58.

Thus can it not be said that they [mirror neurons] reflect action understanding rather than contribute to it?³⁰ Can it not be said that a sensorimotor theory better explains the response properties of mirror neurons, does so more straightforwardly, without suffering the empirical roadblocks of the action understanding theory?³¹ Even if we subscribe to the point that mirror neuron activity is a proof for the monkey's action understanding, it would not be justified to make statements about *human* action understanding, this is because the definition of action understanding already hides the historical and cultural dimensions of human understanding, but it does not imply that the macaque's action understanding and human action understanding are equal. For such equalization has not been proven and is not provable. Can the macaque be asked about their understanding via an experimental test? Thus, the relation between results, interpretation, and conclusion, I mean that of the macaque and the human person, is methodologically incorrect. Nonetheless, our concern here is the MNs in reference to the human person.

In line with the MN thesis with regard to the human person, when we perceive an action, our mirror neurons, which are both sensory and motor units, become active as if we acted ourselves. The proponents of the mirror neuron system theory assumed that this mechanism supports action understanding. In this theory, action understanding means that sensory and motor aspects, goal, and intention of some action performed by another individual and perceived by the observing individual can be recognized and understood by this observer through the mirror neuron system, and the respective neuronal activity can be reproduced by this system in a similar situation. So, as observers, we are "in the mental shoes" of the executor. We understand his/her goals and intentions because we internally simulate this action via our mirror neurons.³² The system whereby we understand the goals and intentions of others' actions is quite simple and parsimonious. We do it because our mirror areas code goals and intentions of the actions that we perform and perceive in others. The mirror neuron theory proponents use the term "action understanding" to emphasize that not only the sensory and motor aspects of an action, but also its goal and intention can be recognized by an observer through the mirror neuron system.

³⁰ G. Csibra, *Action Mirroring And Action Understanding. An Alternative Account*, In Haggard, P.; Rosetti, Y.; Kawato, M., Editors, *Sensorimotor Foundations Of Higher Cognition. Attention And Performance Xii*, Oxford University Press, Oxford, 2007, 453-459.

³¹ G. Hickok-M. Hauser, *Misunderstanding Mirror Neurons*, In *Current Biology* Vol 20 No 14, R593-R594.

³² V. Gallese, *The "Shared Manifold" Hypothesis. From Mirror Neurons To Empathy*, *J. Conscious. Stud.*, 8, Nos. 5/7, 2001, 33-50.

The observer understands the “why?” of the action. The critics of the mirror neuron theory of action understanding support inference theories. They represent the traditional standpoint on the nature of this process. According to these theories, action understanding is more complex and meticulous. It requires costly stimulus processing and occurs outside the mirror neuron system.³³

The criticism here is based on the apparent internal logical inconsistency of the mirror neuron theory of action understanding. Its proponents postulate that the mirror neurons code the goals of others’ actions because they are activated if the observed action is goal-directed or is a pantomime of a goal-directed action. However, the mirror neurons are activated *only* when the observed action is goal-directed (object-directed action or a communicative gesture, which certainly has a goal too) or is a pantomime of a goal-directed action. How do they “know” that the definite action is goal-directed or is a pantomime of the goal-directed action? In what stage of their activation do they detect a goal of the movement or its absence? According to Kosonogov, the mirror neuron system can be activated only after the goal of the observed action is recognized by some other brain structures.³⁴ What this means is that the brain must “decode” that the movements that it perceives forms a complex action, and that this action is goal oriented. Proponents of the MN theory note that only if the action is goal-directed or is a pantomime of the goal-directed action, can the mirror neurons be activated, but if the action is not goal-directed, they are not activated. The question that can be posed here is that can the mirror neurons detect (or recognize, or attribute) the goals of others’ actions? And who detects the actions of others? Is it the MNs or the human person?

We say that an executor has goals and intentions when we know or can imagine the potential consequences of his/her action. When we see new actions with new objects, it is hard to attribute goals and intentions because we do not know the consequences of each specific movement. A philosophical question arises as to whether or not we are capable of knowing that others’ actions have goals. We only attribute some goals to others’ actions because we believe that our actions have goals.³⁵ From what has been said thus, we can offer a different definition to

³³ V. Kosonogov, *Why The Mirror Neurons Cannot Support Action Understanding In Neurophysiology*, Vol. 44, No. 6, 2012, 499-502.

