Understanding the software of the mind, self, and culture: Analysis of the secrets to happiness, health, and long life

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ABSTRACT

This article examines the software of the mind, self, and culture that can explain the secrets to happiness, health, and long life. First, this article outlines the assumption of objectivity in science, and the importance of understanding the subjective and creative aspects of science. Second, Albert Bandura's Social Cognitive Theory is introduced, providing the basis of understanding human creativity and software of the mind. He articulates the importance of understanding the precursors to human creativity and action: Intention, forethought, self-reflection, and self-reaction. Third, the understanding of the software of the human mind from the Western perspective is provided. Fourth, the East Asian perspective and Confucianism that emphasize the relatedness and connectedness of the self to others are introduced. Fifth, an understanding of how culture is socialized in children and the development of the self in East Asia are outlined. Sixth, the limitations of the traditional biological models in explaining the software of the mind, self, and culture are outlined by reviewing the scientific advances in epigenetics and neurobiology. Seventh, the economic, social, relational, and psychological factors explaining the secrets to happiness, health, and long life are outlined. Finally, the phenomenology behind the knowledge creation and the discovery process and the implications of the digital revolution for the Gen Zs are reviewed.

To communicate to a transdisciplinary audience, I have used a conversation style reducing the technical terminology and excessive referencing. To aid in understanding of the phenomenology and context, I have used figures, diagrams, paintings, and photos. These photos, paintings, and diagrams have been accessed from the public domain (e.g., wikipedia.org) and old photos and paintings that are not copyrighted). Parts of this are based on Kim and Kim (1995, 1999, 2001; Kim & Kim; 2022, 2023) articles.

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I. Introduction

Peter Drucker, the father of modern management, points out that the basic *assumptions* about the reality and truth provide the foundation for the scientific paradigm, theories, concepts, and methods (Drucker, 2001). The basic assumption is the axiom that becomes the basis of algorithm in theories, concepts, and methods. Once the basic assumption is accepted, it is used to define the field and discipline. These assumptions influence and determine what is considered important and accepted as evidence, and are used to differentiate them from what is viewed as noise, irrelevant, or exceptions. Once the basic assumptions are accepted, self-evident and true, the fundamental assumptions of the dominant paradigm are rarely questioned or challenged (Drucker, 2001).

In natural sciences, the basic assumptions, algorithms, and corresponding paradigms do not affect the workings of the natural world and universe (Drucker, 2001). The medieval Catholic church believed that the earth is at the center of the universe (e.g., geocentric view) by accepting Aristotle's cosmology. Copernicus proposed the heliocentric view with the sun at the center, and the earth and planets revolve around the sun. These two differing assumptions and worldviews do not affect the actual planetary motion, but they have tremendous impact on the power to define and the power to control people's beliefs and lives (Chorover, 1980). The basic beliefs have profound influence on the behavior of people, institutions, and cultures since the power to define gives a select group of people the power to control.

Although the physical universe has not changed for centuries, the Renaissance, Age of Reason, and scientific discoveries have changed our understanding of the natural and human world. This understanding brought about the scientific and industrial revolution

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that have transformed how we live, relate to others, and co-create. The development of science has created another assumption that needs to be question -the belief in the objectivity of science. As Wirth (1946) observes, "the most important thing...that we know about a person is what he takes for granted, and the most elemental and important facts about a society are those things that are seldom debated and generally regarded as settled" (p.xxiv). Many people believe science as representing objective reality, when it actually represents our best approximation of our understanding of the reality.

II. Assumption of Objectivity in Science

Modern physics began with the recognition that the physical world is an unfamiliar domain where human intuitions, speculation, and anthropocentric assumptions can be misleading (Beloff, 1973). Objectivity in science is viewed as a hallmark that separates the sciences from arts and humanities. Objectivism implies efforts to be "impartial, to have no preferences, predilections or prejudices, no biases, no preconceived values or judgments in the presence of the facts" (Wirth, 1946, p. xvii-xviii). Historically, our subjective understanding and interpretations of the physical world have been influenced by religion, philosophy, and culture and led to speculative, biased, and inaccurate understanding of the natural world. Objectivity is viewed as a hallmark that eliminates or limits these biases. The method of investigation involves separating the standpoint of the *knower* (subject) from the *known* (object) so that a realm of pure facts can be attained (Sampson, 1978).

Although objective stance is necessary in science, human subjectivity is inseparable from objectivity. Through speculation, intuition and conviction, seminal works in science have been achieved in science (Burke, 1985; Holten, 1973; Polanyi, 1968). Polanyi (1968) points out that *objective* and *subjective* aspects of science cannot be separated from science. His analysis of each and every step in scientific undertaking led him to conclude that the existence of an objective science is not a fact, but an *assumption* and a *belief*. He concludes that "nothing is more certain in our world than the established results of science. My point is that the *absence of strict criteria* on which to base our acceptance of science merely shows that our confidence in scientific knowledge is based

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on *nonstrict criteria*. Science is grounded, and is firmly grounded, on the kind of indefinable insights which the current view of science regards as mere psychological phenomena, incapable of producing rational inferences" (p. 27).

Polanyi (1968) demonstrates that the *hard criteria of science* rest on the *soft criteria* of human judgement. It is not possible to eliminate these *soft criteria*, or even reduce them to insignificance. As a result, scientific knowledge ends up resting on subjective rather than objective criteria. Popper (1959) points out the impossibility of making a science out of verifiable and justifiable aspects: "Science is not a system of certain, or well-established, statements; nor it is a system which steadily advances toward a state of finality. We do not know, we can only guess, and our guesses are guided by the unscientific faith in laws, in regularities which we can uncover - discover" (p. 278). Albert Einstein notes that "science as an existing, finished [corpus of knowledge] is the most objective, most unpersonal [thing] human beings know, [but] science as something coming into being, as aim, is just as subjective and psychologically conditioned as any other of man's efforts" (cited in Holten, 1988, p. 6-7).

A leading physicist, Gerald Holten (1973), studied and analyzed the content of Albert Einstein's notes and documents. He wanted to understand the thought and discovery process behind his ideas, concepts, and theory. He discovered that Einstein was firmly wedded to his convictions and assumptions that guided his ideas, discoveries, and theory. He notes that these basic assumptions are not verifiable nor falsifiable, which is a basic requirement of science. In the process of theory construction and concept development, Einstein searched for unity, invariance, and formal explanations while emphasizing the logic of parsimony, symmetry, continuum, causality, and completeness. He rejected the assumption of uncertainty and acausality of quantum physics and led him to his theological conclusion, "God shall not play dice with the world."

Holton (1988) conducted systematic analysis of the discovery process of leading scientific geniuses: Johanes Kepler, Issac Newton, Neils Bohr, Wolfgang Pauli, Max Born, Erwin Schrödinger, and Werner Heisenberg. They all recognize the inseparability of the subjective and objective aspects of science. The subjective aspects (i.e., assumptions, intuition, insight, methodological judgments, interpretive decisions, and conceptual leaps) are fundamental to science and they are essential components of

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science. However, only the objective aspects, the scientific theory, concepts, rationale (Plane 1) and the empirical data (Plane 2) are published in scientific journals. Researchers are misled into believing that science is driven by the strict criteria of objectivity composed of theory, concepts, and empirical results.

Although science does not progress in a series of objective and mechanical fashion, published scientific reports reinforce the perception that the process of experimentation and discovery is objective, rational, and transparent. Holton (1988) points out that "most of the publications are fairly straightforward reconstructions, implying a story of step-by-step progress along fairly logical chains, with simple interplay between experiment, theory, and inherited concepts. Significantly, however, this is not true precisely of some of the most profound and most seminal work. There we are more likely to see plainly the illogical, nonlinear, and therefore 'irrational' elements that are juxtaposed to the logical nature of the concepts themselves" (p. 18). He points out that there is the third plane, the *themata* (Plane 3), which includes the subjective, agentic, and phenomenological aspects of science that are essential part of the discovery process and science.

Burke (1985) documents the seminal discoveries in science that have been made in irrational and dream-like states. He notes that these discoveries do not proceed in a purely rational and mechanical fashion. He provides the following examples. Einstein revolutionized the fundamental understanding of matter when he saw himself "riding on a beam of light" in his dream and concluded that "if he were to do so, light would appear to be static" (p. 303) and proposed the convertibility of energy and mass as $E=mc^2$. August Kekulé discovered the stable structure of the benzene ring when he was "gazing into the fire and seeing in the flames a ring of atoms like a serpent eating its own tail" (p. 303). Newton is said to have realized the Law of Gravitational Attraction seeing an apple fall to the ground. Archimedes leaped out of his bathtub yelling *eureka* when he realized the meaning of buoyancy and displacement. Johannes Gutenberg described the idea of the printing as "coming like a ray of light" (p. 303). Alfred Wallace realized the theory of evolution in a "delirium." He notes that these "act of mystical significance in which a man uncovers yet another secret of nature is at the very heart of science" (p. 303).

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It is important to understand the phenomenology behind the assumptions, concepts, and theory to obtain a full picture of how knowledge is created, shaped, and advanced in science, philosophy, and society. In the field of IT, Steve Jobs points out in 2005: "You can't connect the dots looking forward; you can only connect them looking backward. So, you have to trust that the dots will somehow connect in your future. You have to trust in something - your gut, destiny, life, karma, whatever. This approach has never let me down, and it has made all the difference in my life"[1]. This is the basis of creativity and the software of the mind, self, and culture.

Scientific method

Boulding (1980) points out that there is a popular conception of the existence of objective scientific methods, but in reality, there is a plurality of methods in science. He notes that "one illusion, held even within the scientific community and by many outside it, is that there is a single 'scientific method,' a touchstone that can distinguish what is scientific from what is not" (p. 833). He goes on to note that "within the scientific community there is a great variety of methods, and one of the problems which science still has to face is the development of appropriate methods corresponding to different epistemological fields" (p. 833). A particular method, such as experimentation, cannot be assumed that it will deliver scientific results. He points out that there are many instances where rigorous scientific methods are used, the results are not accepted as being scientific. For example, prior to chemists, alchemists used controlled experiments, theologians used logic, astrologers used careful observation, and geomancers, diviners, and phrenologists used systematic observations and measurements. He emphasizes that "these methods are not peculiar to science and none of them define it" (p. 833). Finding an appropriate match among the method, concept, and theory is part and parcel of the scientific discovery process.

Science as an approximation

Scientific advancements are made when new ideas are entertained, and the basic assumption of an established theory is questioned. Newton proposed the Corpuscular

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Theory of Light in which the light is made of particles that travel in a straight line at a finite speed. However, his theory was refuted when light showed wave properties, and it is now accepted as a wavelength of electromagnetic radiation that allows human eyes to see. A longer wavelength of electromagnetic radiation allows human ears to hear. Albert Einstein was able to explain the property of light through the Theory of Relativity $E=mc^2$, showing that mass and energy are convertible. He provided a comprehensive mechanical understanding of the universe. Einstein was, however, skeptical of Heisenberg's Uncertainty Principle which states that we cannot measure the exact position and speed of an object simultaneously.

Einstein developed his view of the static eternal universe and rejected the probabilistic assumptions and uncertainties of the Quantum Theory by stating that "God shall not play dice with the world." The second assumption is that no mass can travel faster than the speed of light. He stated that mass grows with speed and becomes infinitely large at the speed of light. Only light, or an entity with no mass, could travel at the speed of light. In 1917, he outlined the static eternal universe and updated it in 1919, viewing the universe as a static, spherical, perfectly symmetric cosmos, with matter homogeneously distributed everywhere[2].

With a series of experiments at the Large Hadron Collider at CERN, Switzerland, researchers discovered in 2012 a subatomic particle with the properties proposed by Peter Higgs - it was named as the Higgs-boson particle. Stephen Hawking comments that "not only does God play dice but... he sometimes throws them where they cannot be seen."[3] Results from Quantum physics questions "the doctrine that the world is made up of objects whose existence is independent of human consciousness turns out to be in conflict with quantum mechanics and with facts established by experiment" (d'Espagnat, 1979). These results indicate the importance of raising questions, looking at the data with a fresh perspective, and questioning the basic assumption of established theories (Burke, 1985; Holten, 1988). Science progresses by giving us the best approximation of reality at the present but leaves the possibility that human creativity can provide a more accurate knowledge in the future. We cannot know with absolute certainty the nature of the object since it involves human perception and analysis to understand the object. We can only observe and infer causality between two correlated events in space and time.

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In the field of chemistry, Antoine Lavoisier (1743 - 1794) transformed chemistry from a qualitative to a quantitative science. His first step was to dismiss the assumptions behind the phlogiston theory. He introduced oxygen and hydrogen as the basic elements in the combustion process. He developed measurement devices and used thermometric to measure temperature, barometric to measure pressure, and calorimeter for measuring heat changes in a reaction. He helped to construct the metric system and organized the list of chemical elements in the Periodic Table.

Power to define and control

Although our assumptions and theories about the physical world do not impact the mechanical workings of the universe, they have profound impact on the sciences, society, and culture (Chorover, 1980; Drucker, 2001). This is because having the power to define provides the power to control for a select few to control human lives and institutions (Chorover, 1980). Whether we believe the earth is at the center or the sun is at the center, it does not affect planetary motion. However, existing authorities have vested interest in maintaining the prevailing social order through their power to define. The physical universe and natural laws do not change or change very slowly, but our assumptions and understanding of the natural world have changed dramatically and paved the way for scientific, industrial, and cultural revolutions (Bandura, 2023; Kim & Kim, 2023).

In the field of biology, Charles Darwin's Theory of Evolution had a cataclysmic impact in defining the nature of the human mind, self, and culture. His theory provided a comprehensive explanation of biodiversity, in which humans are one of the species in the natural world. He included humans as a part of the natural world and suggested that human psychology could be explained in terms of biological instincts and traits. Humans are not the creation of God or endowed with rationality, free will or empathy. Religion, philosophy, arts, humanities, and culture became obsolete since ecology, competition, natural selection, and survival of the fittest are all that matters. This gave rise to the field of Social Darwinism and sociobiology, which are the extension of Darwinian theory to the field of psychology, social sciences, applied sciences and humanities.

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With the rise of Social Darwinism in explaining humans and society, Stephen Chorover, published in 1980 the volume entitled, *From genesis to genocide: The meaning of human nature and the power of behavior control*. He is critical of pseudo-scientific determinism advocated by Social Darwinism and sociobiology and the excessive impact it had on society. Chorover (1980) points out that the acceptance of the sociobiological theory of the self, relationship, and society provides the authorities with the power to define and the power to control people's lives. The power to define the biological basis of human cognition, emotions, and behavior helped to support the development of psychological and psychiatric technology to control people's lives (e.g., IQ, personality, and mental health diagnosis and treatment). Although the scientific basis of traits in personality is without merit and scientific foundation, Cervone (2023) points out that their use is flourishing since it has become a multi-billion-dollar business. The same can be concluded for the intelligence test as measuring the innate ability (Chorover, 1980; Kamin, 1974; Kim & Chun, 1994).

It is important to question the basic assumptions, theories, and methods in psychology that are based on the natural sciences model, and the bias it has created in understanding the human, mind, self, and culture (Bandura, 1997, 2023; Hüther, 2016; Kim, 1999, 2001). Mainstream psychology's acceptance of the natural sciences model ignores the influence of culture since it is viewed as a contextual factor that cannot be defined operationally and investigated using experimental methods. Traditional research on predictors of happiness, health, and long-life focus on biological factors of intelligence, personality, education, income, and socio-economic status, and they have not fully examined the role of experience, relationship, social support, culture, epigenetics, and neuroplasticity.

III. Perception and Reality

To illustrate the importance of assumptions and phenomenology in perceiving reality, I will use four optical illusions that have fascinated people. Objectivity is used to differentiate objective reality from illusion and subjective experience. Objective reality exists outside an individual's perception, and it can be understood to provide a universal

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understanding of the world. The subjective reality is what a person sees, feels, and believes which can be verified or falsified using objective methods. We believe that there is only one objective reality, but our perception can play tricks on us, and we call them optical illusions.

In Figure 1, what do you see. (See Figure 1)? Do you see two men in white facing or one another, or do you see a black vase at the center? There can be only one objective reality, but we see two different things. What is the correct answer - a black vase in the center, or two people in white facing one another? The correct answer is that both perceptions are correct, but we have two different assumptions, and we are not aware of them. In Figure 1, if you tell yourself that white is the background and it is far away, then you will see a black vase in the center. Now, if you tell yourself that black is the background and it is far away, then you will see two men in white facing one another. Once we share the same assumption of what the background and figure is, then we see the same thing. Figure 1 is an example of the figure-ground relationship of perceiving the 2-dimensional figure in the 3-dimension space without our awareness. Although Figure 1 is considered to be an optical illusion, it is an example of the figure-ground relationship that we assume and perceive automatically and without awareness.

Figure 1: Black vase or two me in white?

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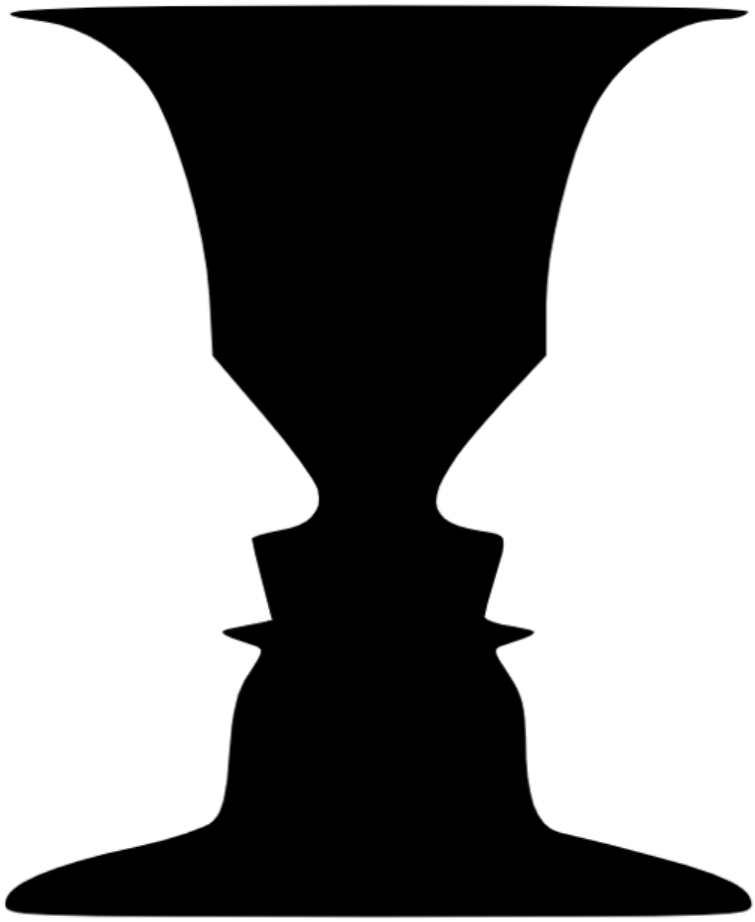

The basic problem with our perception is that we perceive reality without being aware of our assumptions. We use our mind to perceive reality, and we are not aware how we do it - the same way that we are not aware of our eyes when we use them to see.

In Figure 2, there is one orange circle in the center, surrounded by six larger grey circles on the left, and another orange circle on the right, surrounded by six smaller grey circles. (See Figure 2). Which orange circle looks bigger to you? The one on the

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left or the one on the right? People will say that one on the right looks bigger. Now in Figure 3, the six surrounding circles on the right and left are deleted, and you only see two orange circles. (See Figure 3). Which orange circle looks bigger to you? They look the same size, and if you measure them, they are identical. You now know the correct answer: They are the same size.

Figure 2: Which orange circle is larger?

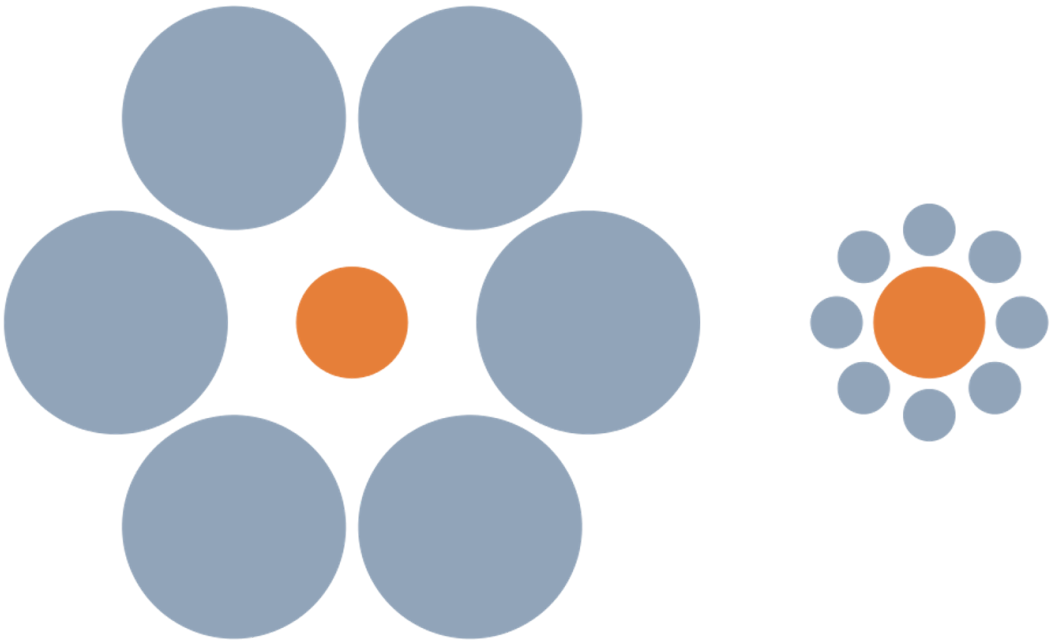

Figure 3: Which orange circle is larger?

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Now, go back to Figure 2 and decide which orange circle looks bigger to you: One on the right or the one on the left? People will still see that the right one looks bigger even though they know they are the same. You now have a dilemma since what you know to be correct is different from what you see. What will you trust? What you know, or what you see? Since the orange circle on the left is surrounded by six bigger circles, it appears smaller. The orange circle on the right, which is surrounded by six smaller circles, appears bigger. Our perception is influenced by context and when the context is removed, we see the same thing.

When there is no context, our eyes can play tricks on our perception, such as the autokinetic effect or the moon illusion that makes the moon look bigger when it is near the horizon rather than on the top of the sky (known as the moon illusion). Similarly, the sun appears to be bigger when it is setting over the horizon compared to when it is directly overhead in the sky.

In Figure 4, what do you see? (See Figure 4). Do you see three circles and a trapezoid on the right? What if I label the figure as *a lady cleaning the floor*. Do you see her large hip and two feet at the bottom (three circles) and a bucket of water (trapezoid) beside her? Most people smile and say: "Yes, I see the lady cleaning the floor!" However, people did not see her when I described it as three circles. The important feature of this exercise is to differentiate between the perception of objects and the perception of meaning. We perceive objects through our senses, but the perception of meaning is perceived through our mind and culture. Seeing physical lines is different from seeing meaningful objects, such as the lady cleaning the floor. This is a difference between the objectivity in physics and the subjectivity of meaning.

