Human Body Gesture as Semantic Factor in Visual Education: A Review towards Design Language

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Abstract
This study is to review the relation and significant of Human Body Gesture as a factor of Semantic in Visual Design Education in the context of education for school and university learner. The main purpose is to provide an understanding of the feasibility and practicality of manipulating Human Body Gesture as semantic factor in the visual design process. Semantic is one of the creative consideration and judgement process that habitually practiced by successful designers and artist, and the discussion of the semantic factor is still relevance contemporaneously. Relating the human body gesture in visual semantic is one of the creative skill and imaginative approaches as visual design inspiration, by understanding the relation form and the design language. This research is expected contribute to help designer especially amateur and students to develop more value in visual design with accurate and outstanding meaning, and this will bring high prospective for Visual Design Education development.
Keywords: Body Gesture, Semantic, Visual Design, Form, Design Language

Introduction
In times of increasing and peaking development of creative arts technology, learning in the field of visual arts has moved too fast and progressively. With the development of fields, the various aspects and sub-fields have potential in excavate various further exploration knowledge spaces. The field of visual art is one of the area that has also become a part of the support chain for modern human development, which has proven to be able competently improvise the civilization of a developed country. Explorations in this field have enormous and pervasive potential when the increase of the number of designer and academician entering this field of studies as researcher, and the knowledge carried out by them are always fresh, innovative and prospective, and among the best explorations of creativity in visual art are through pragmatic, syntactic and semantic factors. As basic, these factors are not new in the field, in fact they have been widely and deeply practiced for decades, applied by designers and many artists. However, there is several gap on discussion upon the method and approaches to relate the form of human body gesture and the design language including the application on the practice, that make it open many research opportunities. Thus in this paper, the researcher attempts to present the alternative methods of manipulating the role of human body gestures in the context of visual aesthetics as a semantic factor in the process

of producing visual design that provide more understandable and vibrant meaning justification.

For this reason, the researcher is in endeavor to bring the study of this relationship through an observation and analytical study of human body movements, body expression and reactions, and human gestures in detail evolution chart study. Through the understanding of human body gesture, the researcher aim to simplify the understanding of this two relative factor, so that they can more easily understand how to produce more accurate an aesthetic design through the role of semantic evolution in providing visual meanings that are more specific, accurate, precisely relative and easily understood by a wide variety of audiences.

Basically, 'semantic' is a vital factor in visual communication. It plays a significant role in design education by acquaintance the relationship between form and design language. In design, every element has a purpose, and semantic factor is no exception. By incorporating body gesture as a semantic factor in visual design education, students will learn how to use it as a tool to communicate meaning effectively. They will understand how the manipulation of different body gestures can convey different emotions and messages, and how to incorporate those gestures into their designs to create more engaging and impactful visual images in design (Sunde, 2018).

Semantic Factor as Content of Visual Design

In discussing the relationship between a human body gesture and visual design, the researcher attempt to acquaint with the term of 'visual semantics', which is one of the subdivisions of study in design. The term of 'Visual Semantics' was introduced and developed by Krippendorff and Butter (1984) and they stated that "a study of symbolic qualities of-made shapes, in the cognitive and social context of their use". Therefore, Visual Semantics can be interpreting as connecting between audience and visual in terms of cognitive and emotions. Maybe unconsciously, some of the visualizer make an interpretation through shape, form, color, texture and others, in considering that the visualizations are important in capturing audience emotions and understanding, assessing the feasibility of a visual design in terms of appearance, functionality, production, feasibility, visual semantics, value and social factors (Johansen, 2001).

Semantics is also is a form of message delivery to audience through the use of shape, form, color, texture and others in design that can be interpreted as visual language as it relates the meaning and appearance of the design work (Liem, Abidin, and Warell, 2009). It might tell about the product itself or people whom using it. Through the design and its semantic contents, the product is expressing its value that are interpreted by a variety of purposes by different people. Therefore, through the design expression, acceptance or rejection happen in a certain social context. However, "the product, maybe through its semantic context and expression, either strengthen or weaken this role, in this way creating positive or negative perceptions, emotions, values and associations within the individual person" (Wikstrom, 1996).

What is more amazing about the study of visual semantic, the depiction and interpretation of a visual by human is always happen unconsciously as stated by Zhuge (2016), "Humans are specialized in recognizing pictures as they experience and reflect the physical space and build semantic image in mind". In addition, he said that "A distinguished characteristic is that humans generate a semantic image (including mental behaviors) different from the input. This indicates that the human mind uniformly processes various things at a certain cognitive

level. This indicates the possibility of creating a unified method for processing different objects such as texts, pictures, video and graphs."