³⁴ Ibid.

³⁵ Ibid.

action understanding as the ability to attribute prerequisites (reasons) and consequences (goals) of actions we perceive in others. In line with this, we can add that understanding an action, extends beyond the perceptual, or the sensory; it involves a recognition that is part and parcel of the observer, for a novel action, in the eyes of the observer, might be difficult to decode.

An Understanding of the Igwebuike Thesis

Igwebuike is anchored on the African worldview, which, according to Iroegbu is characterized by a common origin, common world-view, common language, shared culture, shared race, colour and habits, common historical experience and a common destiny. It is a complementary philosophy which understands life as a shared reality.³⁶ Life is a life of *sharedness*; one in which another is part thereof. It is a relationship, though of separate and separated entities or individuals but with a joining of the same whole.³⁷ It is a relationship in which case the two or more coming together makes each of them a complete whole; it is a diversity of being one with each other. *Igwebuike* is the heart of African thought, and in fact, the modality of being in African philosophy. It is taken from the Igbo language, which is a composite word made up of three dimensions. Therefore, it can be employed as a word or used as a sentence: as a word, it is written as *Igwebuike*, and as a sentence, it is written as, *Igwe bu ike*, with the component words enjoying some independence in terms of space. The three words involved: *Igwe* is a noun which means number or population, usually a huge number or population. *Bu* is a verb, which means *is*. *Ike* is another verb, which means *strength* or *power*. Thus, put together, it means 'number is strength' or 'number is power', that is, when human beings come together in solidarity and complementarity, they are powerful or can constitute an insurmountable force.³⁸ Its English equivalent is 'complementarity'. At this level, no task is beyond their collective capability. It is a concept that was employed by African traditional philosophers of the complementary school of thought to discuss the nature of the observed African reality.³⁹ The Igbo African existential world is marked by communal living, isolating all forms of individual alienation amongst human persons. *Igwebuike* rests on the African principles of solidarity and

³⁶ A.I. Kanu, *Igwebuike As An Igbo-African Ethic Of Reciprocity*, in *IGWEBUIKE. An African Journal of Arts and Humanities Vol. 3 No 2, March 2017*, 153-160.

³⁷ A.I. Kanu, *Igwebuike as an Igbo-African Philosophy of Education*, A paper presented at the International Conference on Law, Education and Humanities. 25th -26th November 2015 University of Paris, France.

³⁸ A.I. Kanu, *Igwebuike as a trend in African philosophy* in *IGWEBUIKE. An African Journal of Arts and Humanities*, 2. 1. 2016, 97-101.

³⁹ A.I. Kanu, *Igwebuike as an Igbo-African hermeneutic of globalization* in *IGWEBUIKE: An African Journal of Arts and Humanities*. 2. 1. 2016, 1-7.

complementarity. It argues that 'to be' is to live in solidarity and complementarity, and to live outside the parameters of solidarity and complementarity is to suffer alienation. 'To be' is 'to be with the other', in a community of beings. This is based on the African philosophy of community, which is the underlying principle and unity of African Traditional Religious and philosophical experience.⁴⁰ The Igwebuiké philosophy is ontological but more importantly, it is existential. Kanu posits,

Ontologically, it (*Igwebuiké*) emphasizes the universal character of philosophy, existentially, it respects the regional character of African philosophy, that is, its Africanness, with Africa being the locale for the philosophical investigation. It strongly believes that universality and particularity are congenial in the sense that they need each other to remain germane and perennial, to remain contextually intelligible and of standard universally.⁴¹

Reflecting on the African idea of life as a shared reality, and in which complementarity is observed, Kanu notes that it presupposes a tailor made-cloth, measured, cut and sewn to fit into the curves, contours, shape and size, peculiarities and particularities of a being.⁴² Thus, every being has a missing part and is at the same time, a missing part. Ekwulu, opines that

If the other is my part or a piece of me, it means that I need him for me to be complete, for me to be what I really am. The other completes rather than diminishes me. His language and culture make my own stand out and at the same time, they enrich and complement my own. In the presence of his language and culture, the riches and poverty of my language and culture become clear and I see that his own and my own when put together form a richer whole when compared to any of them in isolation.⁴³

The implication of this is the rich complementarity that the Igwebuiké philosophy brings to bear to the broader spectrum of philosophy. It indicates

⁴⁰ A. I. Kanu, *Igwebuiké As A Trend In African Philosophy*, in *Igwebuiké. An African Journal of Arts and Humanities*. Vol. 2 No 1, March 2016, 108-113.