Figure 4: Three ovals and a trapezoid

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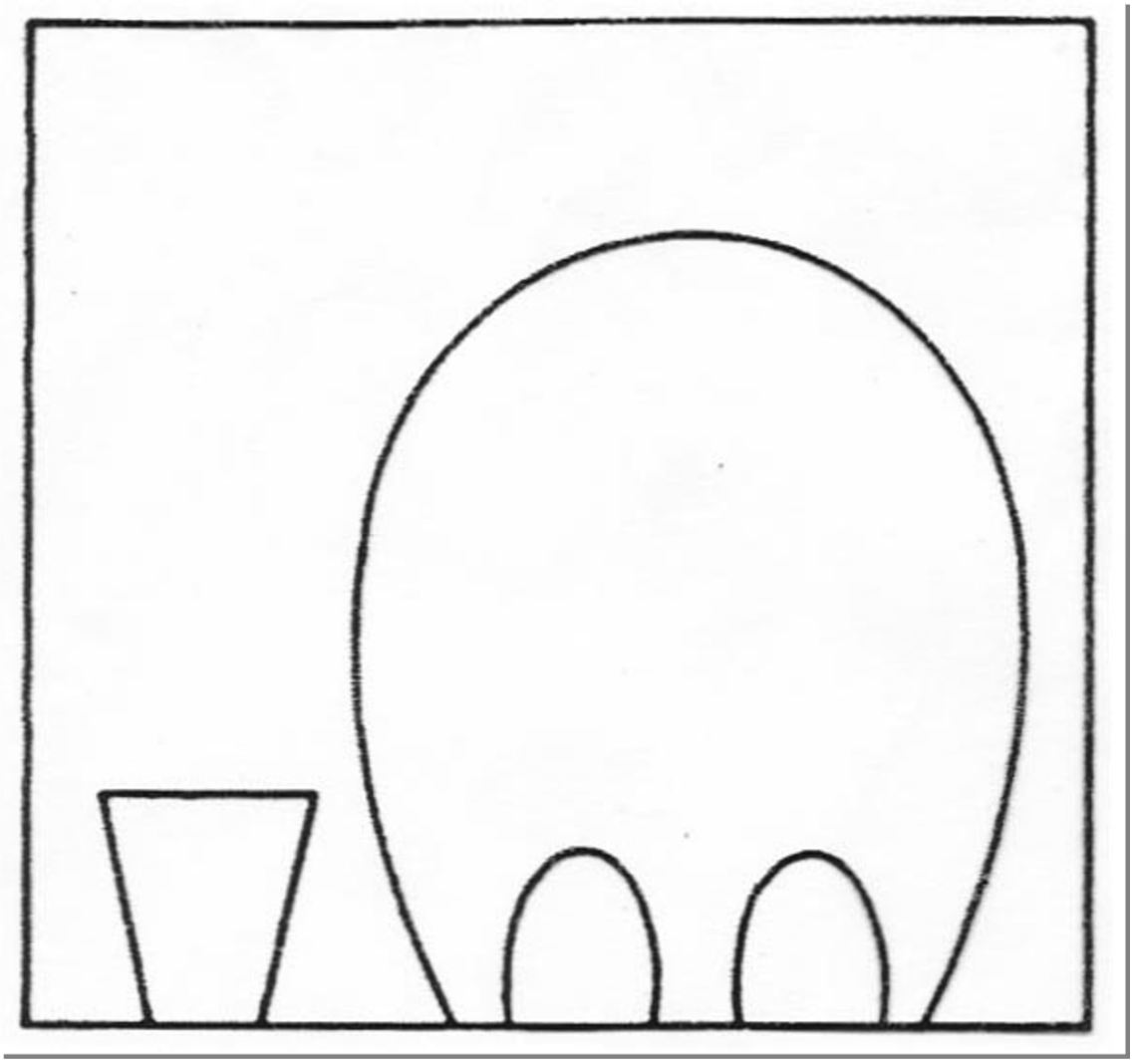

A famous poet Gertrude Stein stated poetically that "a rose is a rose, is a rose, is a rose.[4] Is she correct? When we see a rose, does the image of the rose go to our eyes and then to our brain? The answer is no. When the image of the rose is projected in our retina, it is inverted. The 3-dimensional rose is projected onto a 2-dimensional retina. It is not an image of the rose that goes to the brain, but the sensory stimulations in the retina that are converted into electric signals, and they are reconstructed as a "rose" in our brain. When you hear the word "rose," the sound waves create vibrations in the stirrup bone and cochlea in the ear, electrical signals are sent to the brain, and it is perceived as the word "rose." When you smell a rose, the odor molecule travels through your nasal passage, the receptor cells in the olfactory membrane send the electrical signals to the brain, and it is perceived as a "rose." Thus, a rose is *not* a rose, is *not* a rose, is *not* a rose, since the sensation of a rose is converted to electrical signals, and

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they are reconstructed as an image, sound, or smell of a "rose" in our brain. The physical rose that exists in nature is qualitatively different from our perception and reconstruction of the rose. We cannot know the objective reality without our perception since perception involves reconstruction in our brain and mind. Through consensus, we agree that we are seeing, hearing, and smelling is a rose. Thus, objectivity rests on human, perception, consensus and agreement.

Figure 5 is an example of the Stroop effect in which the *written* word is different from the *color* of the written word. (See Figure 5). If you read the word in the top left corner it is written as **Red**, but the color of the letters is blue. The second word on the next row is written as **Blue**, but in red coloring. If you go down from the top left row and say out loud the ***color*** of the letters in each row, how well do you do? It is a simple exercise that any three-year-old child can do easily without any mistake: Blue, Red, Green, Black, Yellow, Brown, Green, Pink. When you try to name the color while ignoring the written words, it interferes and creates a problem in naming the color.

Figure 5: Example of the Stroop effect, English

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Please go to Figure 6 and name the color of the letters from the top left corner and go down each row. (See Figure 6). You will not have any difficulties naming them as: Blue, Red, Brown, Pink, Yellow, Red. Figure 6 is not a problem if you do not know how to read Korean. However, if I ask native Koreans to name the color of the letters in Korean, they have difficulties.

Figure 6: Example of the Stroop effect, Korean

Naming the colors is an easy task any child aged three can readily master. However, reading the alphabet and understanding their meaning take many years to learn. Once it is learned, however, it becomes "natural," and we perceive meaning automatically and without awareness. This is the definition of culture. We perceive symbolic reality and meaning through culture. Learning how to read, sing, ride a bicycle, and use a smartphone or computer is a difficult task, but once it is learned, it feels "natural," and becomes an important part of one's mind and the self.

Although we believe that we perceive reality directly and objectively, all perceptions are a reconstruction in our mind. All objects that we see, hear, smell, taste, or touch are not

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direct and objective representations, but they are electrical signals that are reconstructed in our brain. The way we see, hear, smell, or taste are constructed through our senses. Since we have similar physiological mechanisms, we can come to the same conclusion and consensus. Objectivity is based on the consensus that we reach about what our senses tell us, and they could be verified by others and across cultures.

We also perceive reality through symbols, ideas, and meaning, such as understanding the meaning and ideas through the writing system; this is the basis of culture. (See Figure 7). We can perceive the four separate alphabets "V," "L," "E," "O." However, we can reconstruct them and order the four alphabets in differently to give "L" "O" "V" "E," we perceive meaning or emotion that is absent from the four separate letters of the alphabet. We can construct reality through our senses, and we can come to a basic agreement; this is the power of the natural sciences. We also construct reality through meaning, and this is the basis of our mind, self, and culture. Stroop effect is an example of how we perceive reality through our senses and meaning. A person can understand the meaning of the symbolic reality only when the person is socialized to learn the language of a particular culture. Once a child learns a language and their meaning, the symbolic representations are automatically processed. Since we perceive our symbolic reality through culture, it feels "natural" for a person who grew up in a particular culture, but alien to those who are brought up in another culture.

Figure 7: Perception through senses and culture

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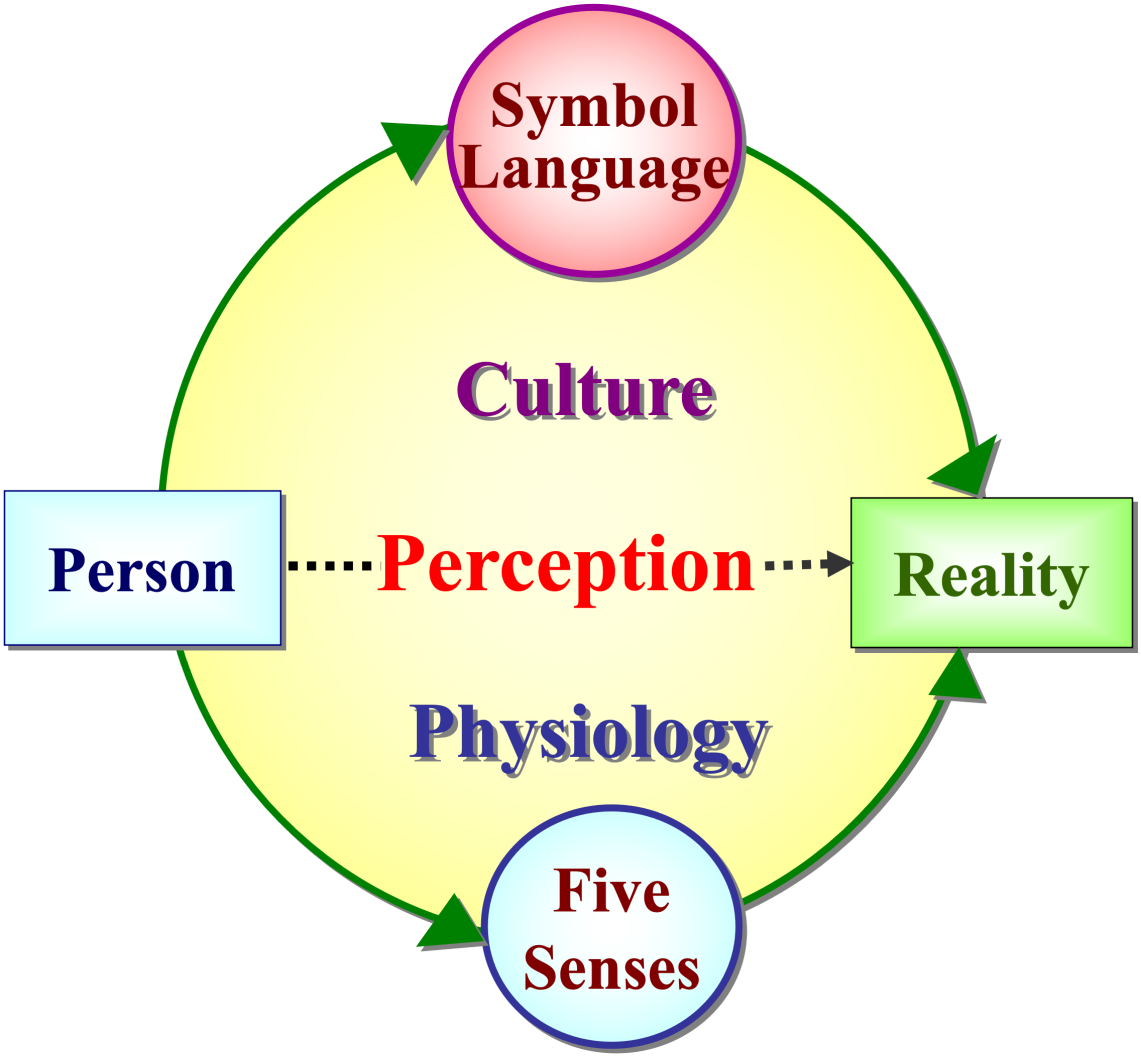

John Culkin points out that "fish did not discover water" since it is a part of their natural environment, and they cannot imagine living without the water. In the same way, a child is born into a particular culture and perceives reality through culture. As such, it is difficult to "discover" one's own culture. Culture is perceived in terms of artifacts or products, such as art, music, customs, beliefs, and values. However, culture is as fundamental as sensory perception in allowing us to perceive reality meaningfully, and provides us with the way to view, understand, communicate, and create reality -; this is the basis of the software of the mind.

IV. Understanding our Biological Heritage

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To understand the development of the software of the mind, self, and culture, we need to first examine our biological heritage. Biologically, human beings belong to the Great Ape family, and became a separate species known as the *homo sapiens* around six million years ago. *Homo sapiens* share 98.8% of the genes with bonobo monkeys and chimpanzees, and only 1.2% separates humans from them. Morphologically, there are six major differences between the *Homo species* and bonobo monkeys and chimpanzees: 1) Reduced masticatory system, 2) smaller canine teeth, 3) hidden ovulation, 4) the power of precision grip, 5) bipedalism, and 6) the descent of the larynx and hyoid bone (Henke & Tattersall, 2007).

These morphological differences and the development of human agency allowed humans to develop the software of the mind, self, and culture that differentiate humans from the closest biologically relative bonobo monkeys and chimpanzees. Mithen (2007) points out, "the paradox we face is that *Homo sapiens* is genetically almost identical to the chimpanzees, our closed living relative with whom we share that 6 million old ancestor, but cognitively and behaviorally radically different" (p. 1966). Other species have morphological advantages, such as speed, strength, and agility, but *Homo sapiens* is the only species that can control their instincts, think outside the box, be creative, and innovate to populate all parts of the world.[5]

We need to examine how these morphological differences developed and gave rise to the human mind and agency, which in turn stimulated the creativity explosion and innovations that have transformed our biology, relationship, and society.

Biology and morphology

Biologically, humans belong to the Great Ape family, belonging to the *Hominini*taxonomic tribe with chimpanzees and bonobo monkeys. A separate *Homo* genus emerged around 6 million years ago. (See Figure 8). Our closest genetic relative comes from the *Pan* genus that is composed of the chimpanzees, *Pan troglodytes* and bonobo monkeys, *Pan paniscus*. Within the *Pan* genus, bonobo monkeys separated from chimpanzees around 2 million years ago.[6] Both live in the West African

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jungle and Congo basin, protected by the forest canopy. (See Figure 9). Our next closest genetic relative is the Gorilla, followed by Orangutan, and Hylobates.

Figure 8: Our biological ancestry

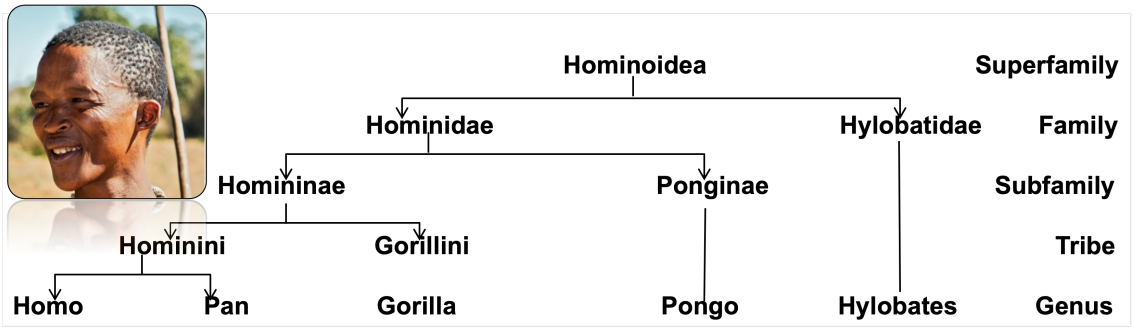

Figure 9: Ecological context

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Bonobo monkeys in Congo jungle

Homo sapiens in the southern African savanna

Both chimpanzees and bonobo monkeys are socially and hierarchically organized. The chimpanzee's social group is dominated by the *alpha* male, which uses violence, hoards food, has exclusive mating access to females, and abuses lower ranking males to maintain their dominant position. In contrast, bonobo monkeys are led by an *alpha* female. She is more egalitarian, nonviolent, uses sex to help prevent and resolve conflicts, often walks upright, and shares food amongits members and non-members. Bonobo males contribute to the group by providing food and protection to young mothers, and female members protect and assist pregnant members through their birthing process, the only species known to do so other than humans. Most people believe that humans evolved from chimpanzees, reifying their view that the dominant males are aggressive, violent, competitive, and selfish. However, humans have evolved from bonobo monkeys, based on genetic and morphological analysis.[7]

Of the 21 *Homo* species in the genus, only one species, *Homo sapiens*, managed to survive to the modern day. *Homo sapiens* lived in the open southern African savanna from 300,00 years ago, which is a different ecology from the jungle canopy that provides protection and food for the bonobo monkeys and chimpanzees. (See Figure 9). *Homo sapiens* began to migrate around 80,00 years ago and accelerated by the Ice Age to populate the Earth (Henke & Tattersall, 2007).

The first significant morphological difference is the opposable thumb, which allows the precision grip and the development of stone tools (Toth & Schlick, 2007). Although

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other animals use tools (e.g., sea otters, crows, finches, and chimpanzees), humans are the only animal that intentionally modify and shape the tools, and educate their children in tool use and manufacturing (Toth & Schlick, 2007).

Stone tools allow humans to move from being hunted to become hunters. Making, refining, and teaching the tool use is a cultural achievement since "stone technology is based on learned behavior and is not directly transmitted biologically" (Conrad, 2007, p. 2005). Toth and Schlick (2007) point out that bonobo monkeys, such as Kanzi and his sister and offsprings, were able to use lexigram to communicate with humans. (See Figure 10). However, even after years of training in toolmaking, they could not be taught the "intentional percussive flaking of the stone" and did not develop "sharped edged tools for cutting" that are necessary to develop complex tools (Toth and Schlick, 2007). These results suggest that bonobo monkeys lack the agentic capabilities: *intentionality*, *forethought*, *self-reaction*, and *self-reflection* (Bandura, 2023). These arethe four core aspects of human agency that allow humans to understand the self, relationships, the environment and to be creative and innovate to plan, execute, and realize the future that is the basis of the software of the mind (Bandura, 2023).

Figure 10: Bonobo monkey Kanzi

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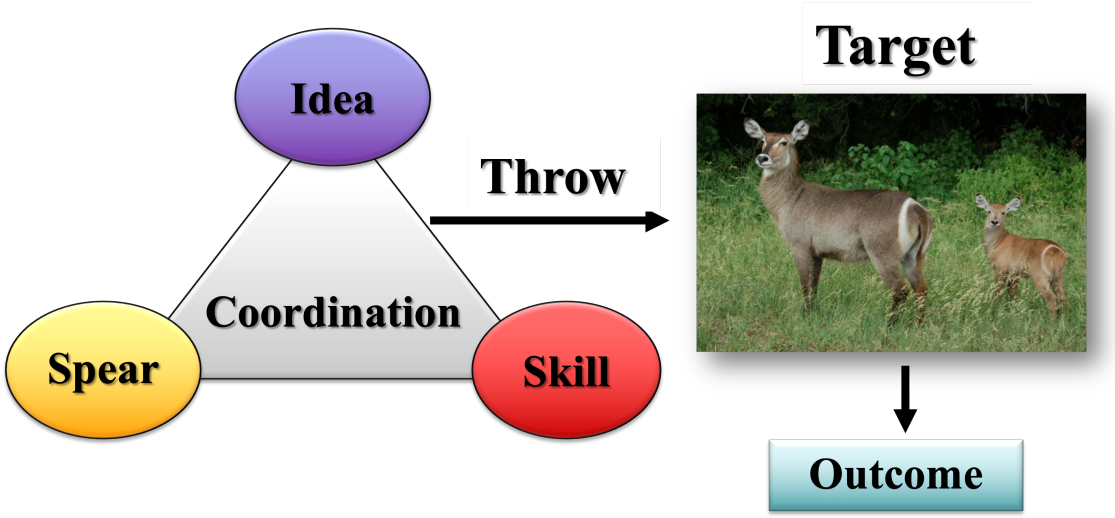
Making complex stone tools requires special cognitive skills, but hunting requires more complex cognitive, motor, and social skills. The goal of the hunter is to catch a deer to feed the tribe. (See Figure 11). As the hunter approaches the deer, it hears a sound and runs. The hunter must throw the spear, not where the deer is, but must anticipate where the deer will be, and throw the spear to hit the deer few seconds later. This requires agentic capabilities and self-efficacy to execute a complex set of actions (Bandura, 2023).

Figure 11: Hunting



Second, *Homo* species developed fully obligate bipedalism or walking upright around 2 million years ago (Harcourt-Smith, 2007). *Homo* species lived in the open African savanna and walking upright provided them with reduced thermal stress. (See Figure 9). Since the body's surface area is less exposed to the sun when walking upright and allowing the breeze to cool the body, it can reduce the heat stress by 60%. It provided them the advantage of travelling longer distances to forage for food and consume less water (Harcourt-Smith, 2007).

Walking upright contributed to the descent of the larynx and the hyoid bond that is attached to the cartilage of the larynx by one cm (Mithen, 2007). Since walking upright can block the air flow to the lungs, the descent of the larynx and hyoid bone opens the canal for easier breathing. The descent of the larynx allows humans to produce around 20,000 different sounds, enabling language to develop. Chimpanzees can only make

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around 15 grunts, hoots, screeches, and whimpers, and up to 38 different calls to communicate. They cannot develop language since it takes around 10,000 differentiated sounds to create a language.

Bipedalism has negative aspects, such as the reduced running speed and agility. Chimpanzees can run faster on all fours than their *Homo* counterparts. It resulted in a narrow pelvis and reduced the width of the birth canal. For an infant to pass through the narrow birth canal during birth, infants are born 18 months premature, and they remain totally helpless during the first 18 months of the infant's life (Mithen, 2007). While chimpanzee infants can clutch and cling to the mother so that the mother can feed and protect herself, human infants are totally helpless.

During the nine months of pregnancy and two years of nursing the helpless infant, it leaves the mother vulnerable and in need of a higher calorie intake (Mithen, 2007). She and the infant survived by receiving support from her female-kin network, especially from the grandmother (O'Connell, Hawkes & Blurton-Jones, 1999). Archaeological evidence shows that the male Neanderthal partners provided food for women and children, which increased the mother-father and father-infant bonding (Mithen, 2007).

With the prolonged infant care, the mother-child interaction, communication and bonding became significantly enhanced. This in turn helped the cognitive, emotional, and social development of the infant and the mother (Mithen, 2007). Dissanayake (2000) examined the infant directed speech known as "motherese," or baby talk: "By coevolution in the infants and mother of rhythmic, temporally patterned, jointly maintained communicative interactions produced and sustained positive affect psychological brains states of interest and joy by displaying and imitating emotion of affiliation, and thereby sharing, communicating, and reinforcing them" (p. 390). The rhythmic, high tone, and musical nature of the baby talk provided positive emotional bonding and satisfaction to the mother and the infant, and the mother-infant interaction and care produce the happiness or love hormone, *oxytocin.*[8]

This contributed to the development of empathy, compassion, and altruism among the *Homo* species. Early humans displayed compassion by taking care of the wounded, sick, and injured (Berger & Hilton-Barber, 2000). In an environment with limited food supply and in constant danger of predators, it would be advantageous to abandon the

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weak and sick. Fossils records of healed bones indicate that humans took care of the weak and the injured (Gore, 2000). In addition, the "deliberate burial of kin are linked to personal and emotional ties between the living and the dead" (Conrad, 2007, p. 2015). Inside the grave of the deceased, they found tools that they may need to survive in the afterlife, suggesting a belief in the afterlife and their spiritual connection to the dead. This may have become the basis of religion.

V. The Software of the Mind

Giovanni Battista Vico (16881744) provides a framework for understanding human experience, phenomenology, creativity, and culture. He differentiates the natural world from the human world. Vico notes that nature exists prior to, and independent of, human perception. We can conduct objective experiments and analytical analysis as an observer of nature, but our understanding of nature can only be indirect and inferential (Berlin, 1976). We can understand nature by classifying the observations into regularities, dissecting them, combine and integrate them, simulate them, and superimpose mathematical techniques upon them. They only yield correlations between two or more observed events, and we infer causality between the events. We can never know what it is like to *be* a tree, bird, or lion. We can only be observers and infer their world based on our observations.

In the human world, a direct first-hand knowledge is possible since a person is not just an observer, but an actor participating in, reacting to, and contributing to, the process and development. Art, history, society, culture, language, mathematics, and science are *products* of collective human efforts. As creators of these products, we can have direct, first-hand knowledge of the creative process and the outcome. In the human world, "we judge human activity in terms of purposes, motives, acts of will, decisions, doubts, hesitations, thoughts, hopes, fears, and desires; these are among the ways in which we distinguish human beings from the rest of nature" (Berlin, 1976, p. 22). Without understanding human intention, will, and social responsibility, the field of ethics, laws and social sciences will become meaningless. examined the infant directed speech known as "motherese," or baby talk.

