



Logical Brain Process for Dance Choreography

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Abstract

Humans are born with both hemispheres of the brain. Process information about awareness each side receives sensory input from the opposite side of the body. Movement control signals that the brain sends to the body to cause movement. which right brain is the part that will serve the imagination Creativity, dreams, new ideas, quirky, immersed in music and art, and how people can come up with new ideas. Being able to create things is caused by the combination of the right brain and the left brain. It is part of the control of thinking, logic, working out in concrete form to create beautiful dance choreography for Dance Choreography.

Keywords: Logical, Brain Process, Dance Choreography, Imagine creative.

1. Introduction

The National Academy of Sciences Colloquium “Brain Produces Mind by Modeling” was held May 1–3, 2019 at the Arnold and Mabel Beckman Center of the National Academy of Sciences in Irvine, CA. It was organized by Richard M. Shiffrin, Danielle S. Bassett, Nikolaus Kriegeskorte, and Joshua B. Tenenbaum. The theme of the colloquium and the foundation for the set of articles in this issue of PNAS is that the “mind” consists of a model formed by the “brain”: This would be a model of the entire environment, including the self, the body, the physical environment, other agents, and the social environment. Furthermore, the model would be a best guess about the most likely state of this environment. It uses this model to learn, decide, attend, remember, perceive, predict, and produce action. This model develops as the brain matures, rapidly during infancy and more slowly later. It has structural components that remain stable over long times. It has labile elements that change at multiple time scales, adapting to the current environment and goals. The mind’s formation through modeling of the world might be likened to the way scientists build models: through a combination of experiment (interaction with the world) and theory (thought))A.H.S.Chan.,1996(

2. The Left Brain, Right Brain Model

The concept of the left brain, and right brain model is that the brain is divided into two hemispheres and that one of those hemispheres is “dominant”. Thus the idea is that a left-brained person may be more logical and objective and a right-brained person may be more intuitive and subjective.

The theory comes from the work of Roger W Sperry, the Nobel Prize Winner, his research into epilepsy showed that separating the two hemispheres of the brain would reduce the instance of epileptic fits. However, a side effect was that it appeared that the communication pathways of the brain were also affected by this with patients discovering that they could use words processed by one side of the brain but not by the other. Thus the conclusion is that logic and language are mainly on the left of the brain and visual and spatial information are dealt with on the right.

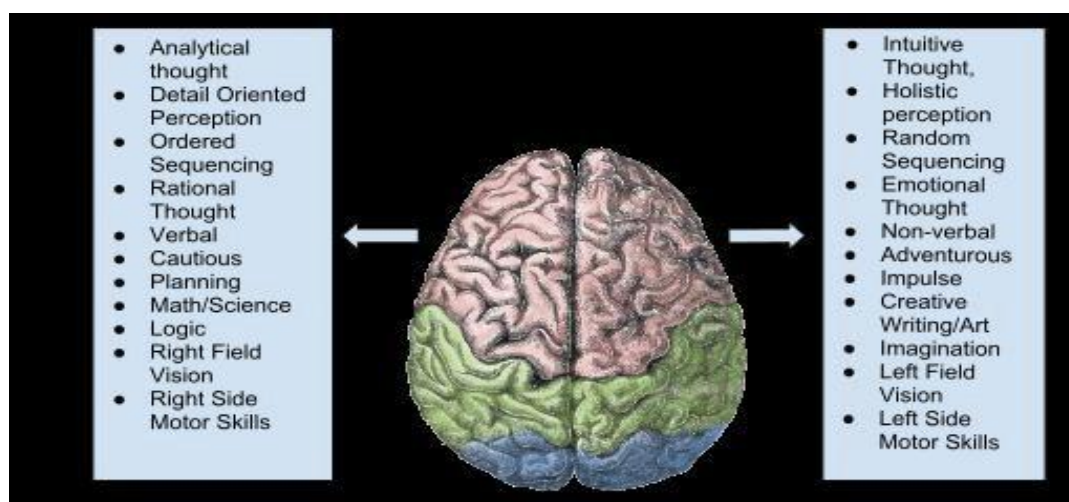


Figure 1: Chickensaresocute. Copyright terms and licence: CC BY-SA 3.0

Source: <https://www.interaction-design.org/literature/article/three-common-models-of-the-brain-to-help-you-develop-better-user-experiences>

It's worth noting that current research shows the brain works best in cooperation between the hemispheres. There's no absolute hemisphere for one kind of processing over another. Given that the theory isn't accurate why is it still of use? It's because there are lessons to be learned from it. If we can identify our strengths and weaknesses, we can learn to play to our strengths and work on our weaknesses; in design, it's helpful to know which group we are catering to with content or design so that we compensate in other places to cater to the other group.