⁴¹ *Ibid.*

⁴² A.I. Kanu, *Igwebuiké as the unity of the African philosophical experience* in International Conference of the Society for Research and Academic Excellence. University of Nigeria, Nsukka. 14th -16th September 2015.

⁴³ B.I. Ekwulu, *Igbo concept of Ibe (the other) as a philosophical solution to the ethnic conflicts in African countries* in B. I. Ekwulu (Ed.), *philosophical reflections on African issues*, Enugu Publications, Delta, 2010, 183-192.

how much of the *other* is in the *I*, or better put, how much of you is contained in me, and me in you. Ekwulu further notes that the self is not only completed in relating with the other, but that it attains self-realization in the other:

I realize myself in the other because it is in the 'Thou-ness' of the Thou that my 'Is-ness' is realized. I am 'I' because you are 'You'. Without Thou there is no I. We are 'We' because they are 'They', and without 'They', there is no 'We'.⁴⁴

It is within this being-laden context, which is life as sharedness, that all questions of meaning can be handled adequately and fully within the context of mutual complementarity of all possible relations.⁴⁵ According to Kanu, from the foregoing this explains why the Igbo would refer to the 'Other' as *Ibe*, which means 'a piece of' or 'a part of', as in *ibe anu* (a piece of meat) or *ibe ede* (a piece of cocoyam). The Igbo would, therefore, refer to the 'other person' as *ibe m* which means 'my piece' or *mmadu ibe m* (my fellow human being). This is the concept also employed in reference to relationships and reciprocity: love one another (*hunu ibe unu n'anya*), help one another (*nyere nu ibe unu aka*), respect one another (*sopuru nu ibe unu*), etc. Since the 'other' refers to my own piece, it would, therefore, mean that to love the other is to love oneself, to help the other is to help oneself and to respect the other is to respect oneself.⁴⁶ Put the other way round, to hate the other is to hate oneself, to refuse help to the other is to refuse help to oneself and to disrespect the other is to disrespect oneself.

How Igwebuiké Mediates Action Understanding

The strength of the Igwebuiké thesis regarding action understanding can be better construed from the worldview of which it belongs to, that is the Igbo African worldview. This worldview is separated from that of the western world, as Kanu succinctly puts it thus,

There is an obvious diversity between the Western conceptualization scheme and the African conception of reality. Onyeocha avers that "whereas Western philosophy is characterized by the problem of the knowledge of universals involving abstractions on the one hand...

⁴⁴ Ibid.

⁴⁵ I.I. Asouzu, *Ibuanyidanda. New complementary ontology. Beyond world immanentism, ethnocentric reduction and impositions*, Lit Verlag Publications, Munster, 2007, 252-253.

⁴⁶ A.I. Kanu, *Igwebuiké As An Igbo-African Ethic Of Reciprocity*, in *Igwebuiké. An African Journal of Arts and Humanities Vol. 3 No 2, March 2017*, 153-160.

Africans exercise their thinking on the correctness of existence, the problem of living and life itself". The Western pattern of thought is exclusivistic, depersonalized, objectivised and more concerned with analysis; the African scheme of conceptualization is inclusivistic, integrative, non-reductionistic, concrete, personalized and subjectivised in all its manifestations, expressing the interconnectedness of reality- a world of relationship, harmony, continuity and complementarity.⁴⁷

Onyeocha (2006) argues that "the African conceives of reality in terms of a universe of forces that are linked together, and are in constant interplay with one another",⁴⁸ for what is pertinent to this worldview is not that the branch grows out of the tree, it is that the branch remains connected to the tree sharing one life force. It knows the tree as much as the tree knows it. The Igwebuiké philosophy is about complementarity, harmony, completion, continuity that arises from one and flows to the other; a flow that is one and the same time reciprocal, that is to say that as it flows from one to the other, it also flows from the other back. There is thus no stop, no beginning, rather there is continuation. Igwebuiké as a complementary philosophy understands life as a shared reality. And it is only within the context of complementarity that life makes meaning.⁴⁹ Life is a life of sharedness; one in which another is part thereof. A relationship, though of separate and separated entities or individuals but with a joining of the same whole.⁵⁰ According to this philosophy, the attainment of meaning is based on the links that extends and exists between one and the other, between you and I.