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Vico used the following analogy to articulate the limits of the physical and mathematical models in explaining the human world: To conceive of inanimate and animate objects in human terms is considered irrational (i.e., the misapplication of anthropomorphism), but the reverse tendency of explaining humans in terms of mechanical and biological laws is equally erroneous. Vico stated that humans possess an imaginative faculty that allows an individual to examine his/her own feelings, thoughts, and actions, as well as those of others. They communicate their thoughts, feelings, and aspirations to others. Humans embody their feelings, attitudes, and thoughts in symbols, art, and music, and record them outside their body. These symbols and works of art are cultural means of self-expression and are reflections of the mind of the creator.

Vico suggested using reconstructive imagination as a tool for understanding the human world. Through this method, we can trace a symbol to its origins, reconstruct it, understand its effects, and assess its value. Within diverse expressions, there can be a unified understanding of humans. Using reconstructive imagination, social and applied sciences can penetrate into the core of these symbolic representations to understand their underlying dynamics. This is the role of paleoanthropologists, historians, economists, geneticists, and software engineers - to understand the meaning of the information created through the minds of the creators. For this reason, understanding the phenomenology of the creator, philosopher, and scientist are part and parcel of the scientific endeavor.

Social Cognitive Theory

Bandura (2023) is critical of psychological and scientific theories that define human nature excluding human consciousness, agency, and social context. The psychological theories of Sigmund Freud, B. F. Skinner, Herman Ebbinghaus, Clark Hull and Jean Piaget have eliminated human consciousness and agency to provide a purely mechanistic and biological explanations and "strip humans of a functional consciousness, a self-identity, and thus an agentic capability" and "overlook the socially embedded inter- play between the exercise of personal agency and the nature of the environments that individuals experience. In so doing, they provide a truncated image of human nature." (p. 3). Human consciousness "is the very substance of mental life. Conscious experience

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makes life not only manageable, but meaningful; a conscious life is a life worth living. Without the capacity for deliberative and reflective conscious activity, humans would be mindless automatons. With it, they are mindful agents" (p. 3-4). He points out that "through cognitive self-regulation, humans can envision the future and act on it in the present. They can evaluate and modify ongoing current behaviors to best serve not only present needs, but also long-term aims" (p. 1-2). Human beings can envision a future state that does not exist, and modify their behavior in the present to reach the future goal; the same way a hunter makes a spear and throws the spear to catch a deer. Without human consciousness and agency, philosophy, art, humanities, culture, and science would not exist.

Bandura (2023) outlines the concept of human agency to explain human cognition, emotion, and behavior. Human agency refers to a broad capability. To be an agent, one has to intentionally influence one's actions, outcome, and life trajectory. With the forethought and cognitive self-regulation, people can visualize their future state, and how their action in the present can guide their course of action to reach the desired future. They can evaluate and modify their current behavior along the way to pursue their long-term goal (e.g., running a 42.29 km marathon or climbing to the top of Mount Everest). Human agency becomes magnified with the emergence of language and allows people to transcend their immediate reality, to select and shape their environment, and to guide their personal and social development.

Bandura (2023) outlines the four core agentic capabilities which operate in a hierarchically organized manner: *intentionality*, *forethought*, *self-reaction*, and *self-reflection*. Since a future state does not affect the present circumstance, it cannot be the cause of the current behavior. With cognitive representations, people can visualize the future, and it can be brought into the present to serve as guides and motivators of current behavior. People formulate their intentions, including personal goals, action plans, and strategies, and visualize the likely outcome. It is a form of anticipatory self-guidance that shapes one's behavior through visualized goals and anticipated outcomes. Forethought enables people to transcend the demands of their immediate environment to shape and regulate the present behavior to realize their desired futures. By projecting over the long-term through specific and reachable milestones, it provides direction, coherence, and meaning to one's life.

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The third agentic capability is self-reactiveness. Agents are not only planners and thinkers, but they are self-regulators, managing their own behavior. They are able to manage their behavior through self-sanctions within a self-developed governing system. They develop an internal behavioral standard against which they evaluate their performances. Through evaluative self-reactions, they can assess how well their behavior and performance measure against their internal standards.

The fourth agentic capability is self-reactiveness. It is viewed as central to understanding goal-based motivation. A long-term distil goal may not be a motivating force to spur people to action (e.g., exercising to be healthy). A proximal goal with enough specific milestones and challenge can motivate people to action (e.g., buying running shoes and setting the alarm clock to run for 30 minutes in the morning). People can contemplate the past and anticipate future activities to plan, motivate, act, and reflect on reaching their goal.

The method by which we can exert control over the environment can be direct versus indirect, and it can be exercised by an individual or in collaboration with others (Bandura, 2023; Kim & Park, 2006). Two types of direct control are identified: *primary control* and *collective control*. If a person exerts direct control over his or her environment to achieve a desired outcome, it is an example of primary control. If people work together in managing their environment, it represents collective control (e.g., sports team). Two types of indirect control are identified: *secondary control* and *proxy control*. If a person obtains assistance from another person in managing one's environment, it is an example of proxy control (Bandura, 1997). If a person accepts a given environment and regulates oneself to adapt to the environment, such as meditation, it is an example of secondary control. Research on mindfulness shows the positive effect of secondary control on health and brain functioning (Fox et al., 2014; Kim & Kim, 2023). The effectiveness of each type of control depends on the context, individual, organization, and culture. When all four types of control can be coordinated and integrated, it can result in better outcomes.

Bandura (2023) points out the preordained divine theological conceptions of the medieval Catholic Church, Darwinian Theory of Evolution, and traditional psychological theories (e.g., Freudian psychoanalysis, behaviorism of Skinner and Hull, Piaget's

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Development Theory, and the mechanistic cognitive theories) share one thing in common - they lack a conception of human agency. He notes that the "purposeless algorithm, however, gave rise to a purposeful species" and "the abilities to communicate using symbols, to deliberate upon the physical and social worlds, and to plan and intentionally alter the environment in preparation for future events conferred considerable functional advantages. These cognitive capabilities thus became the hallmark of humans" (p.1). He notes that the Darwinian Theory eliminated the purposive human agency and replaced it with random genetic mutations, reproductive recombination, and purposeless algorithm known as the natural selection. He goes on to point out that Darwinian Theory cannot explain how the purposeless algorithm gave rise to the purposeful and agentic species that have the capabilities "to communicate using symbols, to deliberate upon the physical and social worlds, and to plan and intentionally alter the environment in preparation for the future events" (p. 1).

Human agency, not natural selection, can explain human behavior: "The emergence of language and forethought converted our species into agents; being who could transcend the dictates of their immediate environment, select and shape the external circumstances they encounter, and thereby guide the course of individual and social development" (Bandura, 2023, p. 1). He goes on to point out that information stored outside the body and information technology allowed us to create augmented and virtual realities that greatly expanded human agency and "these cognitive capabilities thus became the hallmark of humans" (p.1).

Traditional psychology theory: Intelligence testing

An example of ideology driving research is the intelligence testing movement in the United States of America (abbreviated as USA). Lewis Terman, professor of education at Stanford University, modified the Simon-Binet test and created the Stanford-Binet Intelligence Quotient (abbreviated as IQ) test. Alfried Binet developed the test to measure academic achievement to help students to do better in school, and not as a measure of genetic ability. Terman, however, claimed that IQ test measures inborn intelligence, without documenting the biological mechanism. He and his colleagues used the IQ test to document individual, sex, ethnic, and racial differences to confirm the pre-

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existing sexism and racism as being natural and thus scientifically justified. They believe that "the social and economic differences between human groups - primarily races, classes and sexes - arise from inherited, inborn distinctions and that society, in this sense, is an accurate reflection of biology" and claimed that the "worth can be assigned to individuals and groups by *measuring intelligence as a single quantity*" (Gould, 1981, p. 201). These results are used to fuel racism, the eugenic movement, and educational and immigration policy in the USA (i.e., the forced sterilization, segregation people based on gender and race, and restriction of immigration (Chorover, 1980). These myths still persist and shape policy of the USA, as evidenced by the 2024 presidential election.

The IQ test was standardized with the assumption that it measures inborn biological differences among sexes and races. However, Terman distorted scientific evidence to fit his views. When the first version of the test was published in 1916, girls of all ages outscored boys by an average of 2-4%. Terman decided to unilaterally delete, revise, or add new items so that this difference disappeared and subsequently boys did better than girls (Kamin, 1974). The sex difference between boys and girls is fabricated to fit their existing bias, the revised IQ tests are used to confirm this bias, and show that sex differences measure inborn biological differences.

When Southern and Eastern European immigrants arrived at the Elis Island, they were administered the IQ test, and they scored lower than Northen Europeans who arrived much earlier. These results were interpreted as confirming the racial bias of viewing Southern and Eastern Europeans as genetically inferior to North Europeans rather than their poor English skills (Kamin, 1974; Kim & Chun, 1984). Since African Americans had lower IQ test scores, the results confirmed the pre-existing view that they were biologically inferior and deserved a lower station in life (Kamin, 1974; Chorover, 1980).

At the turn of the 20th century, Asian Americans were viewed as an "inferior species," even when the test scores showed that they did equally well as European Americans (Vernon, 1982). Asian Americans were regarded as a "kind of inferior species, who could be used for unskilled labor and menial jobs but could never be accepted as equals into the white community" (Vernon, 1982, p. 2). When the number of Chinese

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immigrants began to increase, the US Congress passed the Chinese Exclusion Act in 1882 and barred further immigration from China. In 1924, the National Origins Act was passed in 1924 that barred all immigrations from Asia, with the exception of Filipinos who were barred in 1934 (Hsia, 1988). These laws were passed due to fears that the "genetically inferior" Asian race would pollute the genetic pool of the USA and lead to nation degeneracy (Chorover, 1980).

Currently, Lynn and Vanhanen (2002) are making the opposite claim based on a different set of results. In their study of 60 nations, they have found that East Asians had the highest IQ: 106 for Koreans, 105 for Japanese, 104 for Taiwanese, and 103 for Singaporeans. The European Americans had lower scores of 98. They conclude that the IQ scores reflect the racial superiority of the Mongolian race. East Asians have now become a superior race due to their genes, although they were labeled as genetically inferior 80 years ago. They are now viewed as a "model minority" having academic advantages over other races, including European and African Americans and they are restricted from entering the top universities in the USA to promote "diversity." It is ironic that 80 years ago East Asians were discriminated due to their genetic inferiority, but the discrimination continues since they are now labelled as the model minority (Kim & Chun, 1984). Even when scientific validity of the IQ tests have been refuted, they have become a multi-billion dollar business around the world and propagate the belief that intelligence is genetically inherited.[9]

Traditional psychological and educational theories assume that the differences in academic performance can be explained by innate ability, personality, or environmental factors. Empirical studies clearly refute the assumption and show that the assumption is politically and ideologically driven (Chorover, 1980; Gould, 1981; Kamin, 1974; Kim & Chun, 1984; Vernon, 1982). Bandura (1999) points out that "it is ironic that a science of human functioning should strip people of the very capabilities that make them unique in their power to shape their environment and their own destiny" (p. 21). As such, "psychology has undergone wrenching paradigm shifts" and "in these transformations, the theorists and their followers think, argue and act agentically, but their theories about how other people function grant them little, if any, agentic capabilities" (p. 21).

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Traditional psychology theory: Cognitive psychology

In the field of cognitive psychology, Gibson (1985) reviews 100 years of research in perception and he is critical of experimental design in psychology. He concludes that "our experiments have been misconceived... We have assumed that the controlling of the physical variables of stimuli at the sense organs of a perceiver would relate the physical to the psychical, as if what we need to perceive was physics" (p. 230). Hagen (1985) points out that the experimental approach in perception has enormous difficulties in explaining how meaning is acquired. The traditional approach in psychology used meaningless stimuli in a laboratory (started with Ebbinghaus's use of nonsense syllabus) and then postulated that meaning is somehow, somewhere added to physical stimuli through the process of cognition and memory. Hagen (1985) points out that traditional approaches are unable to resolve how "meaningless stimulus fortuitously trigger the appropriate associated meaningful memories" (p. 247) and concludes that these experiments were misconceived: "we struggled for a half century before we realized that memory implied meaning and the whole enterprise of nonsensical memory was nonsense" (p. 271). Research in neurobiology show that all sensory information goes through the limbic system where meaning and memory are connected to the physical stimulation (Hüther, 2016; see section below on neurobiology). These results indicate the need to ask ourselves the basic question of how we can explore the unknown and conduct advanced research if we do not possess consciousness, agency, and the scientific community to support and fund the research.

Gibson (1985) emphasizes the importance of understanding the relationship between perception and ecology. He introduces the concept of *affordances* in which the "affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. ... It implies the complementarity of the animal and the environment" (Gibson, 1979, p. 147). Affordance emphasizes the relationship between the perceiver and ecology and how the observer can exercise their intentions and capabilities to maximize the outcome. Lahlou (2017) points out beyond the natural ecology, a particular society has created *installations* of laws, rules, regulations, norms, and structure to regulate people's behavior in a standardized manner and at the same

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time provide affordances to "elicit, frame, channel and control individual behavior" to exercise their agency and freedom within a particular society.

Traditional psychology theory: Attachment theory

In the field of developmental psychology, Henry Harlow found that Rhesus monkeys cling to the cloth mother even when the steel mother is feeding it (Suomi, & Leroy, 1982). These results have been used to develop the attachment theory and extended to explain the development of children. Ainsworth et al. (1978) concludes that secure attachment is possible when children develop autonomy, individuation, and exploration - reflecting the American individualistic bias. Rothbaum et al. (2000) notes that the caregiver's sensitivity to the child can lead to secure attachment, which in turn leads to social competence, and a secure base for exploring the external world. They review the attachment research in the USA and Japan and conclude that the Japanese concept of *amae* (甘え, "the act of requesting and receive a special favor in close relationships" (Kim & Yamaguchi, 2005), is an example of insecure attachment.[10] Although they do not understand Japanese culture and the indigenous concept of *amae*, they made the above conclusion without solid empirical evidence. Secondly, the generic term "caregiver" is misleading since the relationship that a child has with his/her mother is very different from relationship with the father, grandmother, or a daycare provider (Kim & Yamaguchi, 1995).

The definition of defining parent-child relationships as attachment is flawed and misleading. Human babies are not able to attach or cling to the mother physically, as chimpanzees and bonobo monkeys do, and thus it should not be labelled attachment. Since the people above are the influential psychologists in the USA, they have the power to define through their publication and the power to control what evidence is fundable, and publishable. Among the liked-minded psychologists in the USA, they serve as gatekeepers stifling scientific advances.

The traditional development theories lack a basic understanding of relationships, the perspective of the child, empathy and how to maintain a close relationship throughout one's life. In our research, we have collected and analyzed over 1,000 surveys in Japan

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to show that the indigenous concept of *amae* is a relational concept that changes over time based on the type of relationship, situation, and one's life position (Kim & Yamaguchi, 1995). The concept of attachment is devoid of human agency. Yamaguchi and Ariizumi (2006) point out that the indigenous concept of *amae* is an example of proxy agency, where individuals ask for favors in close relationships, even if it is inappropriate. Japanese expect and receive special favors because of empathy and the closeness of the relationship.

Human Agency and Self-efficacy

Bandura (2023) is critical of psychological theories of committing the fundamental error of commission by focusing on the biological and mechanical functioning and the error of omission by eliminating human agency. He translated the traditional concept of "will" into the psychological construct of human agency. He provides empirical review of research that parallel results obtained from paleoanthropological, neurobiological, and genetic research (Henke & Tattersall, 2007; Hüther, 2016; Siegal, 2010) and conclude: "neuroimaging can shed light on how agentic causal beliefs and activities develop functional neuronal structures and orchestrate neurodynamics" (p. 5).[11]

Bandura (1997, 2023) conceptualized and measured human agency through self, relational, social, and collective efficacy. Self-efficacy is defined as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1977, p. 3). (See Figure 12). Bandura (1997) points out that "self-efficacy is a generative capability in which cognitive, emotional, and behavioral subskills must be organized and effectively orchestrated to serve innumerable purposes" (p. 37). Self-efficacy can be increased by providing feedback and social support from others. (See Figure 13). He provides evidence from 60 years of research documenting the importance and impact of human agency and self-efficacy across different areas of psychology (cognitive, developmental, social, sports, health, organizational, and clinical) and across cultures to create social transformation using the media (Bandura, 1997, 2023; Caprara et al., 2008; Kim & Kim, 2022; Kim & Park, 2008).

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Figure 12: Self-efficacy

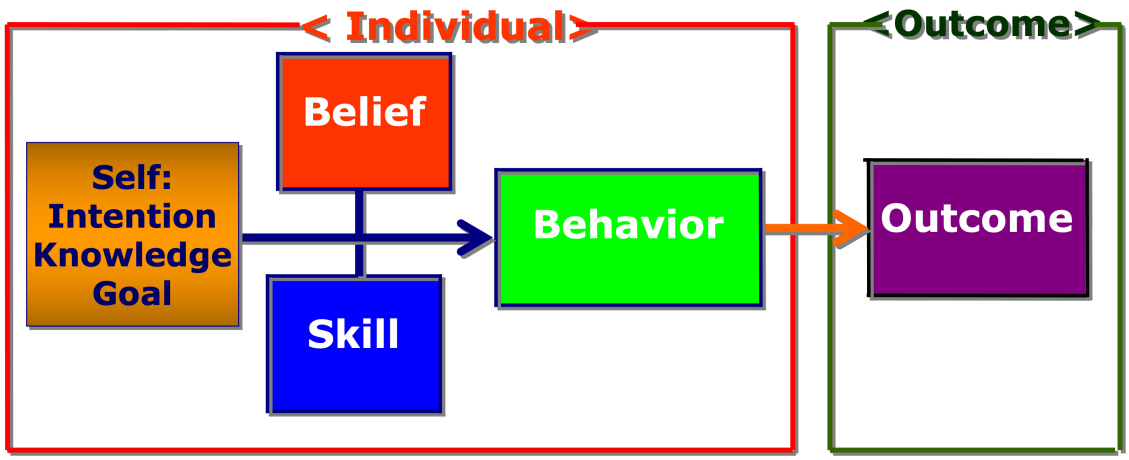
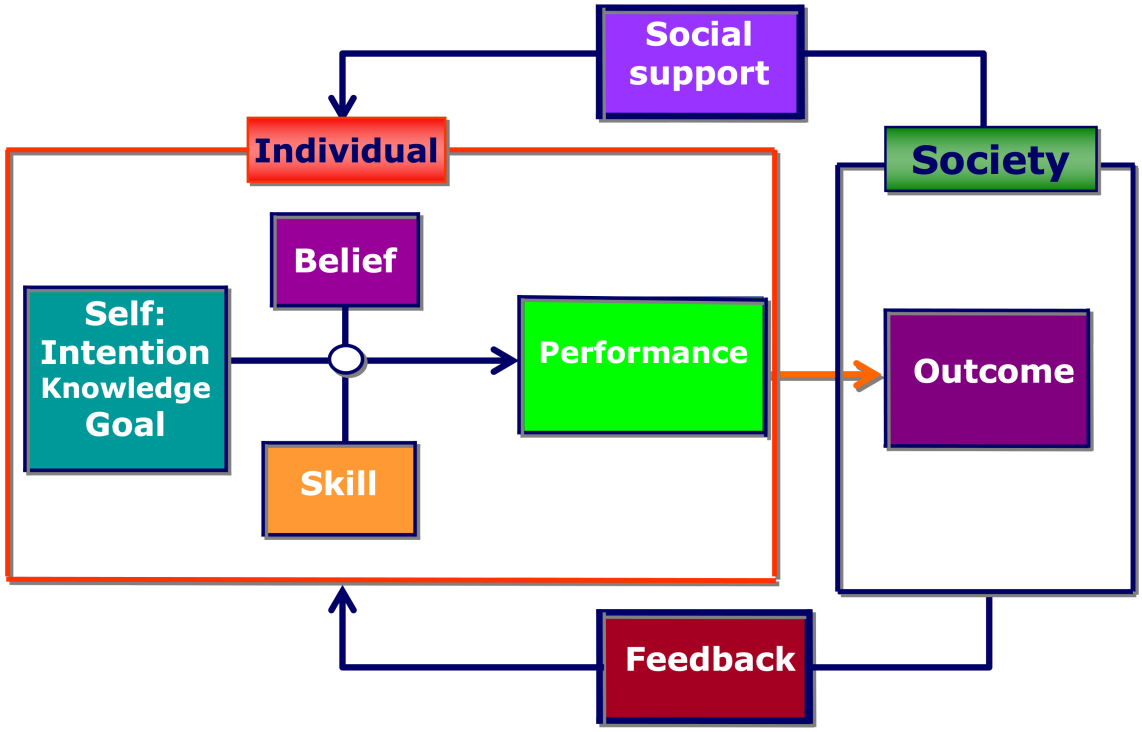


Figure 13: Self-efficacy and social influence



By integrating the triadic reciprocal causation and dual causal linkage model of Bandura (1997), Kim (1999) outlines the transactional model of science where human agency becomes a central and explicit part of the scientific model. (See Figure 14). Bandura (1997) has empirically documented the importance of examining the dual causal linkage (between input-agent and agent-output) in explaining behavior. In this model, human agency and self-efficacy can link Observable Input 1 with Observable Output 2. In this

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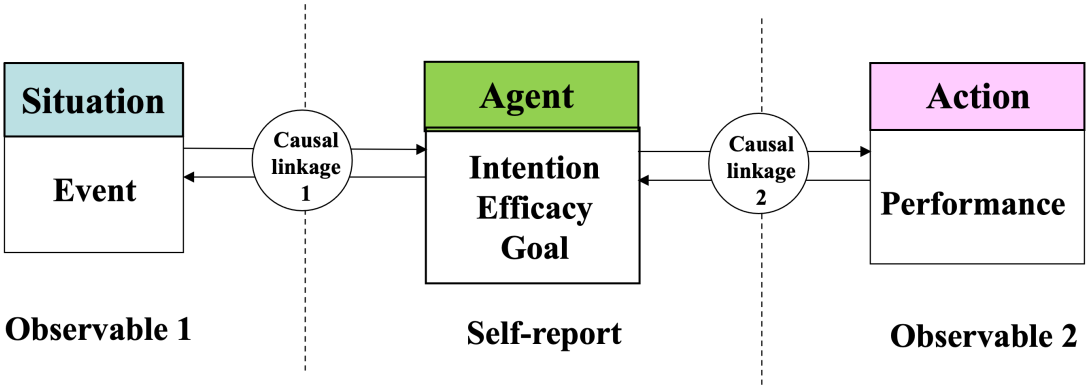
model, humans are agents who have access to their inner consciousness, and they can report their intentions, goals, and efficacy beliefs.

Figure 14: Transactional model of science



The dual causal linkage has been systematically analyzed and documented by Bandura (1997). First, it is important to examine how a person perceives and interprets an event (caused by an external factor or by one's own behavior) and their intention to take a course of action (causal linkage 1). This information can be obtained through self-report through self-efficacy. The second step involves assessing the person's performance (causal linkage 2).

In a study of management effectiveness, Bandura (1997) provided two different groups with preset feedback regardless of their actual performance. In Group 1, he told them that they did much better than the average, but in Group 2, they were informed that they did much worse than the average. He then measured their self-efficacy through self-report. He found that positive feedback increased their self-efficacy in Group 1 and the negative feedback decreased their self-efficacy in Group 2 (causal linkage 1). In the second phase, he measured individuals' actual performance, their use of analytical skills and management effectiveness. Participants in Group 1, who received positive feedback, had higher self-efficacy and were more likely to use efficient analytical skills, be satisfied with their level of performance, and perform well (causal linkage 2). The reverse was true for participants in Group 2, who were given negative feedback: They had lower self-efficacy, used worse analytical skills, and had worse performance.

The causal pathway can be reversed by intervening and increasing or decreasing their self-efficacy. In the second phase, the worse performing participants in Group 2

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are then given positive feedback in Trial 2 that they did well. He found that positive feedback increased, their self-efficacy increased, and their performance improved. The reverse was true when the high performing participants in Group 1 were then given negative feedback in Trial 2. They were told that they did not do well and their self-efficacy decreased, and their performance deteriorated. Thus, the mechanism of the rise or fall in performance can be systematically linked to the rise or fall in their self-efficacy (Bandura, 1997). The mechanism of the rise and decline of analytical skills and performance can be systematically and empirically verified, which is not the case of traditional psychological theories that are unable document the mechanism empirically. Successful performance can increase self-efficacy, which can motivate individuals to seek more challenging goals. The opposite pattern of results are found for failure experiences, which lowered self-efficacy, and the subsequent goal participants set for themselves.