3. Logical Thinking

Logical Thinking (Nunes, T., Bryant, P., Evans, D., Bell, D., Gardner, S., Gardner, A., et al. ,2007). It is very important to observe and analyze the differences that are not the same as before. By thinking to see a clear picture. Then assess the impact on future outcomes. Create a cause-and-effect relationship. of the impact that will occur with a holistic look to find the best way to achieve the desired goals It is like combining many ideas together in the whole thought process to solve problems & achieve goals. Thinking outside the box (Lateral

Thinking) is the creation of a mindset (Mindset) that is creative with various events and situations. With a positive perspective (Positive Thinking) to overcome the evil enemy that keeps building our thinking wall. And always create new ideas as an alternative to solving problems, not only creating new ideas (Idea) but also creating new perspectives that are not the same in looking at problems causing a concept that is independent of the original idea completely.

3.1 The fundamentals of thinking consist of 3 key elements

1. Characteristics of the thinker that human beings are able to different thinking need to rely on factors which is the basis starting from the thinker himself must have characteristics conducive to thinking, such as the normality of the brain's emotional maturity and relies on available information various experiences.

2. The stimulus is the stimulus that motivates the thinker to pay attention, observe, contemplate. To create a thought process thinking will happen when the sense of perception is received stimulus from stimuli which the brain chooses to recognize what stimulates it the stimulus that happened may be various indirect environments obtained from people, animals, things, needs, and events.

3. Media and devices for thinking Imagination and equipment that help support the idea of thinking up, such as the shape of geometry. A computer program that is a support that causes thinking skills, etc.

3.2 While thinking, the human thinking apparatus consists of 3 parts

A: Images represent the experiences of objects or thinkers, and may be generated through the eyes or ears.

B: Language is important in the process of problem-solving thinking, as it is the medium of human thought.

C: Symbols, such as mathematical symbols, are used as symbols or representations for event objects and actions. Gestures, nods, shakes.

4. Creative thinking

The creative process refers to the sequence of thoughts and actions that characterizes the generative act, resulting in an original, valuable production (Lubart, 2001). This act has traditionally been decomposed in terms of stages, steps, or sub-processes (Sternberg, 2017). Early work based on introspective accounts of eminent creators and observational studies using think-aloud protocols or analyses of traces of activity (such as creators' notebooks or drafts), suggested four main stages, traditionally labeled, preparation, incubation, illumination, and verification. Preparation refers to the accumulation of background knowledge and active thinking that may span a relatively long period when a topic is engaged. Incubation notes a type of mental activity in which ideas may be associated, explored in the fringe of consciousness, or reworked in the "back of one's mind" (Sio & Ormerod, 2009). Illumination is the "eureka" moment when a promising, new idea appears. This may in some cases be called an insight and is marked in particular by the novel nature of the idea that emerges. Verification is usually considered a mode of thinking in which new ideas are tested and refined. Numerous authors have proposed and examined additional steps,

sub-processes, or modes of thinking, including problem-finding, problem formulation, frustration, divergent thinking, association, idea resonance, benefiting from chance events, analysis, and synthesis (Yokochi & Okada, 2005). All of these have enriched and expanded our understanding of the creative process. (Wallas, G.,1926)

1. Preparation: In this stage, the thinker formulates the problem and collects the facts and materials considered necessary for finding new solutions. Many times the problem cannot be solved even after days, weeks or months of concentrated efforts. Failing to solve the problem, the thinker turns away from it initiating next stage.