Gesture, Semantic, and Meaning in Visual Art
As explained above that the analysis of human body gesture can be manipulated as reference factor in the process of making visual art through the role and understanding of the relation semantic – visual image. In short, it is essential for designer to comprehend the relation of human body gesture-semantic-meaning, as it consider the core of the study. In conjunction, there are rain of questions upon this complex relation, and one the frequent and crucial is, how to understand this language as a meaning content that can be portray in visual images. In general, some basic understanding on this relation is needed to make it easier for designers, especially students, to use ideas from the expression of human body gestures in their designs. As basic, Body Gesture can be classified into five (5) basic categories that give understanding to humans, a theory produced by McNeill (1985) namely deictic gestures, motor gestures, symbolic gestures (emblems), iconic gestures and metaphoric gestures. It is important to note that manual gesture in the sense of communicative co-speech gesture does not include the gesture-signs of Sign Languages, even though sign language is communicative and primarily produced using the hands, because the gestures in Sign Language are not used to intensify or modify the speech produced by the vocal tract, rather they communicate fully productive language through a method alternative to the vocal tract. All these 5 gesture act types have variations or differences of functions that are partially significant but some have something in common from a movement's formation, just different meaning and purpose. Overall, the goal of using this body gesture is the same as to provide expression, respond and information to respondent or audience.

As examples, there are several well-known design experts who have used semantic aspects in their designs. For example, Don Norman is an expert in user experience design and also an expert in cognitive science. Norman often uses semantics in product design by taking into account symbols and user-relevant meanings. In addition, Paul Rand, a well-known graphic design expert, also uses semantics wisely in logo design to give a strong meaning and identity to a company or product. Most of their design is widely being as references to other designer in approaching better design for the best result.

Figure 1 : Donald A. Norman and Paul Rand established design.

As a basic understanding, researcher brings readers to a couple of examples of basic understanding of the human body expression through a number of works and products that have successfully gained attention and recognition, where these works have semantic aesthetics that mean something that the audience can understand. Images displayed under Figure 2 are a sculpture built by Henry Moore (British, 1898-1986) made of bronze material, displaying the image of a mother and child in a relaxed and leisurely state, even if not built with a clear and realistic image. A semi-abstract image in the form is visualized by the audience where they can easily recognize and depict what the object is as well, and how it feats a visual taken through the object proportion and formation.

Figure 2: Reclining Mother and Child, 1975, by Henry Moore (British, 1898-1986)

By this fascinating sculpture, Moore shuns one-sided, simplistic concepts of motherhood for a more complex, ambiguous image. As Alan Bowness has written of this mature period, "Moore's sculptures have indeed become increasingly concerned with human relationships. It has always been a major preoccupation, from the earliest *Mother and Child* sculpture, but it seems to me that what we are offered in the late works is a paradigm of the human relationship, with the figures groping, touching, embracing, coupling, even merging with each other" (Bowness, *1977*). In addition, Moore intended these pieces to be displayed outside, emphasizing the connection between nature and sculptural forms. The biomorphic elements of this work reflect the shapes of the outdoors surrounding it, while the open composition integrates nature into the work itself. Ultimately, the complexity of *Draped Reclining Mother and Baby* attests to Moore's artistic talent. He is able to combine numerous elements--vitality, sensuousness, anxiety, serenity--into a cohesive whole, offering a view of a mother and child as a universal symbol of human relationships. The composition itself, the smooth, flowing lines juxtaposed with the gaping holes, reinforces the complex set of emotions it contains.

In the study of painting work as well, the researcher brought an example of a local Malaysian work, Yusof Ghani through the Tari Series (1993), a work that implies the malay traditional dance art in the abstract style, but it can still be identified by a sense of visual gesture. In this artwork, the painter recorded a dancer's movements in a variety of movement styles through simplified gesture line and brush stroke that brings expression, mood and feeling, interpretation and artistic philosophy related to the dance inspiration. The gesture line represented on the canvas is not only an unsubstantiated, but a well-planned and structurized

act rests upon the human body gesture line in a dance movement. Through this great work, the audience is simply can interpret and make judgement through semantic-based understanding.