In the within subject and between subject designs, Bandura, Reese and Adams (1982) examined the influence of modelling on self-efficacy among the patients suffering from snake phobia. In the first phase, participants viewed a model handling a snake, then their self-efficacy was assessed through self-report (causal linkage 1). They have found that watching a model cope effectively with the feared snake increases participants' self-efficacy. The second phase involved having the subjects perform the actual task that they observed (causal linkage 2). The results indicated that modelling raised their self-efficacy (causal linkage 1), which in turn increased their level of performance (causal linkage 2). Bandura et al. (1982) subsequently raised the perceived efficacy to a higher level through systematic modelling and found improvements in their performance and cured their snake phobia.

The successful performance of a task can reverse the flow of causality, in which the output can now become input. Successful completion of a task can increase self-efficacy and it can enable the individuals to set a higher goal, or to seek a more challenging environment (Bandura, 1997). Successful mastery experiences can lead to *transformative* changes in a person's life. Bandura (1997) has found that mastery experience of a snake phobia reduced social timidity, increased venturesomeness, boosted self-expressiveness, and increased desires to overcome other fears, such as fear of public speaking. These results cannot be explained by stimulus generalizations or by

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the single, direct, and linear conception of causality. The results can be explained in terms of a transformative change in the personal belief system, an emergent property not reducible to a single cause (Bandura, 1997).

Human agency is basic and provides the basis of the software of the mind that is essential for human survival, development, and creativity. Current advances in paleoanthropology, genetics, neuroscience, and IT allow us to integrate this specialized knowledge with art, music, philosophy, and spirituality. It is the integration and application of knowledge through "connecting the dots in a novel way" that allows creativity and co-creativity with others.

Biology enabling the software of the mind

The innate biological traits and morphological changes are encoded in the genes to guide animals' instinctive behavior (e.g., fixed action pattern and innate releasing mechanism). As Bandura (1997, 2023) points out, humans are able to overcome their biological instincts and drives, and are able to manage their actions through purpose, intentions, and forethought with the goal of managing themselves, their relationships, and the environment. The agentic capability of reasoning, abstract thinking, generative forethoughts, planning, implementation of thoughts into action, the use of syntactic language, empathy, and storing information outside our body represents the software of the mind that differentiates humans from animals (Bandura, 2023; Berger & Hilton-Barber, 2000; Hüther, 2016; Mithen, 2007; Wells, 2002).

It is important to trace how the human agency has developed and transformed the software of the mind, self, and culture. We need to go back 1.1 million years ago when *Homo erectus* learned to control the most powerful and feared element in nature - fire (Gore, 2000). Like all animals, it is our basic instinct to fear the destructive forces of fire. However, we learned to manage the most powerful force in nature by controlling our instinctive fear through understanding the nature of fire. This represents how *Homo erectus* is able to utilize mind over matter to understand that fire spreads when there is dry wood or grass, but it can be extinguished by rain or water. We

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learned to create fire by hitting two rocks or rubbing two sticks together. With this knowledge, we transformed our capabilities, biology, society, and environment.

By the controlled use of fire, predators would not dare to attack us. Fire provided light and heat at night and allowed us to be productive at night, to communicate, and to socialize. We learned to cook food over the fire which tenderized the food, reducing the amount of time needed to chew and digest the food, from 5 hours to one hour. Fire allowed the consumption of inedible parts (e.g., the bones, marrow, and cartilages), removed toxins in roots and vegetables (e.g., cassava and sprouts), and killing pathogenic microbe in egg, fish, and meat. It resulted in reduced digestive track to free up the calories to support a larger brain (Berger & Hilton-Barber, 2000; Mithen, 2007). Cooking food allowed us to increase the calorie intake significantly.

The tenderized food reduced strong facial muscles, jaws, and teeth which are the fifth and sixth morphological difference with chimpanzees. They allowed the gradual increase in the size of the skull to accommodate a larger brain. Aiello and Wheeler (1995) point out that the human brain has a high metabolism since a brain cell requires around 5-16 more calories than a muscle cell. Since the human brain has up to 100 billion neurons with 100 trillion possible connections, even at rest our brain consumes 20% of the body's energy (Hüther, 2016). With the enhanced quality of diet and increased calorie intake through cooking, humans could accommodate a larger brain. This resulted in the brain size 4 times larger than the chimpanzees (Aiello & Wheeler, 1995; See Figure 15). Compared to chimpanzee's skull, humans have a protruding forehead, accommodating a larger frontal lobe, which controls the creativity, empathy, morality, and the executive functions of the brain (Siegel, 2010).

Figure 15: Cranial capacity of homo sapiens and ape family

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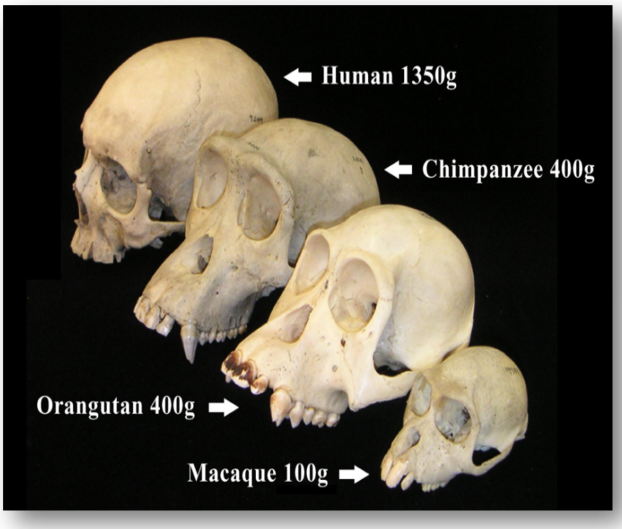

- Orangutans: 275–500 cc
- Chimpanzees: 275–500 cc
- Gorillas: 340–752 cc
- Humans: 1100–1700 cc

With a larger brain, human capabilities became more sophisticated and advanced, and allowed humans to expand cognitive, emotional, and communications skills in planning and executing hunts for large animals (Berger & Hilton-Barber, 2000). Advanced hunting was made possible with the use of advanced tools, communication, and social coordination that enabled humans to hunt for larger animals and obtain larger quantities of food. This in turn supported a larger brain and provided leisure time to develop art, music, and social skills.

Mithen (2007) notes that the brain size began to increase dramatically around 60,000 years ago, which is linked to the evolution of language and laid the foundation for the "creativity explosion" around 40,000 years ago. Language allowed communication and coordination of collective activities and furthered the development of symbolic ideas and conceptual knowledge that connected individual minds into an ever-increasing network. Ideas can be transferred to one another and sharing these ideas helped to create communal construction of complex and abstract ideas. The "language has on an individual is magnified a multitude of times by the manner in which language connects people's minds into a single network" and "ideas are then able to 'migrate' between minds" (Mithen, 2007, p. 1991). The sharing of these ideas "allow the communal construction of extremely delicate and difficult intellectual trajectories and progressions" (Clark, 1996, p. 206). Mithen (2007) notes "the evolution of the brain, language, body, and human culture are all intimately linked to each other and cannot be understood in isolation" (p.1965).

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The second major cognitive transformation is the anchoring of symbolic ideas in a material form with the development of ornaments, jewelry, art, and music. The earliest art forms excavated are: (1) the lion-man figurine dating back to 33,000 years ago, Hohlenstein-Stadel, Germany; (2) the Grotte Chauvet paintings of animals from dating back to 32,000 years ago, France; and (3) the Aurignacian flute made from mammoth ivory, dating back to 33,000 years ago (Conrad, 2007). (See Figure 16). This is the beginning of information technology. Ideas and spoken words are fleeting, and they can remain in the mind of the speaker/listener for a short time. Recording ideas into a material form makes them durable and allows these ideas to be accessed by many others and across time (Mithen, 2007). Possessing opposable thumbs allowed humans to draw, carve rocks, and create ornaments to translate the ideas in our mind into concrete forms and recorded in physical materials.

Figure 16: Lion-man, cave drawing and bone flute

Lion-headed figurine | Grotte Chauvet paintings | Aurignacian flute

Ideas are transformed into symbols, recorded in material form, and became the basis of writing system. The writing system developed to record ideas in different parts of the world: Hieroglyphs in Egypt and Crete, pottery and bone writing, pictograms, and

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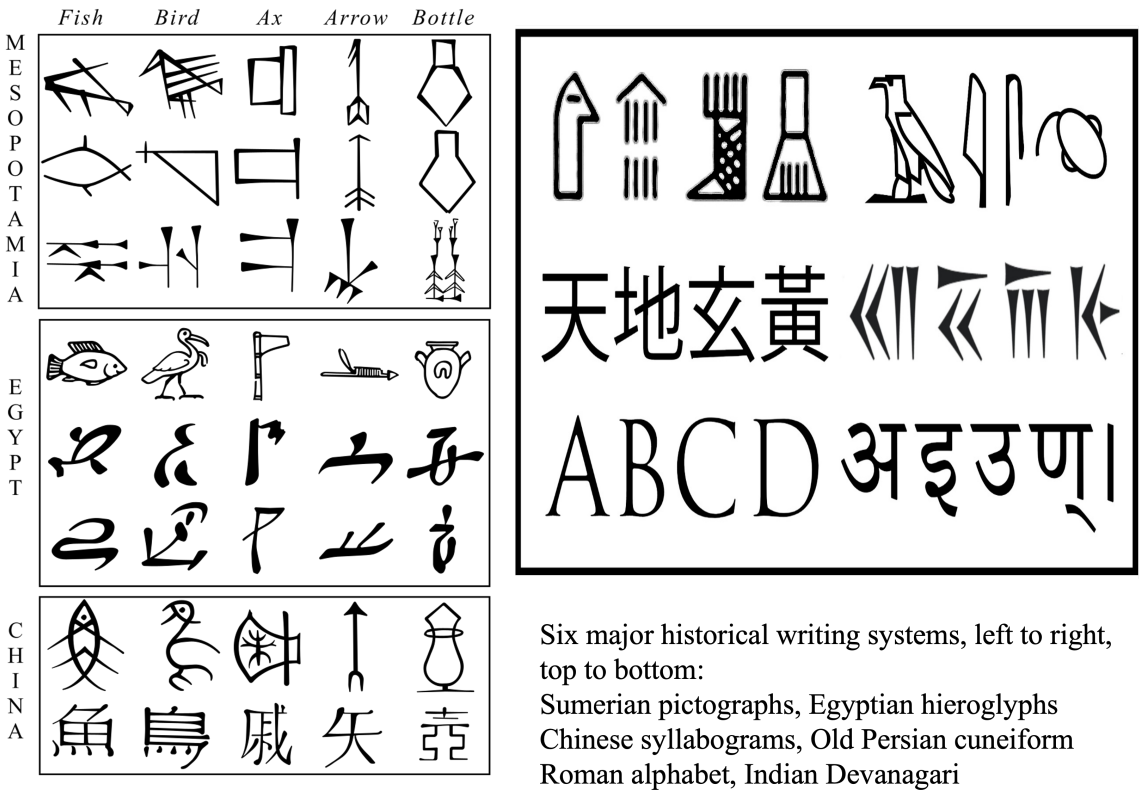
phonetic writing system in China, Indus script in India, and the cuneiform in Sumar, Mesopotamia that became the basis of modern Western alphabet. (See Figure 17). They were written in cave paintings and then in portable clay tablets and papyrus. Children were educated to learn the script to obtain knowledge about farming, social systems, and complex ideas. These information technologies were shared, refined, integrated, and passed onto subsequent generations to influence the collective software of the mind and become the basis of culture.

Figure 17: Early writing systems



Six major historical writing systems, left to right, top to bottom:
Sumerian pictographs, Egyptian hieroglyphs
Chinese syllabograms, Old Persian cuneiform
Roman alphabet, Indian Devanagari

Cuneiform was developed in Mesopotamia 3,500 BC that became the basis of the modern Western alphabet, and the pictograms became the basis of Chinese script. With each succeeding generation, knowledge accumulated, and they were passed on orally, and then, in written form. Industrialization, commerce, science, and technology transformed subsistence economies into industrialized nations. Information technology, democracy and the rule of law protect the rights of individuals in which people enjoy freedom and quality of life that is unparalleled in human history (Kim et al., 2003).

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Although reality is constrained by physical reality, ideas are abstract and fluid. A lion-man cannot exist in nature, but the idea can be captured in a sculpture. These artifacts help to articulate what is impossible possible and to share the ideas, beliefs, and values that are beyond the physical realm (Mithen, 2007). Art and music serve as a "cognitive anchor and extend the capacities of the mind" and allow "information and ideas to be recalled and communicated across time and space far in excess of what a human body and brain are able to do alone" (Mithen, 2007, p.1993). While the human body is the hardware, the ideas that are developed, communicated, shared, and recorded outside our body are the basis of the software of the mind. These ideas are refined, extended, and systematized to become knowledge and the basis of religion, philosophy, and science (Kim & Kim, 2023).

A bonobo monkey named Kanzi learned to communicate with humans using lexigrams. (See Figure 10). However, he cannot teach this learning to the offspring or siblings or store the learned information outside his body. All the knowledge and learning will disappear once he dies. It will not be passed on to the offspring since it is not encoded in his genes or outside his body. This is the central reason why chimpanzees and bonobo monkey have not evolved substantially during the past 6 million years and remain isolated in Western Africa and the Congo facing extinction. Humans can use AI software programs to teach Kanzi through lexigrams and machines, but these are not the qualities of the machine or Kanzi; it is a human quality that we translate, and we impose on the animals through domestication or machines through the software that we have created to run the machines.

The third major transformation is domestication, farming, making pottery, and the creation of bronze around 10,000 years ago to move from the Stone Age to the Brone Age (Mithen, 2007). Cows, goats, pigs, and chickens exist in the wild and humans and our first instinct would be to hunt and kill them for food. We learned to control our instinct and domesticate them, selectively breed them, and raise them as a way of storing and producing food. Similarly, rather than gathering and consuming wild grain, fruits, and vegetables, we have learned to plant, cultivate, and harvest wheat, rice, potatoes, fruits, and vegetables in vast quantities to feed the whole community. This requires a sense of agency with forethought, planning, and execution that only humans can achieve. With increased agricultural efficiency, irrigation and storage, enough food

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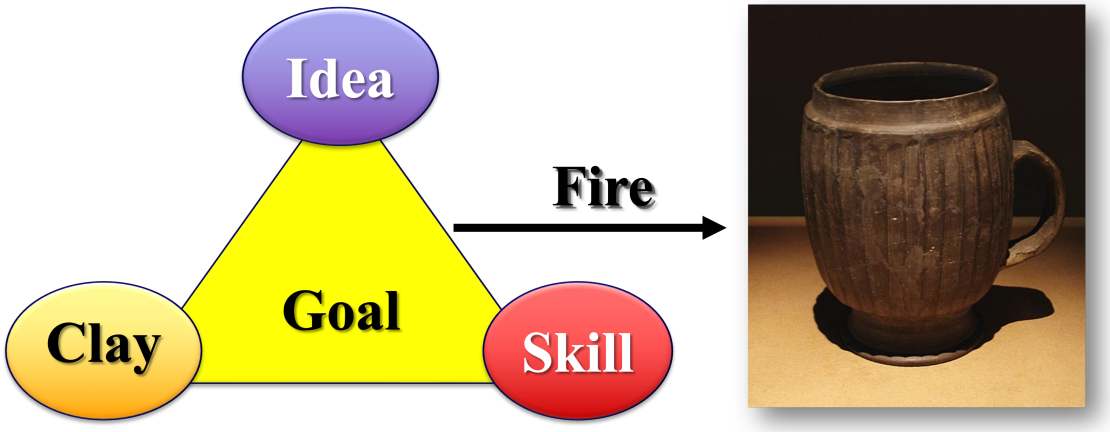
could be produced to support a sedentary lifestyle of many people. They allowed the development of religious, legal, and political institutions to manage people who lived in close proximity (Kim et al., 2002, 2003).

Using the power of fire, the formless clay can be shaped and transformed into pottery. (See Figure 18). Pottery is used to cook food and store water. The most important aspect of pottery starts with the idea of a container. The container can contain *empty space* that could be filled with food or water. Similarly, fire can transform formless clay into bricks. They are the building blocks for creating houses, bridges, and stoves. How can humans transform formless clay into a cup, house, or bridge that does not exist in nature? The most important first step is to have an idea of a container, and we can make a cup from formless clay since we possess the reflective and generative cognitive agency to turn ideas into material forms (Bandura, 2023).

Figure 18: Making a cup



People in different parts of the world began to design and shape clay pottery. Although the design on the outside of the pottery does not have any functional value except its appearance, it creates a sense of identity, a form of self-expression. It became the basis of cultural expression and variations. (See Figure 19). What started out as a self-expression of personal experiences recorded in material form, fueled the First Industrial Revolution, automation, and laid the foundation for the modern computer and the Fourth Industrial Revolution of the AI, Big Data, Blockchain, Drones and Robotics, Smart technologies, and Genetic Engineering.

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Figure 19: Regional and cultural variations

These industries are made possible by Joseph Marie Jacquard (1752 - 1834), who patented the Jacquard Loom in 1804 to mass produce patterned silk fabrics and increase production efficiency. (See Figure 20). The loom is the hardware, and the proliferated papers used to run the loom is the software of the mind. It became the basis of the automated loom that fueled the First Industrial Revolution. The punch card is used to store digital information and software to run the IBM computers. The calculating or computing machine is the hardware and the punch card containing the digitized information is the software. The Jacquard Loom that was used to mass produce beautiful silk fabrics is an example of the software of the mind that paved the way for automation and the modern computer. Steve Jobs points out that art and "design is not just what it looks and feels like. Design is how it works."[12] He created the software iOS and designed the iPod, iPad, and iPhone to be elegant, efficient, and easy to use and revolutionized the smartphone industry.

Figure 20: Jacquard Loom and early IBM computer

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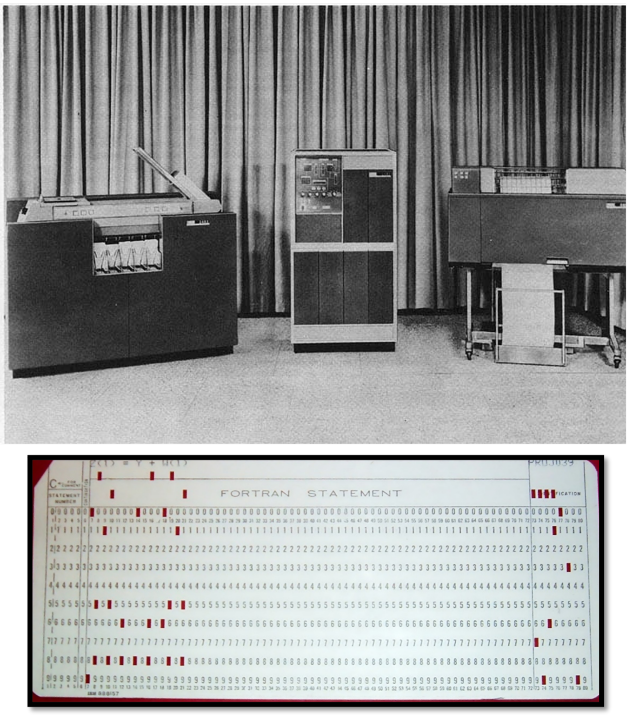
Jacquard Loom, 1804



IBM 1401, 1959 and punch card

Humans have learned to melt rocks to produce bronze which introduced the Bronze Age. Bronze is an alloy of 88% cooper and 12% tin. Iron ores were melted to create iron, which was used to increase agricultural production and later transformed into steel to drive the Industrial Age. Coal, electricity, and uranium are used as a source of energy, and currently, wind, solar, biofuels, and solar panels are used to generate renewable energy. Crude oil became a source of energy, and it is used to create plastic, polyester, microplastic, and chemical components. Berger and Hilton-Barber (2000) point out that humans "are able, if we choose so, to alter our actions in any situation based upon the accumulated knowledge and wisdom of those hundreds of thousands of generation that have preceded us," and "our brain and our ability to communicate our thoughts through language allow us to analyze situations and pass on information at a level that no other animal can, not even our most closely related biological relatives, the chimpanzee" (p. 18). The critical feature that separates humans from other species is the capability of creative forethought, planning, conceptualization, and implementation of ideas into reality through human action (Bandura, 2023; Wells, 2002).

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VI. Western Religion, Philosophy, and Culture

The rise of Western civilization can be traced to the development of Greek philosophy, astronomy, mathematics, physics, physiology, medicine, ethics, politics, and psychology (Leahey, 1987). Philosophy is composed of *philius* (love), and *logos* (knowledge) and it refers to the love of knowledge. It shares the same goal as religion in seeking to understand the fundamental basis of self, society, and the ultimate reality. While religion focuses on supernatural or metaphysical causes, philosophy differs in its basic assumption and uses natural explanations using observations and logic. Philosophy focuses on the human agency to observe, analyze, and integrate to discover natural explanations.

The first philosophers were called cosmologists. They believed that the totality of the universe is ordered and sought to explain the origin, structure, and process that govern the universe. The basic question that emerged is how can this be since humans can only be aware of their own experience and mental state? The question was no longer the nature of the universe, but what we know or can know.

Thales of Miletus (626-548 BC) is considered the father of Greek philosophy and science. He argued for natural explanations rather than supernatural ones. He articulated that the universe consisted of natural substance, governed by natural principles, and did not reflect the whims of gods. The universe is therefore knowable and within the realm of human understanding. He searched for one basic element called *physis* from which all others are derived. He welcomed critical analysis by inviting his students and colleagues to criticize his ideas and improve them. This is a central difference from religion since religion emphasizes acceptance of religious authorities and belief without questioning.

Heraclitus (around 500 BC) observed that everything in nature seems to be in constant state of change. He questioned how something can be known if it's changing all the time? If something is different at two points in time, are they really the same object? How do we know with certainty that they are the same object? Thus, human senses are questionable in the way we acquire knowledge because they could only provide information about a constantly changing world. Parmenides (around 500 BC) took the exact opposite view by stating that all change was an illusion. There is only one reality.

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It is final, uniform, motionless, and fixed, and it could be understood only through reason. Knowledge is obtained through rationality because our sensory experience only provides illusion.

Pythagoras (570-495 BC) believed that everything could be measured and predicted in rhythmic patterns and cycles. The world of numbers could be known in pure form only through reason, not experience. He assumed the dualistic universe: Abstract, permanent, and intellectually knowable universe versus the empirical, changing, and knowable through senses. This became the basis of rationalist tradition in science and philosophy. He developed the Pythagorean Theorem which states that knowing the two lengths of a right-angel triangle, you can predict the third (*a^2 +b^2=c^2)*. However, when it is applied to an actual triangle, the results are not absolute because there is no perfect triangle in the empirical world. This idea was later adopted by Plato and Christian theology.

Socrates (470-399 BC) was committed to using critical reasoning in search for the truth. He was initially interested in the physical world, but later moved to the study of moral character. He became devoted to free thinking and actively engaged in discussions by questioning their beliefs, values, and the certainty of knowledge. He stated that "the unexamined life is not worth living." He is known for introducing the Socratic method of raising questions and then discussing them in a dialogue: What is the basis of morality, virtue, and will? He stated "know thyself," but how does one know oneself and examine one's life? To know oneself, who is the knower (i.e., the subject) and what is the known (i.e., the object)? Can a person become the knower and the known at the same time? This is the starting point of understanding the self. Humans have the capability to understand the self as an object and as a subject.

By raising questions about the self, justice, and truth, Socrates emphasized the importance of critical analysis since it led to a path of true understanding and knowledge. He asked his students the following question: What makes something beautiful, just, and true? He believed that there are general principles and concepts that transcend individual cases, and they are stable and knowable. He aimed to discover the general principles behind the isolated cases and events.