2. Incubation: During this period some of the ideas that were interfering with the solution will tend to fade. The overt activity and sometimes even thinking about the problem are absent in this stage. But the unconscious thought process involved in creative thinking is at work during this period. Apparently, the thinker will be busy with other activities like reading literature or playing games, etc. In spite of these activities, the contemplation about finding a solution to problem will be going on in the mind.

3. Illumination: Following the period of incubation the creative ideas occur suddenly. Consequently, the obscure thing becomes clear this sudden flash of the solution is known as illumination and is like an 'aha' (eureka) experience.

4. Verification: Though the solution is found in the illumination stage, it is necessary to verify whether that solution is correct or not. Hence in this last stage evaluation of the solution is done. If the solution is not satisfactory the thinker will go back to the creative process from the beginning.

However, the human brain constantly reorganizes itself. It's adaptable to change, whether it's physical or through life experience. It's tailor-made for learning.

5. Dance Choreography

Lynne Anne Blom and L. Tarin Chaplin wrote a book about "The Intimate Act of Choreography" In 1942 said; Many people have beautiful, creative ideas for dances, but few of these are ever realized as choreographic entities. One of the main reasons for this is that it is hard to know how to get from the idea, the flash of insight or inspiration, to the fully completed presentation. You do not learn to choreograph by reading about it, hearing about it, or watching the major companies in concert. You learn by choreographing, by experimenting, by creating little bits and pieces and fragments of dances and dance phrases, by playing with the materials of the craft over and over again until they become second nature. You learn by getting your ideas out and into movement, onto a body (yours or someone else's), giving your dance an independent existence. But where does one begin? and how? Can choreography be taught? Every book on creativity, after paying respect to the flash of insight, discusses discipline and technique of the craft, and the craft of choreography, like a symphony, includes a wide range of parts.

The choreographic phrase is often confused with movement combinations. Most dancers have taken technique classes before beginning to choreograph and often assume that the short movement combinations that they've been learning (as in across-the-floor sequences) are the same as choreographic phrases. Movement combinations can be merely

movements strung together like beads, without notice of their individual shape, color, texture, or relationship to one another. Like letters from a Scrabble set, they can be spilled end-to-end without rhyme or reason, spelling no words, having no aesthetic validity. This may work for drilling techniques, but it is not choreography. The purpose of a movement combination is to provide a technical challenge such as coordination skills, strength development, endurance, or spatial discrimination. A choreographic phrase, however, has a different intention-to convey feelings, images, ideas, to present visual impressions, a story, symbol, or design element. Regardless of what intention it may have, a choreographic phrase has a personality, an identifiable movement "face." The phrase has an "ishness" (as Carol Scotthorn would say). It is about something. With or without actual meaning, it is expressive; it has flesh, whereas a movement combination often has only bones. A choreographic phrase seeks to touch the viewer, to communicate a sense, vision, idea, style, texture, or quality. It has an attitude about it, an aura of uniqueness, a selfhood. Ideally, movement combinations can and should be choreographic phrases, well formed, aesthetic, and technically challenging. However, when first asked to do choreographic studies, students sometimes (rather innocently) produce "techniquey" movement combinations instead. It is important to clear up this discrepancy in the early stages of a choreographer's education.

A body exists in space ... moves in space ... is contained by space. A dancer's place and design in space, the direction and level she moves in, and her attitude toward the space, all help define the image she is creating. Her focus and the way she shapes space are integral parts of the space. Space is the 3-D canvas within which the dancer creates a dynamic image. Breaking it down into component parts brings a wealth of possibilities for movement exploration. Space can be considered as an active participant, an abstract partner. What beginning dance student hasn't played with the space that is closing in on her? Yes, movement can make an empty, dead space into a dynamically pulsating one. Mary Wigman repeatedly used space as an active element, sometimes as an opponent. She went even further, actually defining dance as motivated tension in space and as a creator of space. Murray Louis introduces space in his *Dance as an Art Form* film series by saying, "In its basic form, space is a void-silent, sterile, innocent-before consciousness, before life." A choreographer must fill and mold that void.

6. Dance rhythm

Remember that each section (a,b, or c) represents a simple phrase, not a long, involved sequence. Keep it short-about ten seconds for each one.