Figure 3: Tari Series (1993) painting artwork by Yusof Ghani (Malaysia, 1950-recent)

In modern design, there is another example of semantic approach in product design, through a design of a home teapot, an inspiration from the leaf-appearance concepts and it was successfully designed by a designer named Chad Graffith from Auburn, America, with product name, Lea. The design clearly illustrate the nature relation through a clear design form that is adapted from the shape, proportion, and color of leaves. It clearly stimulating users about calmness, serene, and nature feeling.

Figure 4: A design of home teapot, named Lea, designed by Chad Graffith.

4. Body Gesture as basis of visual design approaches

Once understanding how the human motion might impact the development of visual art, one more important question is how we can adapt that sense of the human body gesture in developing a visual arts images, especially among students and amateur designer, so that they can produce a design which is essentially understood by an audience or users in general.

Basically, the human body gestures can be of five categories; **Deictic Gestures**, **Motor Gestures, Symbolic Gestures (emblems), Iconic Gestures and Metaphoric Gestures** . Designers can choose the appropriate gesture as inspiration based on the meaning and intentions he want to portray in design. The figure below showing the types of basic body gesture in a table with basic brief of understanding.

Figure 5: Table of Body Gesture Category.
Source : https://www.ideo.com/blog/why-gesture-is-the-next-big-thing-in-design

Throughout these five categories of body gesture, it is easier to understand in structure of how to implement the inspiration of the body gesture in visual design practice, by constructing a well-organized evolution of images in chart. By doing some research, this paper explaining the necessary method and approaches that can be applied by designer to implement their idea and inspiration from human body gesture, by doing the steps of gesture line evolution, relating the semantic meaning and creatively convert into the new form/shape with meaningful aesthetic.

4.1 Deictic Gestures
Deictic gestures are produced to direct a recipient's attention towards a specific referent in the proximal or distal environment. The pointing gesture is the main representative of this category and it can fulfil several communicative functions. Deictic gestures are those that are used to point to or indicate something, such as pointing to a specific object in the room or indicating a specific direction. These gestures are often used in combination with spoken language to help convey meaning. Generally Deictic gesture consist of 3 types ; imperative, declarative & epistemic. All this type of Deistic Gesture can fulfil several communicative functions in proper way. In general, Deictic is an act of language style that aims to attract attention and give instructions in order to communicate with an idea, object, or location. Examples of deictic gestures include pointing your finger in a specific direction to indicate where something is located, using your hand to indicate a particular person in a group, or tapping your watch to indicate that it is time to leave.

In short, the process of converting deictic gestures into visual art is to use them as a starting point for creating interactive visual. For example, an artist might create a series of paintings or sculptures that depict different types of deictic gestures, highlighting the ways in which they are used to communicate meaning. In addition, deictic gestures can be incorporated into other types of visual art, such as film, animation, or graphic design. For example, animators might use deictic gestures to help animate characters and convey meaning in a more subtle and nuanced way than spoken dialogue alone. By the images from the gesture that exposed in the chart below, it is proven that the basic line of the gesture can be derived as to bring meaning, and it can be evolved to the new ideas in a form of semantic visual image.

Diagram 1: Deistic Gesture of Semantic Design
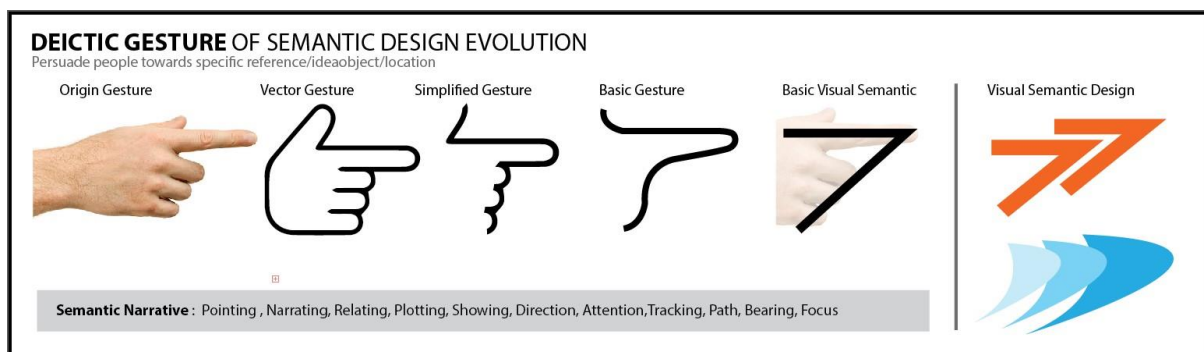
In the chart above, the researcher showing to the audience the initial process of converting the origin gesture image, a pointing hand, into vector gesture as to make it more clear in vector shape. From that step, researcher simplify the vector shape by removing all unnecessary line that not giving the sense of meaning, and as to make it more justified, the basic gesture is captured properly in a single line without losing the meaning/expression. By this basic line, the basic of visual semantic images can be derived significantly as a preliminary point of creative thinking. As result, many ideas can be designed creatively with bringing the semantic element for the final art/design work.