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The Socratic method was revolutionary and contrary to the dogmatic proclamations of religious and political leaders. They viewed his assumption and method as a challenge to their authority and their power to maintain existing social order. The Athenian jury found him guilty, put him in jail, and forced him to drink hemlock for "not honoring the gods and corrupting the mind of the youth." He died in 399 B.C.

Socrates' student Plato (428-348 BC) recorded and expanded his ideas, and his ideas were extended by Aristotle *(384-322 BC).Plato laid the foundation for rationalism and Aristotle laid the foundation for empiricism.* Hippocrates(450-380 BC) laid the foundation for modern medicine by documenting the natural understanding of disease, health, and recovery. Archimedes(287-212 BC)discovered the Principle of Buoyancy through the displacement of water and laid the foundation for the concept of mass and physics.

With the internal wars between Athens and Sparta (431-405 B.C) and the Roman Empire conquest (146 BC) Greek philosophy began to decline. In 376, the Huns invaded the Roman Empire and the German king Odoacer replaced the last emperor in 476. Western Europe went into the Dark Ages. Discussions in philosophy, art, literature, astronomy, and ethics were replaced by poverty, superstitions, and disease.

Catholic church and absolute power

With the fall of the Roman Empire, the Catholic church became the only viable institution with the power to define and control. During the feudal ages, the Catholic Church was at the center, holding the power to define and control people's lives. Even kings had to be anointed and crowned by the Catholic church to obtain legitimacy.

In the Christian worldview, God is at the center, representing the truth and justice, and provided the meaning and purpose of life. Since humans are imperfect and born with original sin, they did not have the capability to understand the truth and whole truth (Kim, 2001). To know the truth, one had to accept the Will and Word of God that are recorded in the Bible. Since only a select few could read Latin and had access to the Bible, people had to rely on the religious authority to define what is reality, truth, and God's Will. Durant (2005) notes that "during the Middle Ages it was customary to

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classify the population of Christendom into *laboratores* (workers), *bellatores*(soldiers), and *oratores* (clergy). The last group, though small in number, monopolized the instruments and opportunities of culture, and ruled with almost unlimited sway half of the most powerful continent on the globe. The clergy, like Plato's guardians, were placed in authority... with the powers of state and church."

The absolute power to define and control began to be questioned in the 16th century and paved the way for humanism, Renaissance, and rationalism. The Council of Trent was held in 1545 to discuss the challenges to their authorities coming from various sources. Through the travel to China, Marco Polo (1254-1324) discovered the superior cultures in Asia that produced silk, cotton, paper, spices, ceramics, and gunpowder. Christopher Columbus (1451-1506) discovered the Americas, which was not mentioned in the Bible.

The most serious issue under discussion is the protest lodged by Martin Luther. In 1517, he challenged the sales of indulgences and posted the 95 Thesis outlining the corruptions of the Catholic Church. The sales of indulgence were needed to fund the building of the St. Peter's Basilica in Vatican City in 1506 to surpass the glory and the grandeur of the Notre Dame Cathedral that was completed in 1260 in Paris. To finance the expensive project that would take more than 120 years, the Catholic Church would receive monetary payment to help people absolve their sins and to be released from the purgatory. Kings, military leaders, and feudal lords paid a large sum to the Church in hopes of absolving their sins and entering heaven. Poor peasants gave their life savings in hopes of entering heaven after a lifetime of suffering.

By 1519, Martin Luther's writing became widely circulated in France, Germany, and Italy. When he was asked to recant and disavow his writing, he refused by stating: "Unless I am convinced by the testimony of the Scriptures or by clear reason... I am bound by the Scriptures I have quoted, and my conscience is captive to the Word of God. I cannot and will not recant anything since it is neither safe nor right to go against conscience" (Brecht, 1999, p. 460). In 1521, he was excommunicated by the Pope Leo X for challenging the authority of the Catholic Church. His rejection of the authority of the Catholic Church and ex-communication launched the Protestant Reformation in Northern Europe. Frederick IIIof Germany protected him and allowed him to stay in

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the Wartburg Castle, where he translated the Bible into German and published it in 1534.

Luther created a community of believers, *Gemeinschaft* and provided education to men and women so that they could read the Bible and define for themselves what is the Will and Word of God. In England, the King James Version of the Bible was completed in 1611. The translation and wide distribution of the Bible from Latin to the common language of the people allowed them to read and define for themselves what is the truth, justice, and meaning of life. It wrested the power to define from the Catholic Church. The publications, sharing of knowledge, and deciding for oneself what is the truth and Will of God paved the way for the Age of Reason.

Theology and science

Petrarch (1304-1374) coined the term Dark Ages in the Middle Ages Europe. He observed that there was an intellectual "Darkness" after the fall of the Roman Empire. He began to read and learn the Classical writing of the Greco-Roman societies. The knowledge obtained from them was illuminating as The Light. He travelled around Europe discovering, translating, and promoting the classic Latin and Greek texts. These texts allowed him to reconstruct their ideas and scholars actively discussed and shared their ideas.

The most significant development for the Catholic church started internally with the rediscovery of the Greek philosophy and the development of theology by Thomas Aquinas (1225-1274). He was a theologian, representing scholasticism. He was influenced by Avicenna or Ibn Sina (980-1037), a Persian Muslim philosopher and physician, who preserved and advanced Greek philosophy in the areas of astronomy, mathematics, physics, psychology, and Islamic theology. Being influenced by Avicenna and using Islamic theology as a guide, Aquinas adopted the natural theory combining Aristotelian philosophy, logic, and observation and harmonized them with Christian beliefs to make the study of the Bible rational, logical, and consistent. This became the basis of Christian theology that was studied in the monastic schools and early European universities.

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Thomas Aquinas embraced Aristotelian cosmology. Aristotle used logic and observations to develop the geocentric view of the universe. Based on Aristotle's observation, the earth is at the center and the moon, sun, and planets revolve around the earth. (See Figure 21). They do not fall to the ground since they are fixed in crystal spheres, and they rotate around Earth in a circular motion at a fixed rate. Heaven is perfect and unchanging, planets move in circular motion, and no objects can enter the universe. In earth, everything moves in a straight line, and they decay and change. Since Aristotelian cosmology was consistent with the literal interpretation of the Bible, the Catholic Church adopted it without questioning.

Figure 21: Aristotelian universe

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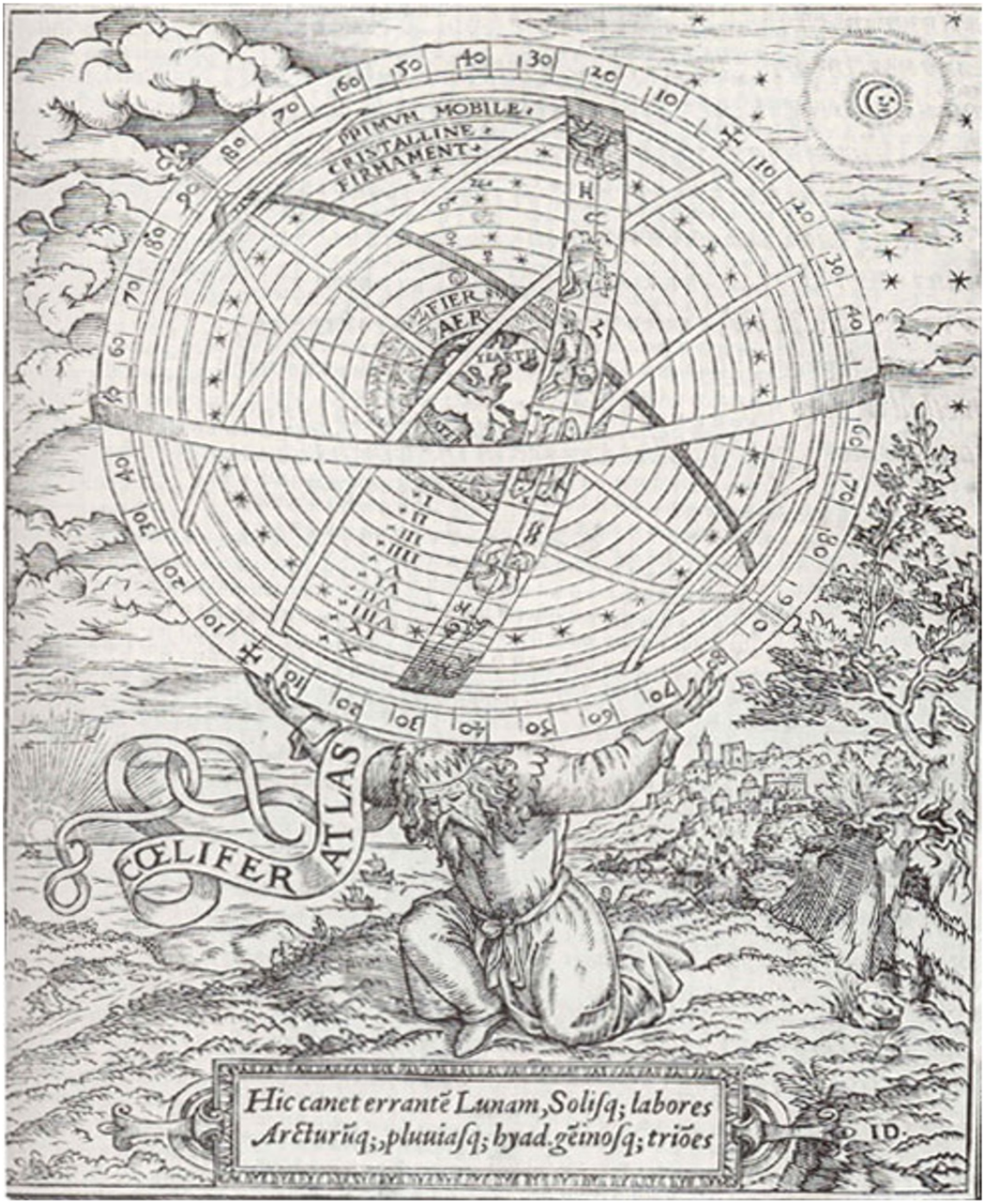

The adoption of the Aristotelian cosmology created a confusion in setting the exact date for Easter, which followed the Jewish Passover, the first Sunday after the first full moon. The Roman solar calendar has 365 days in a year, but the Jewish lunar calendar has 354 days a year, 11 days less than the Roman calendar. In the Aristotelian universe, since both the sun and the moon revolve around the earth, this should not be the case. The difference caused the date of Easter to change every year, like the dates of

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Ramadhan or Chinese New Year which use the lunar calendar. This created confusion and weakened the authority of the Catholic Church. In 1514, the Pope's secretary asked Copernicus to reform the calendar to make it more consistent and reliable (Burke, 1985).

Copernicus (1473-1543), a Polish astronomer and mathematician, proposed in the *Little Commentary* (1514) the Heliocentric model, with the sun at the center, the earth revolves around the sun, and the moon revolves around the earth. This model can explain the difference of 11 days between the lunar and solar calendar. Based on his observations and analysis, he listed his assumptions and logic as follows: "The center of the earth is not the center of the universe, but only the center towards which heavy bodies move and the center of the lunar sphere. All the spheres surround the sun as if it were in the middle of them all, and therefore the center of the universe is near the sun... The earth together with its circumjacent elements performs a complete rotation on its fixed poles in a daily motion, while the firmament and highest heaven abide unchanged. What appear to us as motions of the sun arise not from its motion but from the motion of the earth and our sphere, with which we revolve about the sun like any other planet" (Rosen, 2004/1939, p. 58-59). He did not publish his findings until 1543, just before his death since it contradicted the teachings of the Catholic Church.

Galileo Galilei (1564-1642) was an Italian astronomer, physicist, and engineer and he was more confrontational. In 1609, he built a telescope to magnify distant objects by nine times. On January 10, 1610, he noticed that one of the stars near Jupiter was moving and subsequently discovered Jupiter's four moons. His observation of the phases of Venus confirmed the Copernican view of the solar system (i.e., Venus revolves around the sun and not the earth). He documented the sunspots and the hills and valleys of the moon, challenging Aristotelian cosmology of perfect and unchanging heaven. He stated that: "This and other facts, not few in number or less worth knowing, I have succeeded in proving; and what I consider more important, there have been opened up to this vast and most excellent science, of which my work is merely the beginning, ways and means by which other minds more acute than mine will explore its remote corners" (Galilei,1954/1638). In 1633, the Catholic Church tried him for heresy and condemned him to house arrest until he died in 1642.

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Tycho Brahe (1546-1601), a Danish astronomer, received a grant from the King Frederick II to build the first large-scale observatory on the island of Hven, Denmark. He developed accurate instruments, hired nearly 100 students and artisans, and recorded the location of the stars and planets from 1576 to 1597. He introduced a hybrid model of the universe with epicycles, with planets orbiting the sun and the sun orbiting the earth.

It was his student, Johannes Kepler (1571-1630), a German astronomer and mathematicians, who had a breakthrough organizing Tycho Brahe's massive dataset. He adopted the Copernican Heliocentric model to formulate the Three Laws of Planetary Motion: 1) The orbit of a planet is an ellipse, with the Sun at one of the two foci, 2) a line segment joining a planet and the Sun sweeps out equal areas during equal intervals of time, and 3) the square of a planet's orbital period is proportional to the cube of the length of the semi-major axis of its orbit. Kepler's breakthrough challenged the views of the Catholic Church, but he could not explain the planetary motion.

Isaac Newton (1642-1727) provided a comprehensive explanation of planetary motion in the book entitled, *Mathematical Principles of Natural Philosophy* (1687). In 1675, he wrote to Robert Hook stating that "If I have seen further, it is by standing on the shoulders of Giants" referring to Nicolaus Copernicus, Galileo Galilei, Tycho Brahe, and Johannes Kepler. A multitude of scholars have seen apples fall to the ground, but they did not discover the law of gravity. Newton's rationale has been documented by William Stukeley: "We drank tea under the shade of some apple trees, and the notion of gravitation came into his mind: 'why should that apple always descend perpendicularly to the ground,' and 'why should it not go sideways, or upwards, but constantly to the earth's center'? The reason is that the earth draws it. There must be a drawing power in matter and the sum of the drawing power in the matter of the earth must be in the earth's center, not in any side of the earth. This apple falls perpendicularly, or toward the center. If matter thus draws matter; it must be in proportion of its quantity. Therefore, the apple draws the earth, as well as the earth draws the apple" (Hamblyn, 2011).[13]

The Newtonian Law of Universal Gravitation can integrate, explain, and predict the motion of the planets, the tides, the trajectory of comets, and the precession of the

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equinoxes. He predicted the appearance, time and exact location of Haley's comet with a tail pointing away from the sun and went through the crystalline spheres of Aristotle's universe. He demonstrated that the principles of the motion of planets can be applied to objects on earth and introduced the Three Laws of Motion: 1) The law of inertia, 2) $F = ma$, and 3) The law action and reaction.

Humanism and the Renaissance

A picture is worth a thousand words and in mediaeval European paintings, the focus and the center were on the representatives of God, Jesus, and Virgin Mary. (See Figure 22). Humans are in the background with muted expressions and showing reverence for Jesus and Virgin Mary. The Renaissance represents a cultural revolution, a change in perspective, the assumption, and a shift away from the religious worldview to the human-centered worldview, or humanism. In the Louvre Museum, one painting attracts more attention than any other artwork. Throughout the day people queue to catch a glimpse of Mona Lisa. Why does this painting attract so much attention?

Figure 22: God at the center

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Mona Lisa was painted by Leonardo da Vinci (1452-1519), who represents the Renaissance and Humanist ideals. Mona Lisa was not a saint nobility, and she did not possess extraordinary beauty. She is a plain-looking commoner and wife of a silk merchant. (See Figure 23). There is, however, a striking difference in the perspective between Mona Lisa and the mediaeval paintings. The figure and ground relationship is reversed, representing a shift in perception and assumption. She is at the center of the painting and the landscape is in the background. She has an expression, the Mona Lisa's smile, that expresses her inner thoughts and emotions. She is looking at the viewer: Her eyes appear to follow us around as we move across the room, suggesting that she is alive, a subject with agency.

Figure 23: Mona Lisa at the center

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Humanism emphasizes human agency to understand the world, moving away from the dogma of the Catholic Church. Rather than viewing humans as sinful and the world as a forsaken place, humans are considered to be beautiful during the Renaissance. In the

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mediaeval period, the human body was the symbol of lust and sin, and it was covered. In contrast, the sculpture of David by Michelangelo celebrates the beauty of the human body.

William Shakespeare (1564 -1616), an English playwright and poet, embodies the spirit of humanism in the 39 plays, 154 sonnets, and poems and verses. He puts the inner life of average people on stage and reveals their emotions, desires, and struggles (e.g., Romeo and Juliet, As you Like It, Othello, and King Lear). In the famous play, Hamlet proclaimed:

> *What a piece of work is a man, how noble in reason,*
>
> *How infinite in faculty,*
>
> *In form and moving how express and admirable,*
>
> *In action, how like an angel in apprehension, how like a god,*
>
> *The beauty of the world, the paragon of animals* (Hamlet, II, ii, 300-303; Leahey, 1987, p. 79).

René Descartes (1596-1650) was a devout Christian and the father of modern philosophy and mathematics. He developed the Cartesian X-Y coordinate system to map space and motion mathematically. (See Figure 24). In physiology, he was the first to describe the reflex arc (e.g., knee jerk reflex), which operates automatically through the spinal cord and not the brain. It is not a voluntary, meaningful, or conscious action. (See Figure 25).

Figure 24: Cartesian coordinate system

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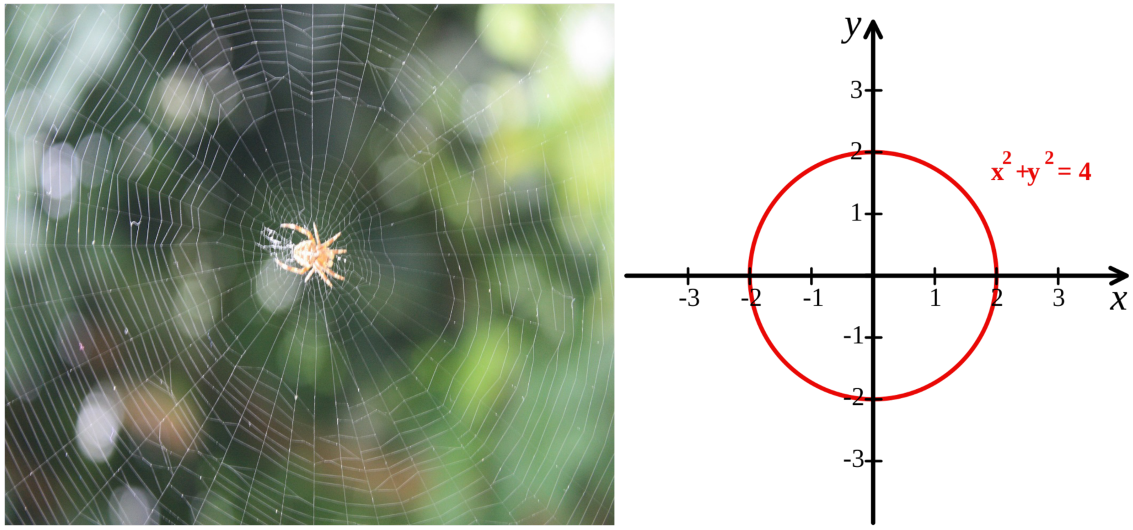

Figure 25: Knee jerk reflex

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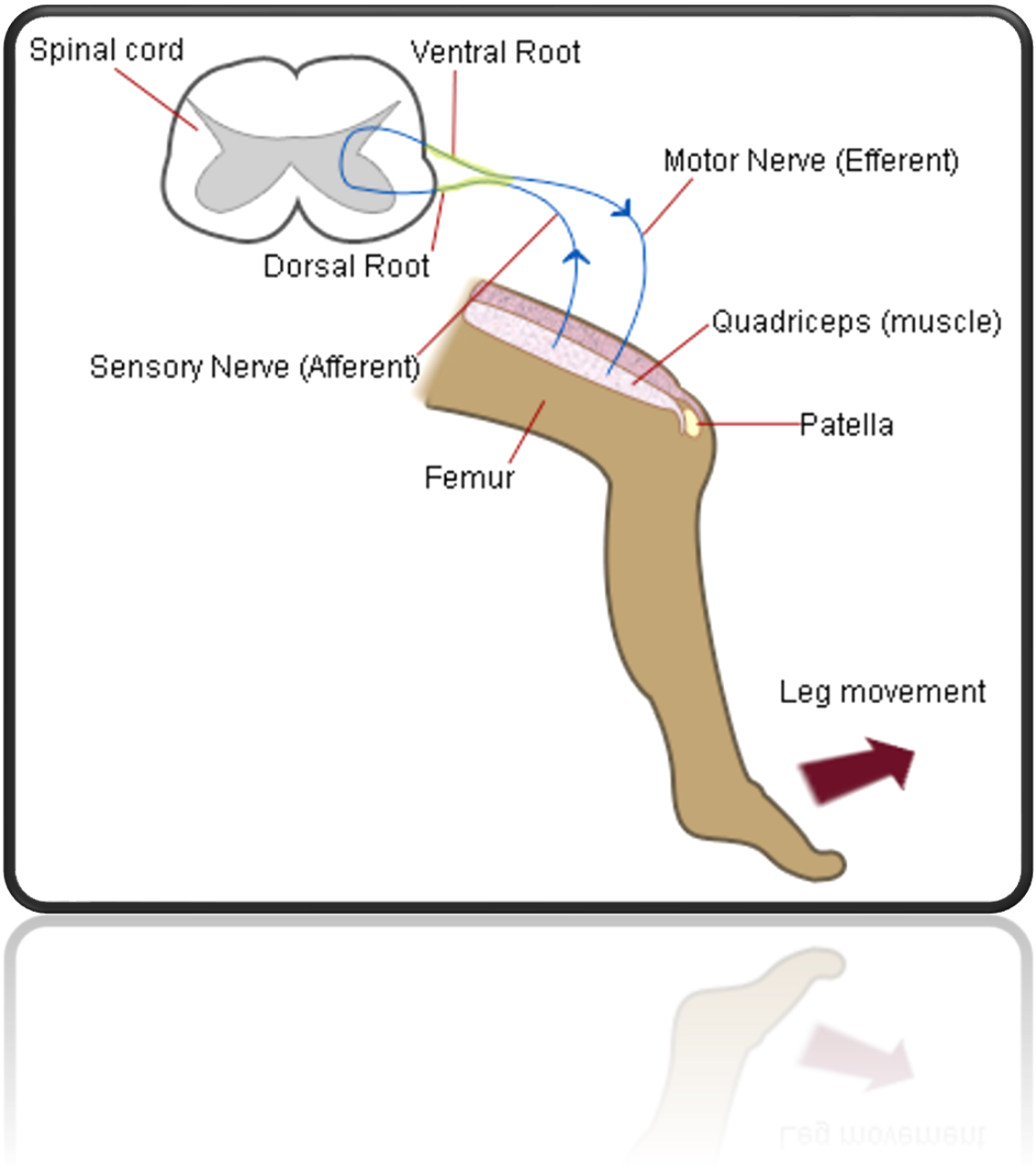

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Descartes was living in a turbulent time with many conflicting ideas, doctrines, and discoveries. His religious beliefs conflicted with his ability to understand mathematics and the natural world outlined by Copernicus and Galileo. He decided to adopt methodological skepticism, or Cartesian doubt, in which he could reject his perception, ideas, beliefs, and religious doctrines. There is, however, one thing he could not doubt or deny with absolute certainty - his existence. This led him to conclude *"je pense, donc je suis"* (*cogito, ergo sums* in Latin, "I think, therefore I am").

In the book *Discourse on the Method* (1637), he concluded that the fact that he doubted his existence (cognition), someone must be doing the doubting (the subject) and the ability to doubt provides evidence that he existed. His fundamental question was: "How do I know I exist?" He concluded that it is through rationality and reason that he could verify his existence with certainty. (See Figure 26). Through rationality and reason, he could understand his existence, the mathematical laws, and the scientific discoveries. Descartes concluded that rationality is a gift from God that allowed humans to know and worship God. It is the basis for understanding the self, scientific discoveries, and mathematical truths.