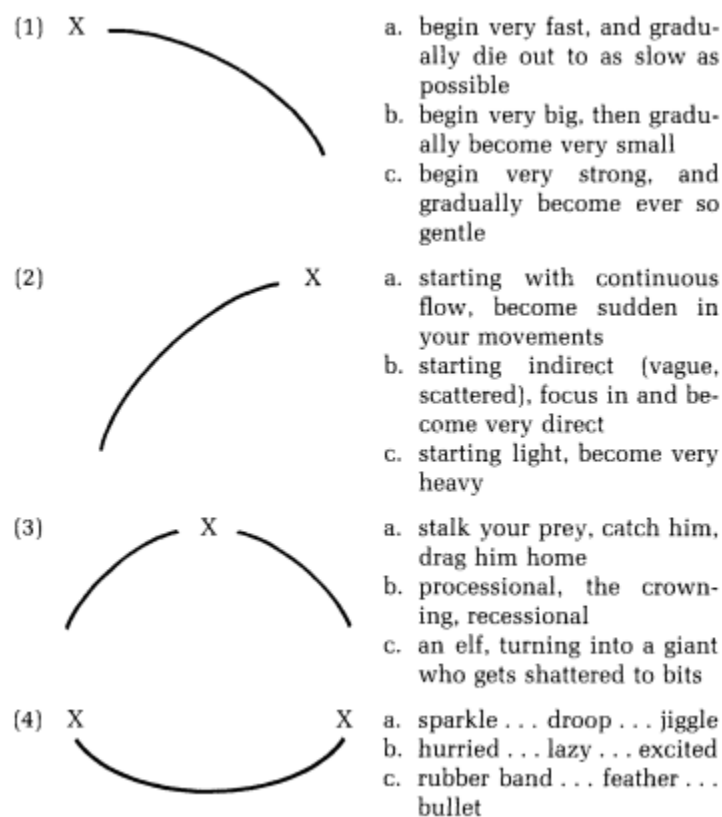


Figure 2: Improve: High Point

Source: *The Intimate Act of Choreography*, p.28.

From the interview; Jamar Roberts stands still, all six feet and four inches of him, arms quietly at his sides. As a man's voice is heard—the first two words of text are “Black is”—Roberts steps into a wide stance, arms held out to their fullest wingspan. He fills every inch of the stage with his presence. Then he begins to lower both arms, slowly curving them inward. As if by the flip of a switch, on the words “oh my god,” he flexes his wrists, twists his torso, and curves into a deep backbend. His body responds as if an electric current were going through it. A lot of these dynamics radiate from the power and malleability of his back. “That’s where the movement starts from, the intent of it,” says fellow Alvin Ailey American Dance Theater dancer Ghrai DeVore-Stokes. “Watching him is amazing because you learn so much about yourself and about dance.”



Figure 3: Jamar Roberts' Astonishing Dancing

Is Matched By His Mesmerizing Choreography

Source: <https://www.dancemagazine.com/jamar-roberts/>

7. Choreographers' motives and methods

When choreographers set out to create new works, or possibly rework traditional dances, their impulses or motivations for doing so vary widely. It may be that a particular dance has a function to fulfill, such as marking a celebration, embellishing an opera, or praying for rain. It may be that the piece has no specific function and that the choreographer is simply responding to an outside stimulus a piece of music that has suggested a structure or movement, perhaps, or a painting, a theme from literature, or possibly a particular dancer that the choreographer is interested in working with. Or the stimulus may be the choreographer's desire to express a particular concept or emotion or a fascination with a particular choreographic idea. Such stimuli may, of course, influence the work even if the choreographer is producing it for a specific purpose, though, as with any artist, it is rare that a choreographer's motives and intentions can be clearly analyzed particularly during the actual working process.

The methods by which different choreographers create their work also vary. Some work closely with the dancers from the beginning, trying out ideas and taking suggestions from the dancers themselves before pulling all of the material together. Others start with clear ideas about the shape of the piece and its content even before going into the studio. The 19th-century Marius Petipa (1819-1910) French ballet dancer and choreographer used small models to work out the groupings of his dances. The amount that any choreographer can do without dancers is limited, because the notation of dance is relatively undeveloped. Whereas a composer can write a complete symphony without meeting the orchestra that is going to play it, dance notation is mostly used in recording rather than creating dances (see below Dance notation).