4.2 Motor/ Beat Gesture

Motor or Beat gestures usually consist of short, repetitive, rhythmic movements that are closely tied with prosody in verbal speech. Unlike symbolic and deictic gestures, beat gestures cannot occur independently of verbal speech and convey no semantic information in language, but still possible in visual images. It also considered as a physical movements that are used to communicate meaning. These gestures are often used to express emotions or to provide emphasis information to spoken language. Examples of motor gestures include waving hello or goodbye, nodding your head to indicate agreement or approval, shaking your head to indicate disagreement or disapproval, and shrugging your shoulders to indicate uncertainty or confusion.

Motor gestures can also be used to convey more complex emotions or meanings. For example, a person might clench their fists or grit their teeth to indicate anger or frustration, or place their hand on their chest to indicate sincerity or authenticity. One important thing to note about motor gestures is that they are often culturally specific. What might be considered an appropriate way to express a particular emotion in one culture might not be understood or might be considered inappropriate in another culture. Despite this cultural variation, motor

gestures remain an important part of human communication, and they can be used to convey meaning in situations where spoken language might not be enough.

Same as the process of evolution sketches that shown in the Deictic Gesture diagram above, the process of evolution sketches for Motor Gesture was captured as diagram below.
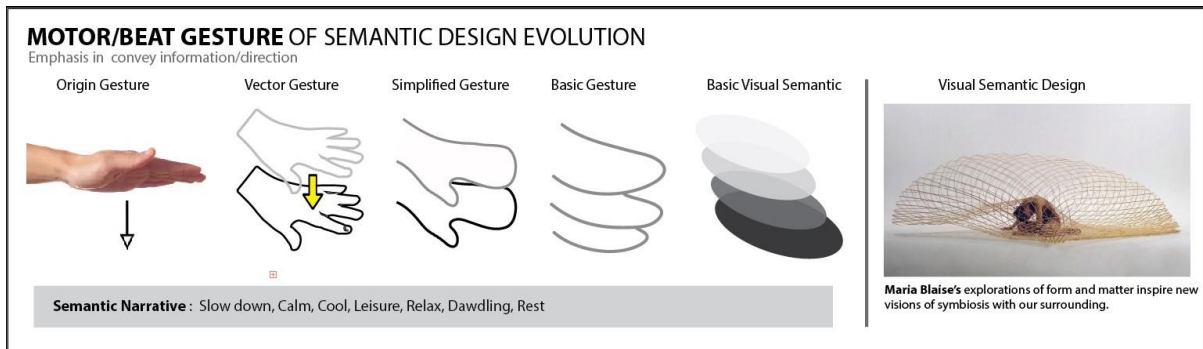