Figure 26: Descartes' discovery of self, truth

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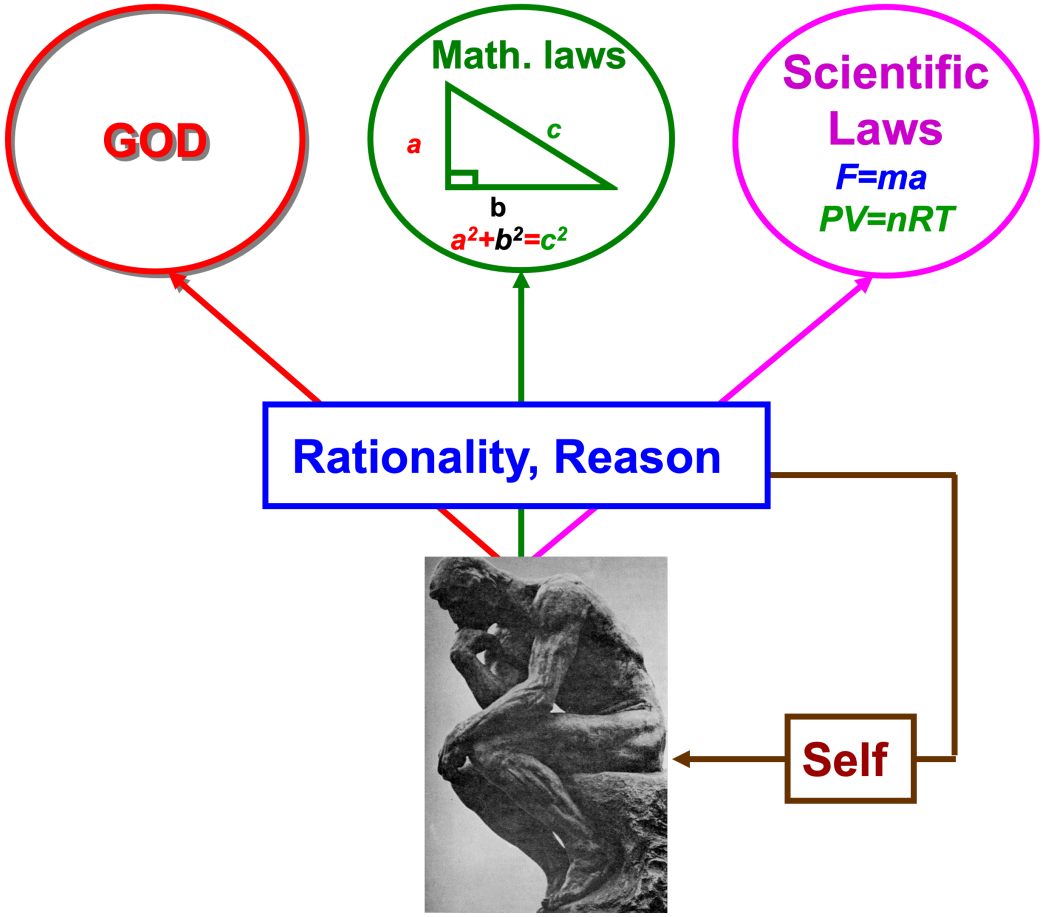

Rationality is what separates humans from animals. Our body is controlled by natural instincts, as evidenced by the reflex arc, which is beyond our conscious control. In contrast, rationality allows us to accept God, one's existence, and the mathematical and scientific laws. This became known as the Cartesian dualism, the separation and the duality of the mind and body: "We can clearly perceive a substance apart from the mode which we say differs from it, whereas we cannot, conversely, understand the mode apart from the substance" (Cunning, 2014, p. 278). For Descartes, the substance represents the hardware, or the body, and the mode refers to the software of the mind; they are separate but connected.

Descartes's discoveries influenced the Christian worldview. His ideas allowed the separation of science that investigates the natural world from the Church that focuses on morality, ethics, and God. His views created a duality of thought, a dichotomy of the world between mind and body, good and bad, light and darkness, and heaven and earth. Life came to be viewed as a struggle between truth and evil, light and darkness, life and

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death, and led Hamlet to question: "To be or not to be, that is the question." (See Figures 27 and 28).

Figure 27: Cartesian duality

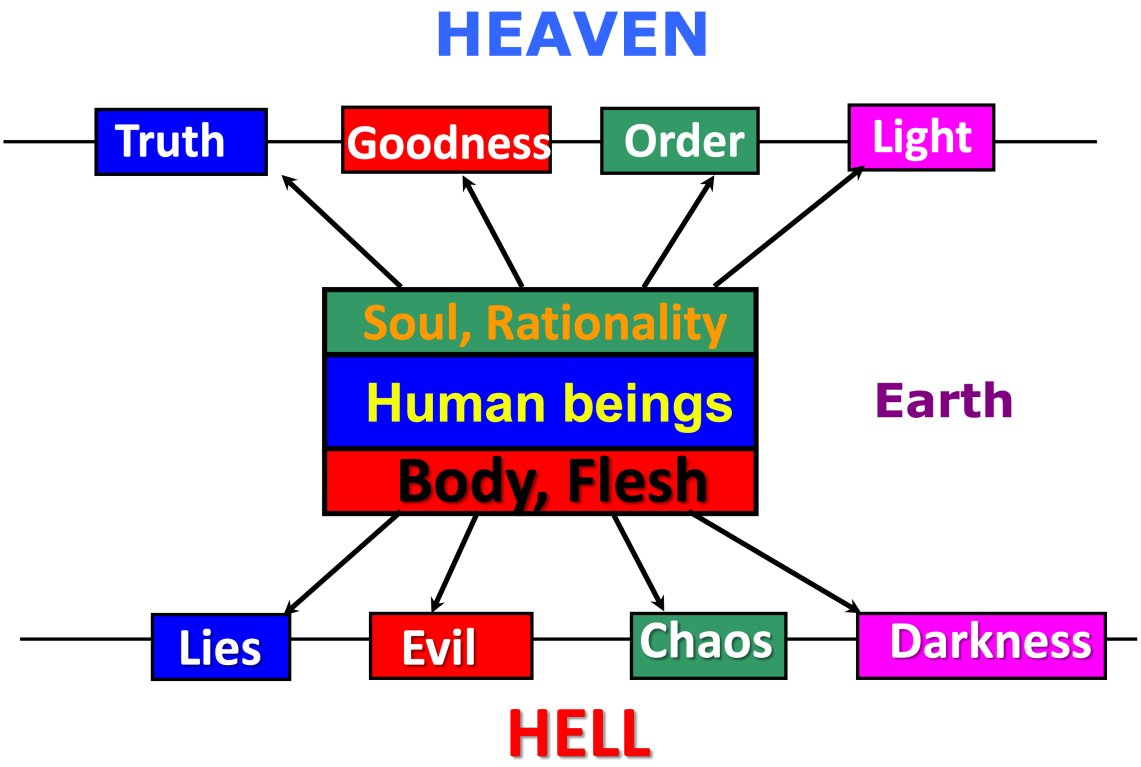

Figure 28: Cartesian duality

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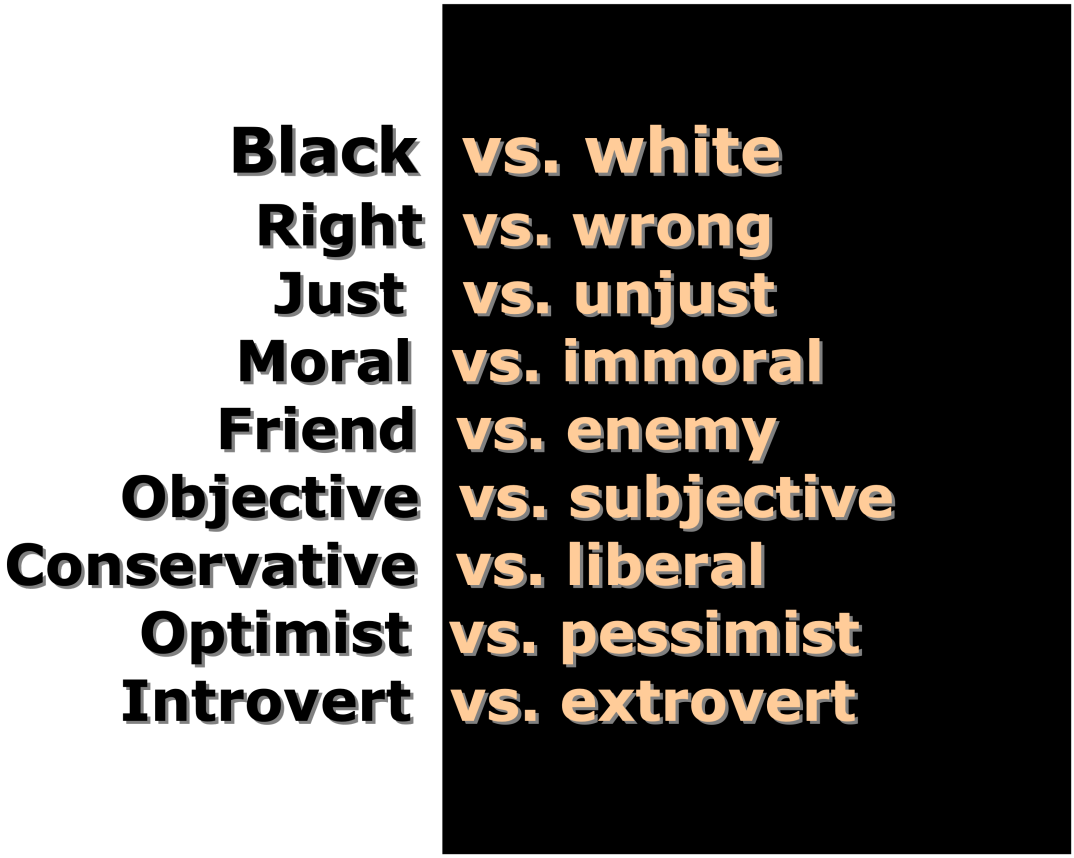

Descartes' discovery of the self, using the method of radical doubt, is an individualistic endeavor. An arbitrary authority cannot proclaim what is right, true, or just, since only he alone can decide the absolute. Only individuals can know with certainty what is true. This became the foundation of liberalism. In the Western court of law, people are asked to swear "to tell the truth, the whole truth and nothing but the truth." However, is what a person knows the truth, the whole truth, and nothing but the truth?

Similar to Plato, Emmanuel Kant (1724-1804) focused on the inner workings of the mind in logic, mathematics, and ethics and emphasized rationalism. Paralleling Aristotle, James Stuart Mill (1773-1836) focused on empiricism, stating that all knowledge comes from and is tested through experiences (i.e., *tabla rasa*). In both approaches, rationality is the pillar upon which Western philosophy, science, and society are constructed, and liberal arts education provides the basic training. Based on this belief, Western laws and institutions are created. Only those individuals who are rational are allowed to participate in the democratic decision-making process. Children, the mentally insane, and criminals are not given the basic right to vote. Western democracy assumes that through

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democratic discussion rational individuals can arrive at the truth and create a just society.

Liberal philosophy

In the West, liberal philosophy is an extension and refinement of Greek philosophy focusing and understanding knowledge about the self, ethics, and society. Liberalism is a moral and political philosophy that represents a sharp break from the traditional ascribed, communal, and religious order. It rejects arbitrary authorities and pre-defined conceptions that attempt to propagate and reify existing social order (Feinberg, 1973). It advocates an individualistic, universal, and abstract conception of the self, detached from situations and roles (Gewirth, 1982). Individuals are viewed as being autonomous, rational, and goal-directed, and they should be allowed to freely choose their own goals and purposes (Taylor, 1985). The content of what is considered good, desirable, or worthy should be left to the individual (Taylor, 1985). The role of the state is to protect the individual rights that are basic and inalienable (Dworkin, 1977). All individuals, as humans, hold inalienable rights equally, regardless of their status, gender, and cultural background.

The United Nations Universal Declaration of Human Rights (1948) represents the liberal conception of humans and rights. It affirms equal human worth and advocates that all individuals have an equal right to life and liberty: "all human beings are born free and equal in dignity and rights" (Article 1). The Bill of Rights and the Constitution of the United States guarantee and protect inalienable rights for all citizens (e.g., freedom of speech, being considered innocent until proven guilty, the right to bear arms, and democratic representation). These rights are called inalienable since they cannot be taken away or exploited by powerful authorities. They guard against the "totalitarian menace" (Taylor, 1985), such as Adolf Hitler, Joseph Stalin, Pol Pot, Mao Zedong, and Kim Il-Sung, which could oppress, harass, and torture individuals for their national interests (Berlin, 1967). These rights protect individuals' autonomy and freedom to pursue their own goals (i.e., the principle of non-interference), as long as they do not interfere with the rights of others (Scanlon, 1978).

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Rule of laws is institutionalized to guarantee and protect individual rights. They impose stringent obligations to second parties so they will not act in a harmful way. They protect the welfare of the disadvantaged, defenseless, and powerless (e.g., children, elderly, and the people with disabilities). Lee (1991) points out that "rights characteristically function to protect a sphere of autonomy and fundamental interests of individuals by providing a normative category that is typically mandatory, definite, and binding" (p. 16). These institutionalized rights are seen as the cornerstone of Western individualism: Individual rights are political *trumps* held by individuals. Individuals have rights and a collective good is not a sufficient justification for denying them what they wish and for imposing loss or injury upon them (Dworkin, 1977).

Although the principles of rights are abstract, they are socially and legally defined and implemented in a particular society. A right consists of four central elements: liberty, power, claim, and immunity (Hohfeld, 1917). They are exercised when one party makes a claim against another: When one person infringes upon the rights of another, the victim can demand reparation. If one party fails to fulfill a contract, then the latter could sue for damages. Assertion or denial of rights is essentially adversarial. For a claim to be upheld, it is adjudicated by a non-partisan third party and fully validated by a legal principle.

An individual's rights could be limited if it is perceived to undermine the viability of public institutions. In The United Nations Universal Declaration of Human Rights (1948), an individual's rights are upheld as long as those rights do not "infringe on rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society" (Article 29/1). Similarly, the European Convention of Human Rights (1987) curtails individual rights for the "interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others" (Article 8/2).

At the societal level, a liberal conception of rights focuses on the individual and on negative rights (i.e., non-interference), but it lacks a clear definition collective good, dignity, and social welfare (e.g., health, education, happiness, and well-being (Gewirth, 1982). Individuals, and not a collective body, should decide the person's goals. For this

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reason, rights are stated in negative terms, or as an "opportunity concept" (e.g., pursuit of any determinate ends; Taylor, 1985).

Sandel (1984) notes that an ideal society consists of a mere aggregate of rational, self-interested, and mutually disinterested choosers. Kant (1959) conceived of an ideal society to consist of "free and rational sovereigns in the kingdom of ends" (p. 53). Collective good and social welfare represent a weak version of rights called the *manifesto sense of rights* (Feinberg, 1973). Manifesto rights (e.g., human dignity, education, health, well-being, and pursuit of happiness) involve no corresponding duties of others and they are not "mandatory, definite, and binding" (Lee, 1991).

In the West, liberalism focuses on a rational individual's rights to freely choose, define, and search for self-fulfillment and they have been empirically verified through the research on individualism and collectivism (Hofstede, 1991; Kim, 1995; Kim et al, 1994; Schwartz, 1994). The content of self-fulfillment depends on the goals that an individual freely chooses. The nature of the goal can vary from hedonistic fulfillment to self-actualization. This freedom of choice is collectively guaranteed by human rights, rule of law, and the Constitution of the USA (Kim, 2003).

Psychology has adopted the individual as the basic unit of analysis and relationships, social welfare, and social harmony are in the periphery. Existing psychological theories largely focus on cognitive or biological perspectives (e.g., motivational theories of Skinner and Hull, developmental theories of Piaget and Kohlberg, trait theories in personality, Spearman theory of intelligence, Eckman's theory of emotion and Bowlby's attachment theory). Azuma (1984) points out Western psychologists cannot appreciate phenomena found outside of their culture and articulated the necessity of developing indigenous and culture psychology: "When a psychologist looks at a non-Western culture through Western glasses, he may fail to notice important aspects of the non-Western culture since the schemata for recognizing them are not provided by his science" (p. 49).

VII. East Asian Relatedness, Empathy, and Harmony

Kim, U. (2024). Understanding the software of the mind, self, and culture: Analysis of the secrets to happiness, health, and long life. In *Proceedings of the Paris Institute for Advanced Study* (Vol. 21). https://paris.pias.science/article/understanding-the-software-of-the-mind-self-and-culture-analysis-of-the-secrets-to-happiness-health-and-long-life 2024/3 - paris-ias-ideas - Article No.4. Freely available at https://paris.pias.science/article/understanding-the-software-of-the-mind-self-and-culture-analysis-of-the-secrets-to-happiness-health-and-long-life - ISSN 2826-2832/© 2025 Kim U.

Rather than viewing the world in the dichotomous black and white, in Asia there is an emphasis on relatedness and the whole. Rather than black and white as a duality or contrast, it can be viewed as a relatedness connected through the shades of grey. (See Figure 29). The basic difference in cultures starts with the assumption of what it means to be human and how we relate to each other. In Korea and Japan, the Chinese character for human is *ingan* (人間, "human between"). Mencius (2004) stated: "When you see a child drowning in a well, if you do not feel compassion, you are not human" (II/A/6). In East Asia, humans are viewed as being related and they have the capacity to feel compassion and empathy. Confucianism focuses on the relationship and emotions that connect people together.

Figure 29: Shades of grey

Confucianism

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In order to understand East Asian cultures, we need to look at the epistemological basis of Confucianism. In East Asia, traditional epistemology emphasizes relatedness and connectedness of the people to one another, to nature, and to the spiritual world. In East Asian landscape art, humans are placed in the periphery, within the context of the interconnectedness of people and nature, emphasizing harmony (See Figure 31). In agricultural communities, people worked together in collective harmony, and planting rice together in wet paddies is an example of social cooperation. (See Figure 30). In the back-breaking work, people sing together rhythmically and encourage each other to work in unison to create a social bond and cohesion, similar to a mother singing to her infant.

Figure 30: Traditional Korean landscape painting

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Figure 31: Rice planting

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Confucius (551-479 BC) saw the universe and all living things as a manifestation of a unifying force called the *Dao* (道, "Truth, Unity, or the Way"; Kim, 1995; Kim, et al., 2006). It is the essence and basis of life that perpetuates order, goodness, and virtue (Lew, 1977). It is qualitatively different from the conception of God, a Being who has created the universe and all living things, including human beings. *Dao* manifests itself in the harmonious balance between *yin* (陰 , "earth, femaleness, absorption") and *yang* (陽, "heaven, maleness, activity") and in humans through *te* (德, "Virtue"). Virtue is a gift from the Heaven that connects the individual to heaven (Lew, 1977). It is through Virtuethat a person is able to know the Heavenly Truth and it is the "locus where Heaven and I meet" (Lew, 1977, p. 154). Virtue is the East Asian counterpart to rationalism that Descartes articulated. Virtue can be realized through self-cultivation within oneself and feeling compassion for others. It provides the fundamental source of insight and the strength to rule peacefully within oneself, family, nation, and the world.

Confucius distinguished two competing forces within oneself: the first-order desires (e.g., material and selfish desires) and the second-order desires (i.e., virtues of knowledge and human-heartedness). To be a virtuous person or a learned person, one

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must overcome first-order desires and cultivate second-order desires. An inferior person is governed by egocentrism, selfishness, narcissism, and *li* ("profit"). Confucius pointed out that a learned person cultivates the virtues of Rightness and Human-heartedness: "the superior man comprehends *yi* ("Rightness"); and the small man comprehends *li* ("Profit")" (Analects, IV, 16). True freedom is obtained by overcoming first-order desires through self-cultivation. Self-cultivation from within, coupled with care and support received parents and friends, one can become a moral, virtuous, and free person. A virtuous person promotes collective good and social harmony spontaneously and naturally.

Self-cultivation is the basis of knowledge and a learned person: "It is these things that cause me concern - failure to cultivate virtue, failure to go more deeply into what I have learned, inability when I am told what is right and to move to where it is, and inability to reform myself when I have defects." (Confucius, Analects, VII.3). Self-cultivation is a continuous endeavor: "Every day I examine myself on three counts. In what I have undertaken on another's behalf, have I failed to do my best? In my dealings with my friends have I failed to be trustworthy in what I say? Have I passed on to others anything that I have not tried out myself?" (I.4).

The first and the most important aspect of the self is *ren* (仁, "human-heartedness," depicting two hearts connected as one). (See Figure 31). In Figure 32, the Confucian model of development is outlined that represents a different assumption, starting point, and the goal compared to the Western individualism. Children are born with the capacity to experience Human-heartednessand through which they become connected to their parents, siblings, friends, and others. There are two inter-related aspects of virtue: *ren* ("human-heartedness") and *yi* (義, "rightness: and "oughtness"). *Ren* or human-heartedness is essentially interpersonal and others-oriented. Confucius pointed out: Human-heartedness *ren*"consists in loving others" (Analects, XII, 22); "the person of *ren* is one who, desiring to sustain oneself, sustains others, and desiring to develop oneself, develops others" (VI, 28); and one should not do to others "what you do not wish yourself" (Analects XII, 2).

Figure 32: Confucian philosophy

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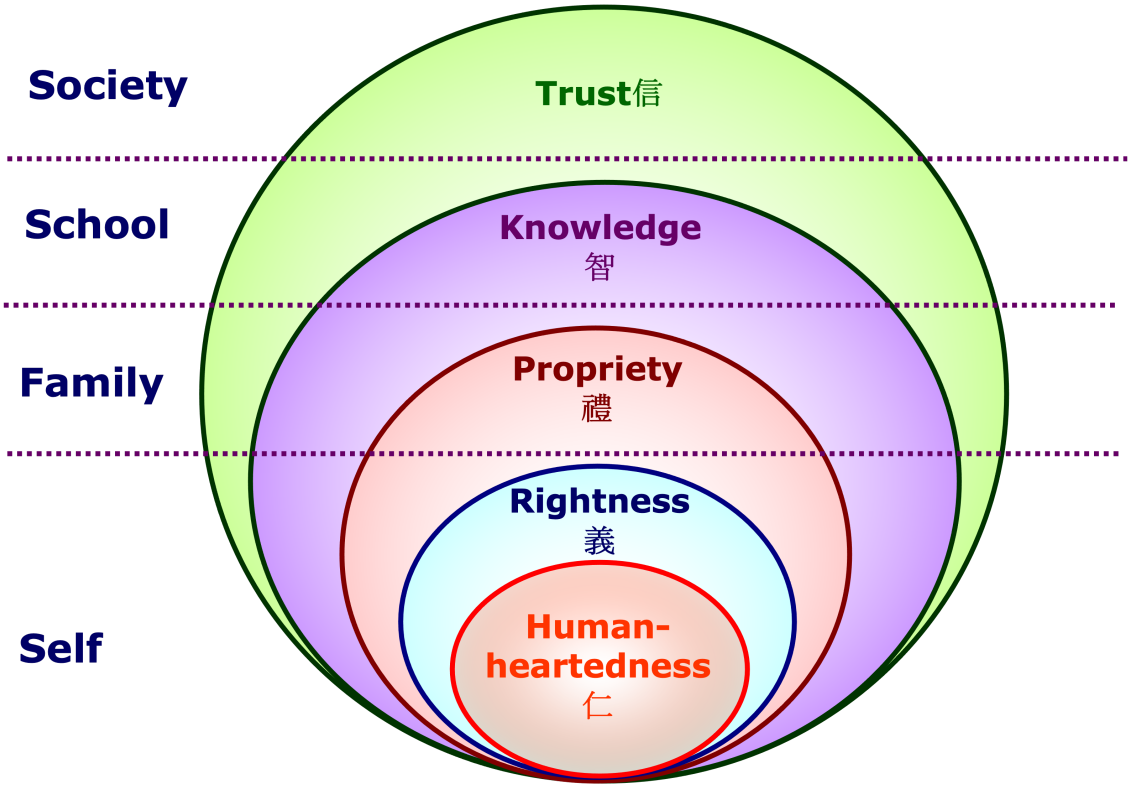

There is a need to translate philosophical ideas into psychological concepts so that empirical studies can be conducted. In psychology, the Korean indigenous concept of *jung* (情, "affection and attachment") represents the philosophical concept of *ren* (仁, "human-heartedness"). It starts with opening your heart and mind to others, caring for them and doing for them without being told. It develops by spending a long time together in order to experience difficulties together, sacrifice for one another, and not to be calculating. Results from empirical studies indicate that *jung*arises from a close-knit family and friends who spend a long time together (Choi et al.,1997). *Jung* does not develop in a contractual, commercial, and rational relationship. Someone without *jung*is described as being conditional, selfish, hypocritical, apathetic, rational, self-reliant, independent, and autonomous. It does not develop with people who are individualistic, selfish, rational, and powerful. The unique feature of *jung*is that it does not develop intentionally, but it develops when you spend a long time together (e.g., companionship) and even with people you dislike. Once it develops, it lasts a long time, even after separation for many years. Results from empirical studies indicate that it serves as the central emotional bond in parent-child relationships and other close relationships in Korea (Kim, 1995; Choi et al., 1997).