The three-phase choreographic process the choreographic process may be divided for analytical purposes (the divisions are never distinct in practice) into three phases: gathering together the movement material, developing movements into dance phrases, and creating the final structure of the work.

Gathering the movement material the way in which the choreographer accumulates movement material depends on the tradition in which he or she works. In certain dance forms it may be simply a question of creating variations within a traditional pattern of movements. For example, dancing masters in the Italian courts of the 14th and 15th centuries simply invented variations on existing dances and published them in dance manuals bearing their own names. Even today many ballet choreographers use as raw material for their pieces the traditional steps and enchaînements that dancers learn in class. The same is true for many of today's performers of Indian or Middle Eastern dance forms; they may not strictly follow the traditional structure and sequence of movements passed down to them, but they remain faithful to their characteristic styles, retaining the traditional quality of movement and not introducing steps or movements widely different from the original.

8. Conclusion

Humans are born with the left brain. It is part of the control of logical thinking, with concrete functions such as arithmetic, telling time, counting, word acquisition, reasoning, and the right brain. Is the part that will serve the imagination creativity, dreams, new ideas, quirks, immersion in music and art, and the ability for people to come up with new ideas? Being able to create things is caused by the right brain. creativity arises from doing. The left and right hemispheres work together. Therefore, the human brain is divided into two hemispheres by the corpus callosum which is the left hemisphere and the right hemisphere. Each of them has different roles, with the left hemisphere responsible for language, Logical Thinking, Critical Thinking, Numbers, and Reasoning. The right hemisphere is associated with Self-awareness. empathy, trust, emotion, nonconscious communication, attachment, and facial expressions. (Recognition of Emotional Faces) While humans are thinking, the two hemispheres of the brain are linked to work together.

One of the main reasons for this is that it is hard to know how to get from the idea, the flash of insight or inspiration, to the fully completed presentation. You do not learn to choreograph by reading about it, hearing about it, or watching the major companies in concert. You learn by choreographing, by experimenting, by creating little bits and pieces and fragments of dances and dance phrases, by playing with the materials of the craft over and over again until they become second nature. You learn by getting your ideas out and into movement, onto a body (yours or someone else's), giving your dance an independent existence.

However, Logical Brain Process for Dance Choreography remembers that each section (a,b, or c) represents a simple phrase, not a long, involved sequence. Keep it short-about ten seconds for each one for Dance rhythm so are beauty.

References

1. A.H. S. Chan, A. J. Courtney.(1996). Foveal acuity, peripheral acuity, and search performance: A review. *Int. J. Ind. Ergon.* 18, 113–119.
2. Marius Petipa.(2019). *The Emperor's Ballet Master*. Oxford University Press. United Kingdom.p.12-15.
3. Nunes, T., Bryant, P., Evans, D., Bell, D., Gardner, S., Gardner, A., et al. (2007). The contribution of logical reasoning to the learning of mathematics in primary school. *British Journal of Developmental Psychology*, 25, 147–166.
4. Lynne Anne Blom and L. Tarin Chaplin.(1982). *The Intimate Act of Choreography*. University of Pittsburgh Press. United States.p.29-35.
5. Lubart, T. I. (2001). Models of the creative process: Past,present and future. *Creativity Research Journal*, 13(3–4), 295–308. doi:10.1207/s15326934crj1334_07.
6. Sio, U. N., & Ormerod, T. C. (2009). Does incubation enhance problem solving? A meta-analytic review. *Psychological Bulletin*, 135(1), 94–120.doi:10.1037/a0014212.
7. Sternberg, R. J. (2017). A straight-A model of the creative process and its relation to intelligence. *Journal of Creative Behavior*, doi:10.1002/jocb.223.
8. Wallas, G. (1926). *The art of thought*. New York, NY: Harcourt, Brace and Company., p.145-147.
9. Yokochi, S., & Okada, T. (2005). Creative cognitive process of art making: A field study of a traditional Chinese ink painter. *Creativity Research Journal*, 17(2–3), 241–255.doi:10.1080/10400419.2005.9651482.