Diagram 2: Motor/Beat Gesture of Semantic Design

4.3 Symbolic Gesture

A Symbolic Gesture is a form of nonverbal communication made with movements of the hands or a change in body posture to express a feeling or idea. It is a physical movements that represent an abstract idea or concept. These gestures often have cultural or social significance and are used to convey a specific meaning or message, and can vary widely across different cultures and societies as well. What might be considered a meaningful gesture in one culture might not have any significance in another culture. Examples of symbolic gestures include crossing your fingers to indicate good luck, making a heart shape with your hands to indicate love, or placing your hand over your heart to indicate patriotism or respect. One interesting aspect of symbolic gestures is that they often involve using the body to create a visual image or symbol. This can be a powerful way of conveying meaning, as it allows the person making the gesture to communicate an idea or concept in a nonverbal way. As mentioned by Hasan (2018), he quoted that "Symbolic gestures are the hand postures with some conventionalized meanings. They are static gestures that one can perform in a very complex environment containing variations in rotation and scale without using voice. The gestures may be produced in different illumination conditions or occluding background scenarios". As practice, the diagram below explaining the process of visual evolution as shown before.
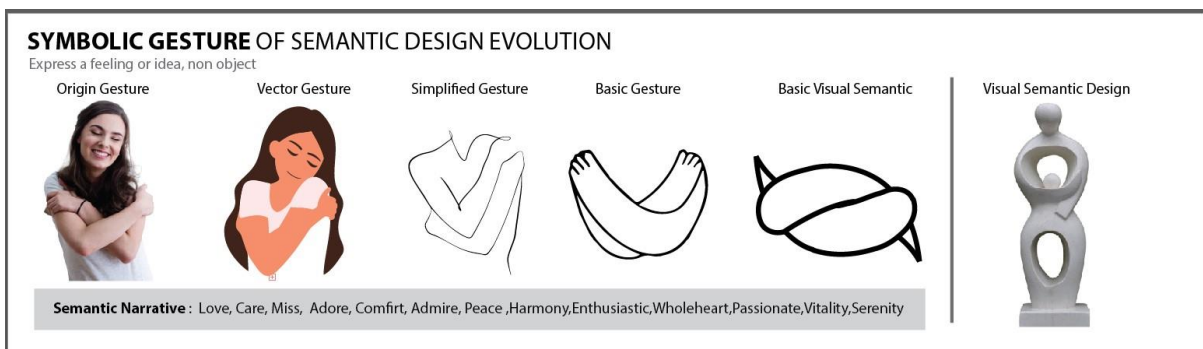

Diagram 3: Symbolic Gesture of Semantic Design Evolution.

4.4 Iconic Gesture

An iconic gesture is a type of gesture that imitates or represents an object or action. For example, if you use your hand to mimic the shape of a bird when you're talking about birds,

that's an iconic gesture. Another example would be pointing to an object while you speak its name. Iconic gestures are often used to enhance communication and help convey meaning. They can be particularly useful in situations where there may be a language barrier. By using an iconic gesture, you can help ensure that your message is understood, even if the person you're speaking to doesn't speak the same language as you.

Iconic gestures are a type of nonverbal communication that can be used to supplement or reinforce spoken language. They often involve using your hands and body to mimic or symbolize an object, action, or concept that you are talking about. For example, if you're describing the size of a fish that you caught, you might use your hands to show how big it was. Another example would be using a chopping motion with your hands to signify cutting something. These gestures can be especially helpful when communicating with someone who may not share your language or cultural background, as they can help to clarify your meaning. Additionally, research has shown that using iconic gestures can actually help to improve memory and comprehension of what is being said

iconic gestures can be converted to visual images. In fact, many iconic gestures are already visual representations of the objects or actions they signify. For example, making a circular shape with your thumb and index finger to represent the concept of "okay" is a visual representation of the idea of something being acceptable or approved. Similarly, holding your hand up to your ear to indicate that you want someone to speak louder is a visual representation of the concept of hearing. In some cases, iconic gestures can be turned into more complex visual images, such as diagrams or drawings, to help further illustrate a point.
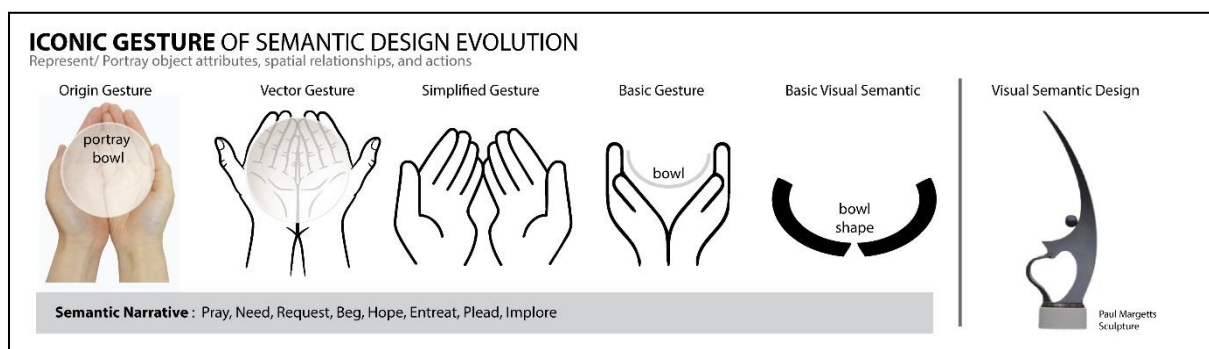

Diagram 3: Iconic Gesture of Semantic Design Evolution.