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In Japan, the concept of *amae* (甘え, "the act of requesting and receive a special favor in close relationships" and it is related to Human-heartedness (Kim & Yamaguchi, 2005). Yamaguchi and Ariizumi (2006) empirically document the importance of *amae* in Japan in early childhood, but it continues to adulthood when people ask for special favors even when they know that is it inappropriate to ask such favors. They define *amae* as "the presumed acceptance of one's inappropriate request or behavior" (p. 154-165) and it occurs in close relationships during a particular circumstance of need. On the surface, it appears to be dependence, but it is an active use of proxy control to receive a special favor in close relationships.

The second concept *yi*(義, rightness) notes that an individual is born into a particular family with a particular status and role. Confucius considered society to be hierarchically ordered, necessitating that people fulfil their duties: "Let the ruler be ruler a ruler, the subject a subject, the father a father, the son a son" (Confucius, 1979; Analects, XII, 11). Rightness articulates that individuals must fulfil their duties as defined by one's role as a father, mother, friend, elder, teacher, or ruler. A virtuous father fulfils his duties because he loves his son (*ren*), and he loves his son because he is the father (*yi*).

Parents are the vehicles through which the *Dao* is transmitted and manifested in their children, and it is defined as filial piety *xiao dao* (孝道). According to Confucius (2013) our body comes from our parents and "therefore, we should avoid doing harm to our bodies. This is said to be the beginning of the filial piety. And, achieving success in society and becoming a man of established reputation is the completion of filial piety" (The Great Learning, Ⅱ, Chap. 2, 34). For this reason, people return to their hometown during Lunar New Year and Thanksgiving. It is a major movement of nearly 20% of the population in Korea to visit their hometown. They first go to ancestral graves to pay respect and have a symbolic meal with them. (See Figure 33). They return to their grandparents' house to pay respect to both the grandparents and parents by bowing to them. (See Figure 34, 35). The parent-child relationship involves more than just two individuals: Parents represent the past being connected to grandparents and ancestors, and children represent the future. These ideas have been verified in a review of empirical studies on filial piety in Korea (Park, Kim & Shin, 2011).

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Figure 33: Paying respect to ancestors in front of the grave

Figure 34: Bowing to parents

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Figure 35: Grandparents represent the past, and children represent the future

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Confucius considered society to be hierarchically ordered and that each person has *fen* (分, "portion or place") in life. The Japanese word for "I" is *jibun (自分, "my part or portion"). Each fen has attached roles, duties, and code of conduct and each person must fulfil these roles. Duties and obligations of each fen are prescribed by the third concept, li (禮*, "**Propriety"; See Figure 32). Propriety articulates expected behavior and duties of each person according to their status and role. The concept "face" *tǐ miàn* (體面, "face") in Japan, Korea and China arises from Propriety. By maintaining "face," social order and harmony are maintained with people behaving according to their role, obligations, and duties. The importance of maintaining "face" have been verified in a review of empirical studies in Korea (Choi, Kim & Kim, 1997).

Munro (1985) points out that a person is seen as occupying a particular set of social roles in a hierarchical social order and this order is viewed as a part of cosmic order. *Fen* articulates the belief that "each thing in nature and cosmos has a fixed place, akin to the fixed social places of father, wife, older son, younger son, and so forth in the family" (Munro, 1985, p. 18). Ch'eng I notes that "each of all things and affairs has its place [*so*]" and "when it obtains its place there is tranquility; when it loses it there is disorder" (cited in Munro, 1985, p. 267).

The fourth concept is *zhi* (智,"Knowledge") and it is related to learning through self-cultivation and education. (See Figure 32). Teachers are seen as extensions of parents, and they have a moral basis to teach students so that they can develop Knowledge (Kim, 1995). The four concepts (Human-heartedness, Rightness, Propriety, and Knowledge) are the basis of Confucian morality and ethics. Like the two arms and two legs that we are born with, the four potentials exist from birth, and they must be developed and cultivated. Finally, as children are educated, they need to interact with a wider range of people, including strangers in the community, workplace, and society. As such, they need to develop *xin* (信,"Trust"). (See Figure 32). A review of empirical studies conducted in Korea verify the importance of self-regulation, relational efficacy, and social support of parents, friends, and teachers in the development of academic achievement and trust (Kim & Park, 2005, 2008).

Tsu-kung asked Confucius the importance of governance and society. Confucius stated: "Give them enough food, given them enough arms, and the common people will have

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trust in you. Tsu-kung asked: If one had to give up one of these three, which should one give up first? Confucius replied: Give up arms*.* Tzu-kung continued*:* If one had to give up one of the remaining two, which should one give up first? Confucius concluded: Give up food. Death has always been with us since the beginning of time, but when there is no trust, the common people will have nothing to stand on" (XII.7).

Confucius articulated the Five Cardinal Relations as being fundamental relationships. Three are based on the family (i.e., between father and son, elder and younger, spouses), one involves the state (i.e., between kings and subjects), and one involves equal status confidants (i.e., between friends). Within each relationship, key concepts are emphasized: *ch'in* (affection) between parent and child, *yi* (righteousness) between ruler and subject, *pieh* (distinction) between husband and wife, *hsu* (order) between old and young, and *hsin* (sincerity) between friends (King, 1985). Hu Shih (1919) asserts that in Confucianism, humans are seen as relational beings: "in the Confucians' human-centered philosophy, a person cannot exist alone; all actions must be in a form of interaction between a person and another person" (cited in King, 1985, p. 57).

Confucius considered all individuals to be linked to others in a web of interrelatedness, starting from the self. The fundamental principle for governing relationships among the self, family, society, the world, and beyond is best articulated in "Righteousness in the Heart:"

> *If there be righteousness in the heart, there will be beauty in character,*
>
> *If there be beauty in character, there will be harmony in the home.*
>
> *If there be harmony in the home, there will be order in the nation.*
>
> *If there be order in the nation, there will be peace in the world.* (Confucius, 1979).

The Confucian morality puts priority on social harmony over individual freedom and rationality. Each individual has a role and a position in a family. The behavior of each

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role and position is formalized in the Confucian code of behavior. Within a family, the father is considered the symbolic head. As such, he holds the authority to represent the family, to speak and act on behalf of the family, but not against the family. For example, property was the communal possession of a family. Although the father had the right to dispose of the property, the other family members also have rights to the property. In the selling or leasing of family property in traditional China, family members other than the father or the eldest son (e.g., other sons, daughters and grandsons) also signed sales and lease contracts (Lee, 1991). The arbitrary decision of the father was generally considered uncustomary or an illegitimate act (Lee, 1991).

A father had the authority, duty, and responsibility of handling family property on behalf of the family and not for himself. Thus, wisdom and benevolence are necessary to ensure that his decisions are not myopic or self-serving. He must consider the long-term implications of his decision on family members, the family's position, ancestors, and progeny. The role of other family members is to obey and respect his decisions. Currently, Korean family laws have been passed which give the wife equals rights in terms of the custody of the child, wealth in case of a divorce, inheritance, retirement benefits, and the choice to choose the surname of the children using the father or the mother's surname.

In Confucianism, the family is considered the prototype for all relationships (King & Bond, 1985; Lee, 1991). Society is seen as an extension of the family (Doctrine of the Mean, I, 1). Like a father, an ideal ruler is a person who utilizes his authority for the welfare and common good of the people and not for his self-interests. A ruler, like a father, must be governed by virtues of both Human-heartedness and Rightness. If a ruler was considered totalitarian or tyrannical, he lost the moral basis to rule, and people were justified in revolting against him (Lo, 1949).

Confucian political philosophy affirms paternalism and legal moralism. Two types of paternalism have been identified: *authoritarian paternalism* and *benevolent paternalism* (U. M. Kim, 2004). Authoritarian paternalism is defined by Rightness but lacks Human-heartedness. In other words, authoritarian paternalism exists when the goal of the state or organization is to protect existing structure, a way of life, and authority, while neglecting the welfare of its people. Benevolent paternalism exists when

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individual needs are met and provided by the state (i.e., it has both Rightness and Human-heartedness*)*. Benevolent paternalism can be further divided into two subtypes: *non-blamable* and *blamable paternalism* (Feinberg, 1973). Non-blamable paternalism exists when helpless individuals are protected and assisted by the state without usurping their autonomy and freedom (Feinberg, 1973). Blamable paternalism exists when the state deprives individuals of their autonomy and freedom by imposing assistance even when it is not needed or wanted (Feinberg, 1983). Both non-blamable and blamable paternalism are accepted in Confucianism. In liberalism, only the non-blamable paternalism is acceptable (Feinberg, 1983).

Legal moralism prohibits, through laws and norms, behaviors that violate conventional etiquette, lifestyles, and morality in order to preserve social order (Feinberg, 1973). Confucian moralism restricts individual freedom of choice even in non-moral domains. Within the traditional Confucian laws, governmental authorities are assigned to investigate incidence of non-compliance and punish individuals who violate the code of behavior. Until recently, within the Confucian code of conduct, it was illegal to have extra-marital affairs, and the spouse could sue the partner, and he/she can be jailed for betraying the relationship and family.

Parents are legally required to take care of the children until they have become adults. When parents become old, the Confucian code requires that children take care of the elderly parents, and this is an enforceable legal requirement. Since children are taken care of the until they become adults, parents should be taken of for the last years of their life.

Confucius articulated his ideas in the traditional conservative agrarian society, but the emphasis on relationship and empathy continues in the modern era. Many people think that East Asians have simply Westernized, but the situation is much more complex. Although some aspects of Western cultures have been adopted (e.g., the democratic process, individuality, rights, the rule of law, and technology), the more significant change involves the emphasis on the future and diversification of relationships (i.e., school and work relations), and the online communities for the Gen Zs (Kim & Kim, 2022).

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The transition from traditional agrarian communities to a modern society to a digital society meant dramatic changes in people's lives (Kim & Kim, 2022). Koreans had to change from conservative to progressive to innovative thinking, from being past-oriented to future-oriented to virtual oriented, from choosing the middle-path to achievement to creativity, from sentimentalist and reflective thinking to analytical thinking to creative thinking, from hierarchical and paternalistic relationships to social equality and justice, and from acceptance of nature to controlling nature to sustainability. Even with these changes, the importance of the family, relations, and self-development through education persist. This is the fundamental assumption and the basis of East Asian cultures. The starting point for East Asan cultures is relationships and empathy, the process is self-regulation, and the end point is social harmony which is different in Euro-American cultures. In the West, the starting point is the individual uniqueness and rights, the process is rationality, competition and non-interference, and the endpoint is the pursuit of personal success and happiness (Hofstede, 1991; Kim, 1995, 2001; Kim et al., 2004).

Comparisons of Liberalism and Confucianism

Liberalism extols the virtues of individualism and Confucianism emphasizes relationalism. Figure 36 provides a summary of the differences between the two moral-political philosophies. (See Figure 36). The liberal tradition focuses on a rational individual's rights to freely choose, define, and search for self-fulfillment; the content of self-fulfillment can range from hedonism to self-actualization. At the interpersonal level, individuals are considered to be autonomous, rational, and self-sufficient, and respectful of the rights of others.

Figure 36: Contextualization of culture and philosophy

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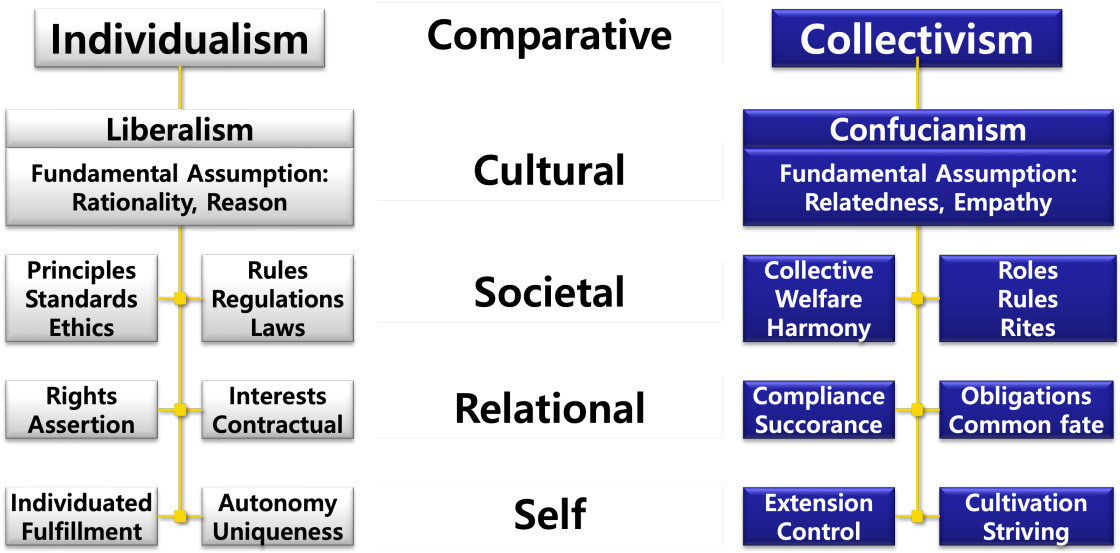

From a societal point of view, individuals are considered as abstract and universal entities. Their status and roles are not pre-determined, but defined by their achievements (i.e., educational, occupational, and economic status). They interact with others utilizing mutually agreed upon principles such as equality, equity, non-interference, and detachability. Individuals with similar goals are brought together into a group. Laws and regulations are institutionalized to protect individual rights with everyone able to assert his or her rights through the legal system. The state is governed by elected officials whose role is to uphold individual rights and the viability of public institutions. Individual rights are of prime importance, where social welfare and harmony are considered secondary.

Confucianism promotes social welfare and harmony as its ultimate goal. Individuals must cultivate themselves to be rid of individualistic and hedonistic desires in order to become a person of virtue (Human-heartedness and Rightness). Individuals are conceived to be embedded and situated in a particular role and status. Individuals are encouraged to put other people's and the group's interest before their own.

From a societal point of view, individuals are considered to be inter-related through their ascribed roles. Duties and obligations are prescribed by their roles and they loose "face" if they fail to fulfill them as prescribed. Concession, mediations, and compromise are essential ingredients in promoting the role-based and virtue-based conception of justice.

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Social order is maintained when everyone fulfills their roles and duties. Institutions are seen as an extension of the family and paternalism and legal moralism are accepted. A ruler is considered to be a father figure who is paternalistic, moralistic, and welfaristic.

There are several limitations of the present comparison. First, liberalism represents one version of individualism; it should not be equated with all individualism. Similarly, Confucianism represents one version of collectivism; it should not be equated with all collectivism. Also, Confucianism is fundamentally different from Communism. There are other examples of individualism (e.g., hedonism, feminism, and humanist traditions in psychology) and collectivism (e.g., community, Communism, and fundamentalism, such as Amish, Mennonites).

Second, the purpose of the description is to show a consistent pattern of relationship across different levels. Each philosophical tradition represents a particular constellation of values, beliefs, and behavior that arise in a particular cultural context and has meaning in that context. Figure 36 should be read vertically (i.e., across different levels of analysis) and not horizontally (i.e., dichotomous comparisons). The pattern of relationships across the different levels is the focus of comparison and not the dichotomous comparisons.

Third, within a particular culture, liberalism or Confucianism represent ideals that exist in competition with other moral-political philosophies. In the United States, competing philosophies such as conservatism and fundamentalism aim to challenge, discredit, and dislodge liberalism. In China, Buddhism and Taoism have traditionally competed with Confucianism as competing moral-political philosophies. In modern East Asia (i.e., China, Japan, and Korea) liberal ideals have penetrated these societies to compete with Confucian philosophy. Each moral-political philosophy, nevertheless, has profound influence in its respective culture and is propagated through the socialization of children.

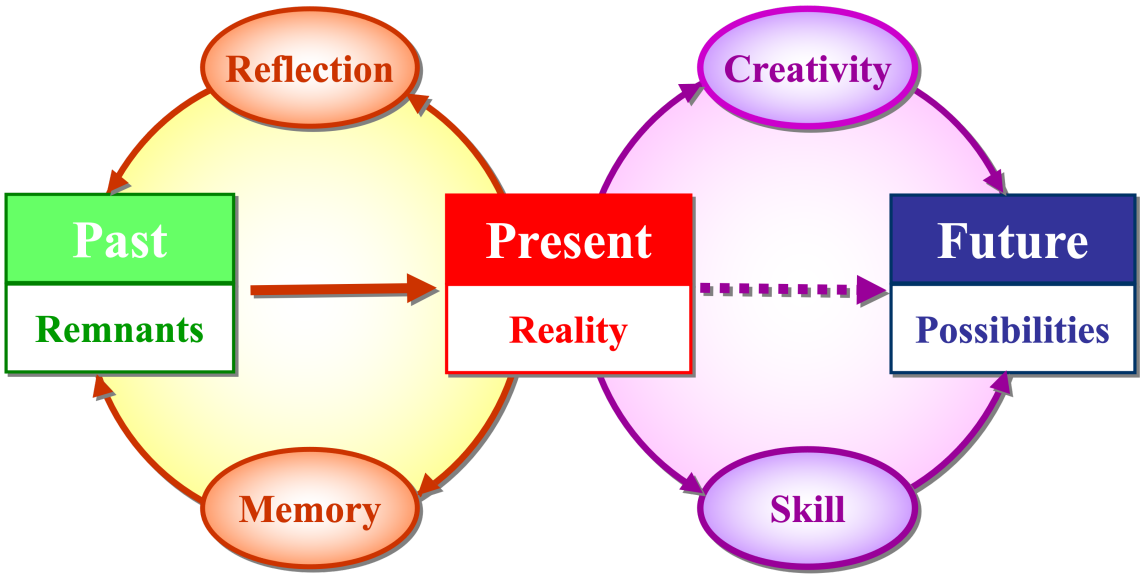
VIII. Culture and Self

Kim, U. (2024). Understanding the software of the mind, self, and culture: Analysis of the secrets to happiness, health, and long life. In *Proceedings of the Paris Institute for Advanced Study* (Vol. 21). https://paris.pias.science/article/understanding-the-software-of-the-mind-self-and-culture-analysis-of-the-secrets-to-happiness-health-and-long-life 2024/3 - paris-ias-ideas - Article No.4. Freely available at https://paris.pias.science/article/understanding-the-software-of-the-mind-self-and-culture-analysis-of-the-secrets-to-happiness-health-and-long-life - ISSN 2826-2832/

Culture

Culture represents the collective consciousness and agency to use the natural and human resources to achieve desired goals (Kim, 2001). There is a tendency to understand culture by looking at the past and the analysis of cultural products, such as art, music, values, beliefs, and customs. (See Figure 37). We can understand the culture by looking back using memory and recorded documents. They can help us to understand the culture at the present. However, the most important aspect of culture is collective agency and creativity. While the elderly have a rich past and experience, they tend to focus on the past and try to maintain their existing mindset and lifestyle. Middle-aged parents focus on the present by taking care of their children and their elderly parents. The Gen Zs (those born after 1995) look toward to the future to explore possibilities and to pursue their desired goals to find meaning and purpose in their lives. This is the basis of generational differences. Culture is dynamic and changing and Gen Zs, as the digital native, have inherited the world that is facing climate crisis, social inequality, and ethical and governance problems. They have very little vested interest in the world that their parents, the baby boomer generation, have created (Deloitte, 2021; Kim & Kim, 2022). Using their personal, proxy, and collective agency, they will define and create change and transform their society to reach their desired goal.

Figure 37: Culture and cultural change



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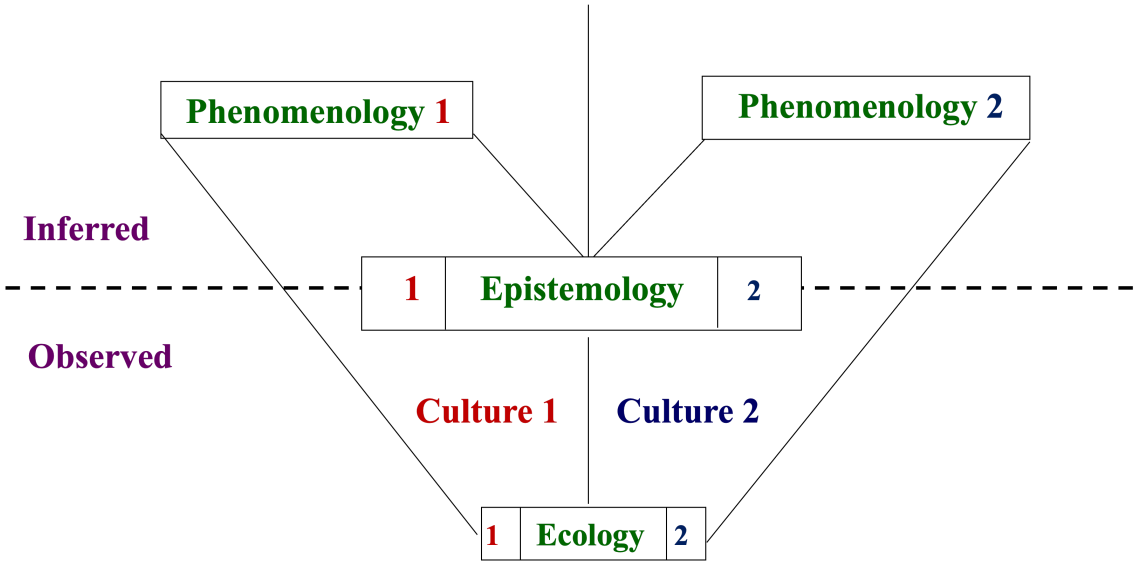
Cultures can embody different beliefs, values, customs, and ways of life, but the most important aspect of culture is the assumption that people accept it as being given, fundamental, and natural. To understand culture, we need to examine the three aspects that are central to people's lives: Ecology, epistemology, and phenomenology. (See Figure 38). Cultures vary in terms of the ecology in which they live and the resources that they use to survive, adapt, and innovate. Even though two cultures may share similar ecological context, they may have developed different epistemology, which is composed of common sense, religion, philosophy, and ethnoscience, to understand their natural and human world. The epistemological traditions represented are Christianity in the West, Judaism and Islam in the Middle East, and Hinduism and Buddhism in Asia. In philosophy, liberalism focuses on the individual as the basic unit of analysis and rationality as the basis of the self. In Confucianism, relationships are the basic units of analysis and empathy, and the compassion that binds individuals together is emphasized. They differ in terms of the starting point, the assumptions and emphasis.

Figure 38: Facets of culture



In Western cultures, individuals are accepted as the basic unit of analysis and rationalism as a way to relate and communicate with one another. In East Asia, relationships are the basic unit of analysis and empathy, and roles are the way to relate and communicate with others. Based on these assumptions, the family, socialization, and the conception of self develops and are propagated through education, social institutions,

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and the political system. People develop a sense of agency using their biological, relational, and environmental resources to formulate and pursue their goals. The biological endowments, relationships, and culture also provide limitations, barriers, opportunities, and resources to what they are able to learn and achieve in their lifetime.