Recalling what Kosonogov says,

We say that an executor has goals and intentions when we know or can imagine the potential consequences of his/her action. When we see new

⁴⁷ A.I. Kanu, *Igwebuiké, Personal Identity and Alterity in Igwebuiképedia Internet Encyclopedia of African Philosophy*, A Publication of Tansian University, Department of Philosophy and Religious Studies, **ISSN: 2504-9038** URL: <http://igwebuiképedia.info/Alterity.asp>

⁴⁸ I.M. Onyeocha, *Africa's idea about the nature of reality* in *Maryland Studies*. 3. 5., 2006, 89-105.

⁴⁹ A.I. Kanu, *Igwebuiké, Personal Identity and Alterity in Igwebuiképedia Internet Encyclopedia of African Philosophy*, A Publication of Tansian University, Department of Philosophy and Religious Studies, **ISSN: 2504-9038** URL: <http://igwebuiképedia.info/Alterity.asp>

⁵⁰ A.I. Kanu, *Igwebuiké as an Igbo-African Philosophy of Education* A paper presented at the International Conference on Law, Education and Humanities. 25th -26th November 2015 University of Paris, France.

actions with new objects, it is hard to attribute goals and intentions because we do not know the consequences of each specific move.⁵¹

The meanings that human being carry pertaining to an action done by the other is based on what they already know about the action series. That is to say that a foreknowledge of the seriality of the action, makes one understand it, based on something as minimal as the initiation of the process. For we all know that when an individual grasps a cup of tea, very often he/she drinks it; this is a simple association. Likewise, we expect that thunder always (or frequently) follows lightning.⁵² How? We might say that we have learned this overtime, yet according to the Igbo-African worldview, we are linked to these events that is why we are fully aware of their happenings. What is being said here is that the human person knows of its existence to be tied to a whole, not submerged and usurped by the whole, but tied to a whole, a greater reality that defines its particular and peculiar existential bearings. I am thus conscious of the other, because the other is a part of me, and I am a part of him. In my own existential circle, you have a functional presence and a part to play, and I have this in your own existential circle and we are both bound up together in a greater circle of reality of worlds, The *Eluigwe*-The Sky; The *Ala Mmuo*- The Spirit world; The *Ala mmadu* - The land of the living.⁵³ There is an interconnectedness, one that is not just theoretically noted, but one which is practically felt.

We had earlier defined action understanding as “the ability to attribute prerequisites (reasons) and consequences (goals) of actions we perceive in others”. And what is being opined here is that whether we endorse the fact of a neural explanation, there yet must be an existential rapport between observer and observed for the former to be able to decipher the actions and intentions of the latter. That is to say that the observer and the observed are not really separated from each other but complement each other. There can be no observer without the observed, and the observed also cannot be without an observer to testify to what is being observed. Yet the intricate knowledge of what lies behind the action, I mean the intention behind the action is also able to be understood based on the existential link that exists between the spectator and the actor. The

⁵¹ V. Kosonogov, *Why The Mirror Neurons Cannot Support Action Understanding In Neurophysiology*, Vol. 44, No. 6, 2012, 499-502

⁵² Ibid.

⁵³ C.A. Okoye, ‘*Onwe*’. *An Inquiry into the Igbo Concept of the Self* in *Ogirisi*. a new journal of African studies Vol. 8, 2011, 51-66

Igwebuiké philosophical thesis is all about this. The fact that the action of another is able to trigger neural operations in me to the effect that I am able to see myself in the place or position of the person acting, thus making me draw forth conclusions as regards his action, only draws closer to the Igwebuiké thesis of the you in the I and the I in the you; the philosophical thesis of complementarity. Ekwulu notes this well as he says that

The term *ibe* brings out the reciprocity tension between the self and the other. The self is always implicated in the other. The self's reference to the other always points back to the self. I am, as it were, in the other and the other is in me. He is my piece as I am his piece. That which is different from me is 'my piece' or 'my other'. That which is different from us is part of us.⁵⁴