4.5 Metaphoric Gesture

With slightly different, Metaphoric Gesture is a type of body movement that is used to represent or describe a concept or idea indirectly, often through a physical movement or position that does not resemble the object or action being referred to. In other word, it also described as the action that use physical movements to represent abstract concepts or ideas, such as holding your hands up to indicate that something is "big" or "important." These gestures can be a powerful tool for communicating complex ideas in a simple and intuitive way. For other example, raising both arms up and swinging them forward to indicate victory or success, or crossing your arms to indicate disagreement or tension. These types of body movements are metaphorical, as they use physical movements or positions that are not directly related to the concept or idea being conveyed and require interpretation by the receiver. Metaphoric gestures are often used in formal situations such as presentations or speeches to highlight or illustrate underlying concepts, ideas, or emotions.
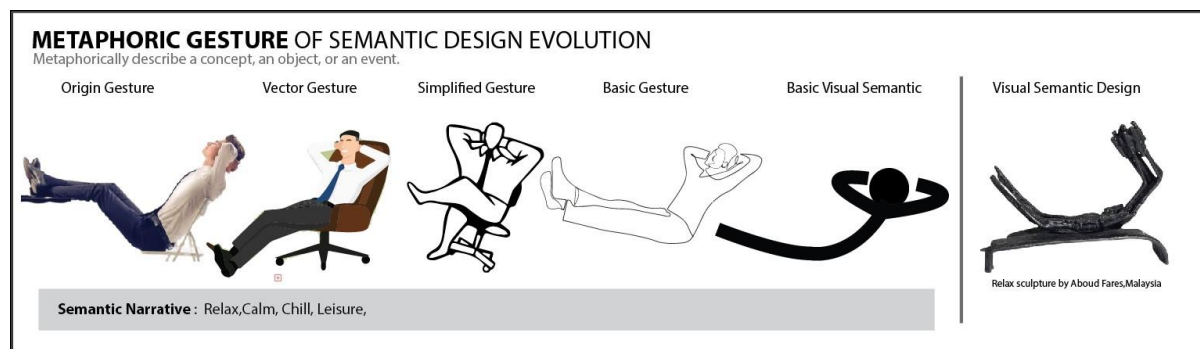
Diagram 5: Metaphoric Gesture of Semantic Design Evolution.

To be easily understood, expressing a design of aesthetics by bringing semantic value requires a structured plan in process in order to produce a high quality result of idea, as expected. Through all five evolutionary diagrams shown above which clearly and easily understood, at least 5 steps of evolution are needed to obtain a basic form of visual semantic. It starts with Origin Gesture as a basic inspiration of semantic, and creatively converted into a Vector Gesture, through a graphical drawing process using computer software, in order to get a better visual image. The next step is to summarize the vector's image to Simplified Gesture by removing unnecessary lines, colors, shapes, and spaces in the simplest image, black and white line.

A harder process in this critical evolution is to digest this tangle gesture drawing (Simplified Gesture), and minimize it into Basic Gesture, which is a sharp reflection and observation is needed to get the a veracious line, shape or form with the intention of the semantic meaning that conveyed isn't lost, even it easy to recognized. With that clear Basic Gesture that was captured, the designer will be able to construct the most important visual in process, the Basic Visual Semantic as a point trigger to explore hundreds of idea sketching and ideation for Visual Semantic Design, with appropriate denotation conveyed.

Conclusion and Recommendation
A Semantic Factor in design certainly plays a very important role in attracting audience from various backgrounds. In general, there is no specific way to examine and express these semantic relationships. However, the proposed method can be applied to give understanding in semantic meanings. As explained above, the relationship between the human body gesture and visual design as semantic factor is greatly proven. They are mutually needed to produce a significant visual to the audience, to determine the value of a visual design. Origin forms must be addressed prior to study so that it is suitable to be applied in the design and if the origin form does not coincide with the purpose or expression to be served, then a design would not be able to attract audience ,even give understanding.

When asked if there is a specific method on how to connect the gesture and visual, then the answer is it depends on the designer's creativity and self-understanding based on their research and design process experience. Finally, this paper hopefully can open the designer's mind in their design development process and can also contibute in design education as a cognitive strategy in the learning design process.

As recommendation, the researcher indicate that making visual design, designer should be mindful of evolutionary psycology as well as human body gesture understanding. To transfer visual language into design, a process of looking for semantic factor has been suggested.

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