In the Igbo worldview, the other is referred to as *ibe*, which means 'a piece of' or 'a part of', as in *ibe anu* (a piece of meat) or *ibe ede* (a piece of cocoyam). The Igbo would, therefore, refer to the 'other person' as *ibe m* which means 'my piece' or *mmadu ibe m* (my fellow human being).⁵⁵ This notion is very well employed when referring to relationships and shows forth the mark of reciprocity. The "Igbo-verse boasts of phrases like love one another (*hunu ibe unu n'anya*), help one another (*nyere nu ibe unu aka*), respect one another (*sopuru nu ibe unu*), etc⁵⁶ which depicts how much of the *ibe*, is contained in the "*onwe m*".⁵⁷ According to Kanu,

Since the 'other' refers to my own piece, it would, therefore, mean that to love the other is to love oneself, to help the other is to help oneself and to respect the other is to respect oneself. Put the other way round, to hate the other is to hate oneself, to refuse help to the other is to refuse help to oneself and to disrespect the other is to disrespect oneself.⁵⁸

We could further add that the knowledge of oneself is the knowledge of the other, and understanding oneself is a stepping stone into understanding the other.

⁵⁴ B.I. Ekwulu, *Igbo concept of Ibe (the other) as a philosophical solution to the ethnic conflicts in African countries*, in B. I. Ekwulu (Ed.) *Philosophical Reflections On African Issues*, Delta Publishers, Enugu, 2010, pp. 183-192.

⁵⁵ A.I. Kanu OSA, *African Philosophy, Globalization and the Priority of Otherness*, in Igwebuiké. *An African Journal of Arts and Humanities Vol. 3 No 5*, July 2017, 92-109.

⁵⁶ Ibid.

⁵⁷ This refers to myself, and can be well construed as referring to the self.

⁵⁸ A.I. Kanu OSA, *African Philosophy, Globalization and the Priority of Otherness*.

The discovery of mirror neurons and of other mirroring mechanisms in the human brain shows that the very same neural substrates are activated when these expressive acts are both executed and perceived. Thus, we have a neurally instantiated we-centric space.⁵⁹ That is to say that our complementarity and communality is neurally orchestrated. Mirror neurons seem to bridge the gap between one agent and another; to represent 'my action' and 'your action' in the same way. Therefore, it has been suggested that mirror neurons are the key to explaining many aspects of social cognition, including the ability to understand the actions of others, to 'read minds', to imitate and to communicate using gestures and speech.⁶⁰ Via the input of the findings made by the MN research, we are beginning to find out more and more that *we are not so different after all*. The *Igwebuike* thesis, does not have the mathematical rigour of western science nor the biológico-scientific precision that the MN thesis, but it is deeply entrenched in the existential structure of the human person. It is the analysis of the human person's existential structure that has given birth to theories seeking to understand how the human person is conscious of the other. According to the *Igwebuike* philosophy, *Aka nri kwo aka ekpe, aka ekpe akwo aka nri*, that is to say that the right hand, which is conscious of itself, also acknowledges the left hand, not just in terms of its function, but most importantly in terms of its being-there, as much as the right hand is also a being-there makes emphatic the point that there lies an existential interconnection between the human self and the other (who is also a human self). This existential interconnection has its neural underpinnings as made known by the MN research. I am conscious of the other, because the other is part of me, is what *Igwebuike* depicts; I understand the action of the other, because there are certain neurons in my brain that mirror his activity, once the activity's process is initiated, is what the MN thesis depicts.

Conclusion

What we have said so far, here, does not negate the findings done by the MN research. We indeed are aware of the fact that the research is still on-going to make clear the postulations made by the MN proponents. What is being said here is that action understanding has more to do with the complementarity that exists between the human person and the other. And this is well enshrined in the *Igwebuike* philosophy. How would we thus define action understanding?

⁵⁹ V. Gallese, *Mirror Neurons, Embodied Simulation and the Neural Basis of Social Identification*, in *Psychoanalytic Dialogues* Vol 19, 2009, 519-536.

⁶⁰ C. Heyes, *Where do Mirror Neurons Come From*, in *Neuroscience and Biobehavioral Reviews* 34, 2010, 575-583.

Action understanding is cognizing an activity, on the part of a subject towards another subject (the object of observation) whose awareness arises from the complementarity that exists between both subjects, a complementarity that is both internal and externally situated. That is to say that this complementarity can be explained neutrally (internally), and existentially (Igwebuike, externally). Action understanding is thus, not entirely neural, but it is *existential*.

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