The most important aspect of culture is phenomenology - what a person experiences, thinks and feels growing up in a particular family, community, and culture. The phenomenology of Descartes led him to conclude "I think, therefore I am." The phenomenology of Einstein that led him to conclude "God shall not play dice with the world."

Culture provides the context and resources for individuals to experience, engage, and learn about the collective consciousness, agency, and information stored outside the body. People do not experience all aspects of culture since they are born in a particular family and live in a particular community. They are able to communicate and share their ideas and experiences with others and learn through education and media.

I can experience a culture from three different perspectives: First-person, second-person, and third-person perspective. The third person perspective involves viewing a culture from a distance by studying its language, history, customs, and values. This is the approach that cultural anthropologists use. Sociologists, economists, and cross-cultural psychologists can understand culture using surveys and published data (Hostede, 1991; Schwartz, 1994). I can understand a culture as a second-person by interacting with people through interviews, focus group discussion, and participant observations. The first-person perspective is to experience the culture by eating food, listening to music, communicating with others, and living in the community for many years.

Even though I may live and experience the same culture, I may not develop a similar phenomenology. As a Korean, I can learn Italian history, philosophy, and culture to obtain a third-person perspective. I can meet Italians to learn about their thoughts, feelings, and lifestyle through dialogues, interviews, and discussions to obtain the second-person perspective. I can live in Italy to enjoy the food, music, and art, speak Italian fluently, and even marry an Italian, but I may not feel like an Italian. Even if I live in Japan and speak fluent Japanese, it is difficult to feel and think like other Japanese since I lack the phenomenology of what it is like to be a Japanese.

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The most important reason for the difference in phenomenology is that I was raised by Korean parents. The conception of self and the phenomenology are deeply embedded in infancy and early childhood experiences that connected the neuron into an integrated circuit based on Korean culture and language and through the socialization and enculturation of my parents. The conception of the self is how "I" view and feel about "Me" and how my parents and others view and treat "Me" have a profound influence of the software of the mind and self.

Understanding the self

Philosophy started out with searching for how we can understand reality by raising basic questions about the nature of the universe, human society, and the meaning of life. Socrates (470--399 BC) asked his students to "know thyself." How does one know oneself and examine one's life? Who is the knower (i.e., the subject) and what is the known (i.e., the object)? Can a person become the knower and the known at the same time? This is the starting point of understanding the self. Humans have the capability to understand the self as an object and as a subject.

William James (1842-1910) is considered as the father of American psychology, and he was interested in understanding human consciousness and the will. James (1890) distinguished the two aspects of the self: The "Me" as the known, object, the physical, empirical, changing me, and the "I," who is a subject, who is aware, the knower. (See Figure 39). There are various aspects of "Me": Physical, psychological, material, relational, and social. These are quantifiable aspects of the self, what we call the objective self. We can understand who we are through social comparison: Height, weight, beauty, intelligence, and income. There are aspects of "Me" in the present, in the future, ideal, and desired self.

Figure 39: Aspects of the self

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The "Me	The "I"
Object	Subject
Empirical	Awareness
Known	Knower
Changing	Constant

Aspects of Me	Example
1. Physical	Height, weight, looks
2. Psychological	Personality, intelligence, values, attitudes
3. Material	Possession, wealth
4. Relational	Role, family, friends, relationship
5. Social	Occupation, education level, social status

Aspects of "Me"	
1. Actual me	In the present
2. Potential me	In the future
3. Ideal me	As desired

Aspects of "I"	
1. Regulative	Regulates thoughts, emotions and behavior
2. Reflective	Monitors, inquisitive, phenomenological
3. Evaluative	Preferences, likes-dislikes, critical
4. Directive	Goals, plans, future-oriented, idealistic
5. Integrative	Identity, coherence, continuity

The more important aspect of the self is the subjective "I." The subjective "I" regulates thoughts, emotions, and behaviors. (See Figure 40). It is reflective and asks questions, such as: Who am I? What is the meaning of life? Am I happy? It is evaluative, such as: Am I a good person? Am I happy? It is directive, goal-directed, and future-oriented. It is integrative and provides a sense of coherence for oneself and creates a sense of identity. What is important is how "I" see "Me" and directs, evaluates, and projects "Me" in the future. For example, when I play piano, the objective "Me" is moving my fingers and feet to create the sounds. However, it is the subjective "I" that listens, evaluates, and strategizes to create beautiful music. The subjective "I" is the software of the mind that directs, evaluates and the objective "Me."

Figure 40: Understanding the self

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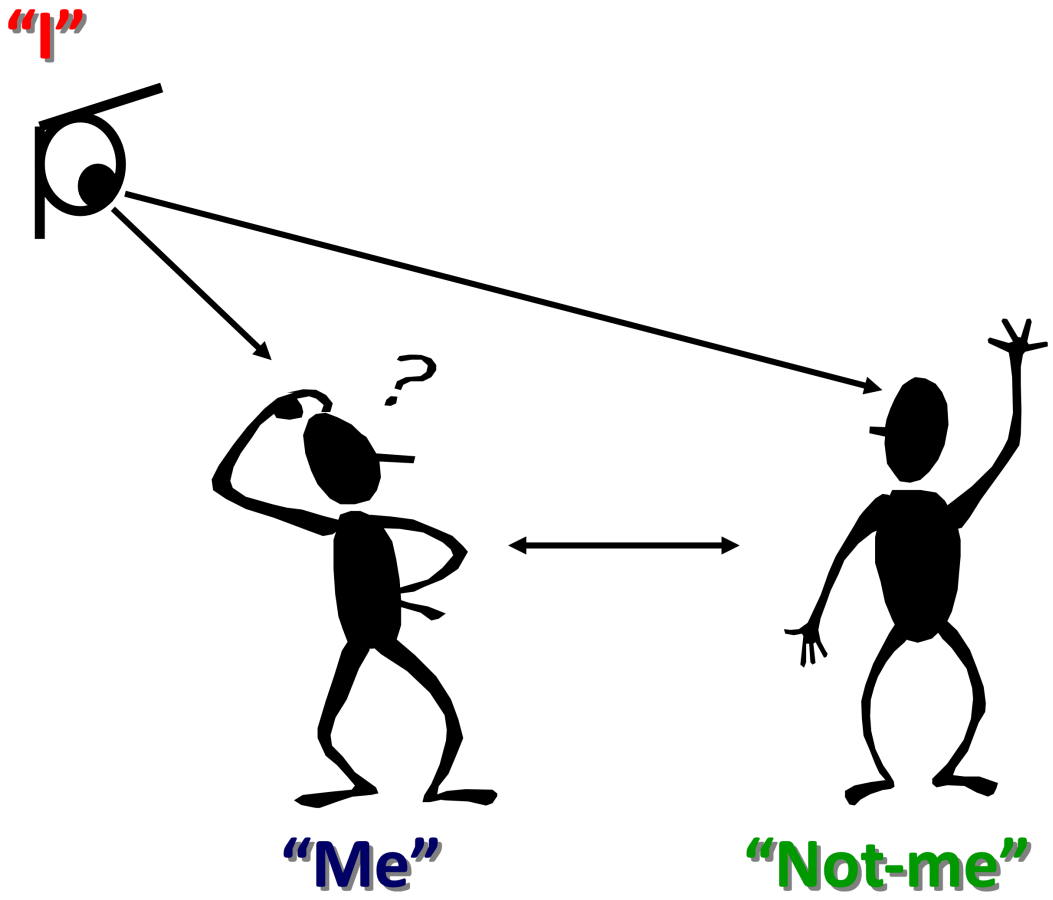

Although the objective "Me" changes throughout one's lifetime in terms of physical appearance, intelligence, personality, and social relationships, the subjective "I" maintains one's self-identity and coherence. (See Figure 41). It is known that adolescents experience an identity crisis during the transition period from childhood to adulthood and it can be experienced during acculturation, with migrants moving into another culture (Kim & Berry, 1986). With a traumatic experience, there can be a fracturing the coherence of "I" and the sense of identity can be disrupted to create mental illness, multiple personality, or schizophrenia.

Figure 41: Maintenance of self-identity

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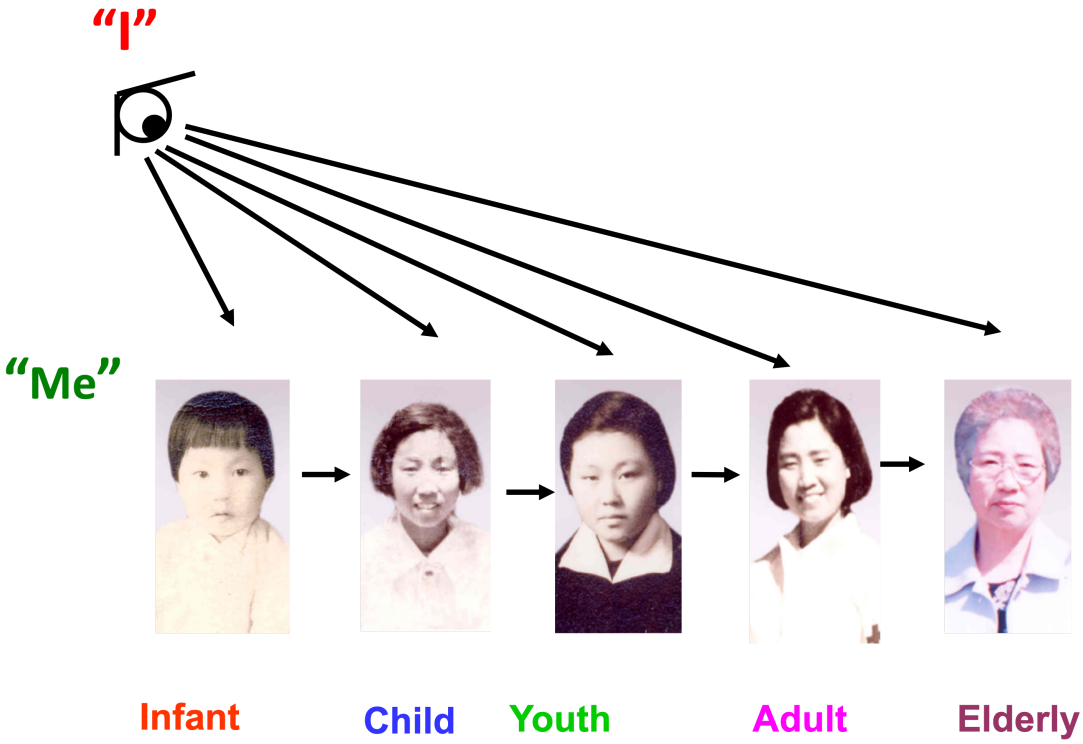

To understand the conception of the self, art can be used since art is a direct expression of a person's experience. Vincent van Gogh (1853-1890) is an excellent example since he drew 32 self-portraits. He did so not because he was vain, but because he was poor, and he could not afford to pay for models. Van Gogh is a Dutch impressionist painter who lived in Paris and drew impressions that are left in his mind rather than drawing what he sees or the ideals of the Classical paintings. (See Figure 42). His paintings are not exact replicas of himself, but the impressions of inner thoughts and feelings that are left in his mind. In June 1888, he drew a painting of a field in France (See Figure 43).

Figure 42: Vincent van Gogh

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Figure 43: Van Gogh, June 1888

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One year later, June 1889, he drew his most famous painting, *The Starry Night*. It is a different style of painting known as expressionism. (See Figure 44). There is even a song written by Don McLean, entitled Starry, Starry Night. How can his style of painting change so dramatically within one year? In December 1888, he suffered from seizures, hallucinations, and nightmares, and cut of his earlobe. He admitted himself to the Arles Hospital and he was diagnosed with acute mania with generalized delirium.[14] Figure 44 shows a self-portrait with his ear cut off in December, 1889. (See Figure 45).

Figure 44: Starry Night, June 1889

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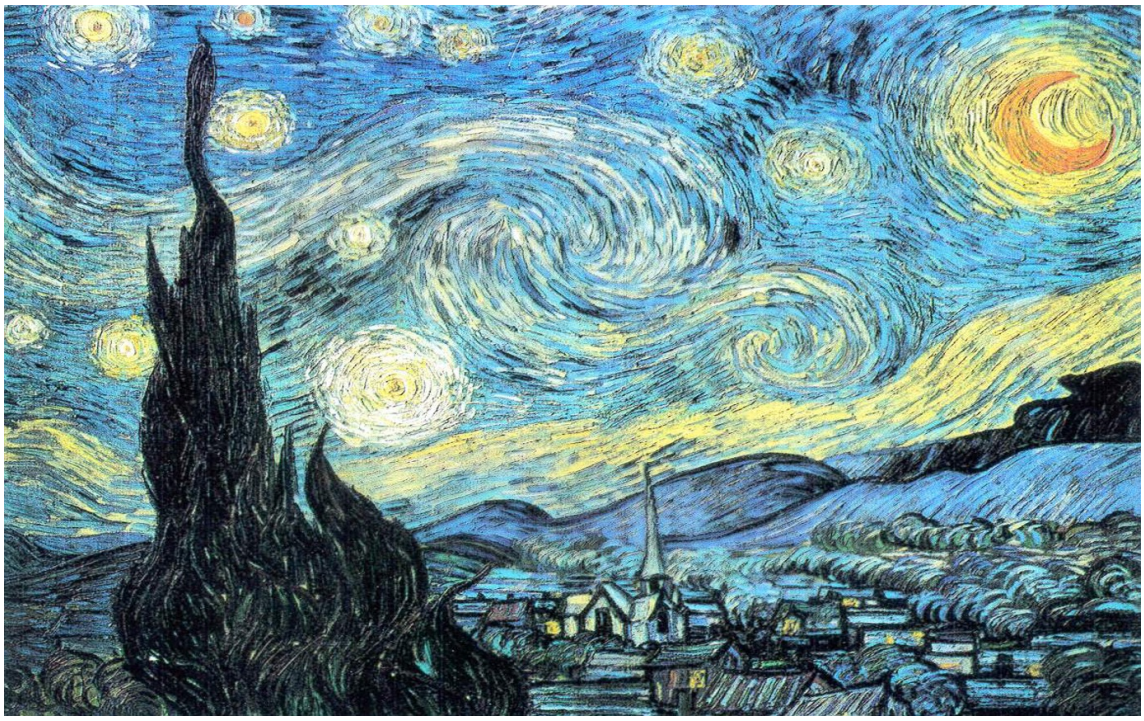

Figure 45: Vincent van Gogh, December 1888

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In 1889, he drew a self-portrait that shows the "turbulent patterns signal a feeling of strain and pressure, symbolizing the artist's state of mind, which is under a mental, physical and emotional pressure" (Beckett, 1994, p. 274; See Figure 46). In the Starry Night, the trees are threatening, the wind is howling, the stars are blurry, and the moon

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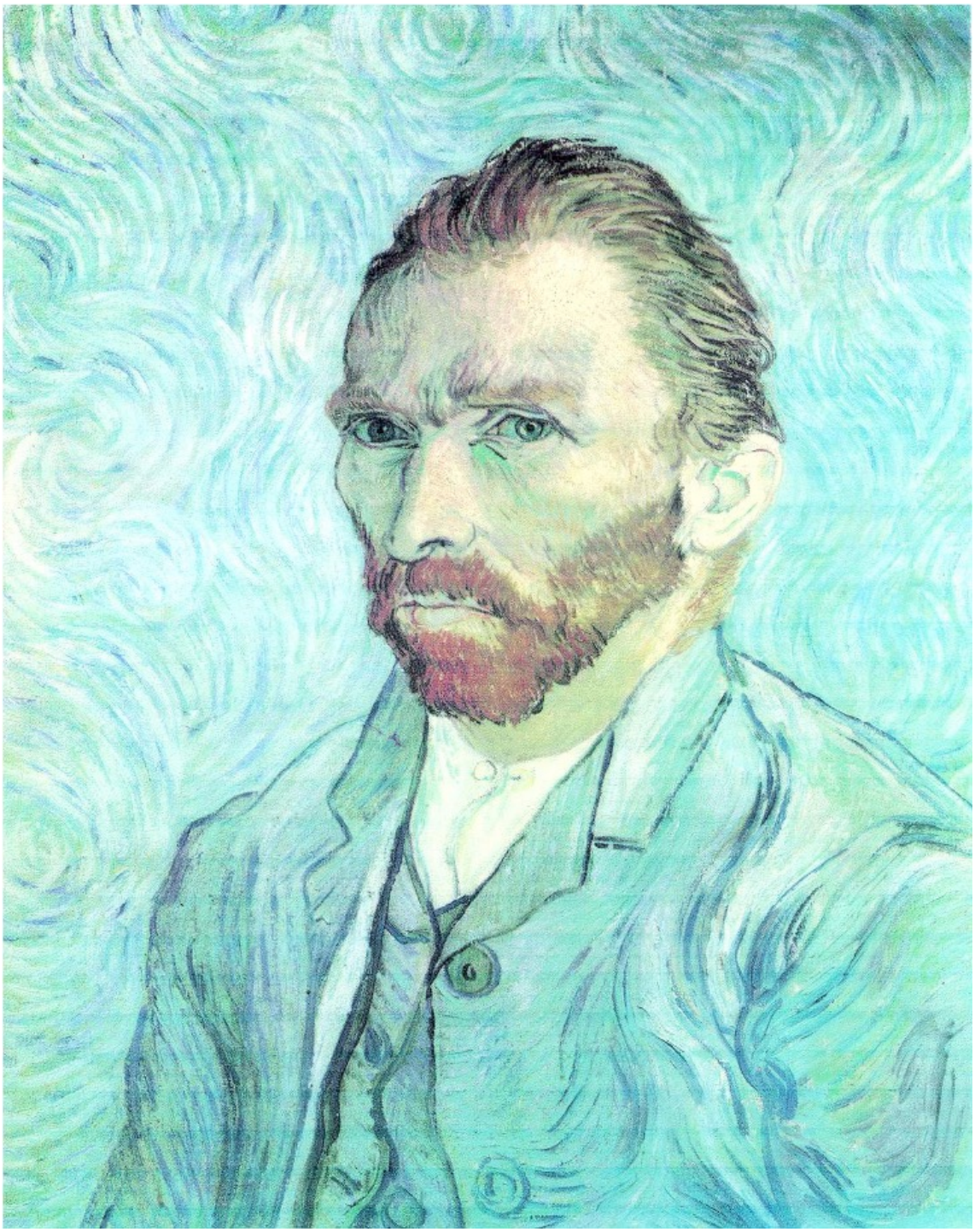
is mystical. His physical "Me" did not change within a year, but how he views and evaluates himself or "I" changed dramatically. He passed away in 1890.

Figure 46: Vincent van Gogh, 1889



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Socialization and self

In traditional Korea, socialization emphasizing relatedness starts at the prenatal stage and continues throughout one's life (Kim & Choi, 1994). *T'aekyo*(胎教 "prenatal care") contains rigorous guidelines for pregnant women outlining desirable and undesirable attitudes, emotions, and behaviors during pregnancy. These prescriptive guidelines are based upon a belief that a mother's experience during her pregnancy will affect the baby inside her womb and leave lasting impressions on the child. The goal of *t'aekyo* is to heighten a sense of awareness of the unique psychological and biological bond between the mother and the unborn child.

When the child is born, mothers believed that children needed more than just their milk. They needed the symbolic "dew" coming down from a mother. She needed to remain close to the child in order to indulge the child with this essential psychological nutrient. The belief is that the maternal "dew" propagates the existence of an unseen but powerful bond between a mother and her child. Both *t'aekyo* and maternal dew created a strong psychological and emotional bond called *jung* ("affection and attachment").

Although the influence of Confucianism has declined with modernization, researchers agree that the two important features of the relatedness still persist: devotion and indulgence (Azuma, 1986; Ho, 1986; Kim & Choi, 1994; Kim & Kim, 2022). Mothers in modern Confucian cultures view unselfish devotion to their children as a critical feature of their personhood and motherhood. Kim and Park (2013) found that Korean mothers' personal identities are often defined by their role as a mother. They become closely and intrinsically attached to their children and see their children as extensions of themselves. Children's accomplishments and failures become their own, and children vicariously fulfill their own dreams and goals. Attaining this vicarious gratification is one of the most important aspects of motherhood, and it is the most valued meaning that Korean mothers have in raising their children.

In modern Confucian cultures, parents are not discipline-oriented in enforcing the weaning, bedtime, and toilet training. They are lenient and indulgent to foster the sense of relatedness. Ho (1986) points out that "the reason for leniency toward the younger child is that he or she is considered to be not yet capable of 'understanding things,' and

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therefore should not be held responsible for his or her wrongdoing... It is thought that training cannot be expected to accomplish much for infants or young children; they are viewed as passive dependent creatures who are to be cared for, and whose needs are to be met with little delay or interference." (p. 4).

According to Azuma (1986), when a child is born, a Japanese mother remains close to the child to make the child feel secure, to make the boundary between herself and the child minimal, and to meet all of the child's needs, even if that means a tremendous sacrifice on her own part. This type of socialization creates the bond of *amae*. Children's strong dependency needs, both emotional and existential, are satisfied by their mother's indulgent devotion. As children mature, they sense that it is through the mother that they obtain gratification, security, and love. As such, children become motivated to maintain a close relationship and they do so by gradually taking a more active role by pleasing their mothers and behaving according to their mothers' wishes. The feeling of relatedness helps children to adopt their mothers' values and beliefs as their own and develop their proxy control. Socialization for relatedness have also been documented in Chinese, Indian and Turkish culture (Kim, 1995).

Devotion is an important element in both the mother-child and the father-child relationship. In a mother-child relationship, it is complemented with indulgence: A mother shows her devotion to her child through indulgence (i.e., it flows downward, from the mother to the child). In a father-child relationship, it is complemented with strictness: Children display their devotion to their father through obedience, respect, and compliance (i.e., it flows upward, from a child to a father). The devotion shown by a mother to her children serves as the foundation and model for children's devotion to their father.

The respective role of a father and a mother is best summarized in a popular Chinese and Korean phrase, "strict father, benevolent mother." Consistent with the role differentiation, fathers in Chinese and Korean culture were perceived by their children as an autocratic, fearful authority figure, and a harsh disciplinarian (Ho, 1986; Kim & Park, 2013). Mothers, in contrast, were viewed to be closer and more forgiving (Ho, 1986; Kim & Park, 2013).

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Although the father is the head of the family, in reality he does not hold much power. In modern Japan, he transfers his *amae* relationship from his own mother to his wife (Befu, 1986). He becomes dependent on his wife and is considered "more burdensome and harder to control than other children" (Azuma, 1986, p. 8). In addition, Japanese fathers spend most of their time in the workplace and socializing with their colleagues after work (Befu, 1986). A father incurs expenses to meet his social obligations outside of the family. Mothers, in contrast, spend most of their time with their children. A mother is responsible for looking after the children and the household, and she frequently sacrifices her own personal interests to benefit the family. For these reasons, unlike mothers, fathers have difficulty developing *amae* relationships with their children and occupy a peripheral position in the family. As a result, conflicts of interest often develop in the allocation of resources and mothers often develop an alliance with their children against their fathers (Befu, 1986). Azuma (1986) notes that: "in many families the position of the father is peripheral. The formal head of the family, he is accorded respect. However, this respect is symbolic; in reality he does not exert much control (p. 8).

Although a father is only the symbolic head of a family, he represents a link to the outer world. Through the father, children are linked across time (i.e., through his lineage) and across space (i.e., through his position in a community). It is his responsibility to maintain, propagate, and elevate the position of the family. When making decisions, he must use wisdom and foresight as essential ingredients since his decision affects the family members, lineage, and progeny. Children are considered incapable of understanding such a complex process, and thus they are required to obey, respect, and abide by fathers' decision. From the children's perspective, it often means sacrificing their personal interests for the benefit of the family. Thus, fathers represent the outer world which is govern by the formal *tatamae* ("principles, conventions") and mothers represent the inner world governed by relational mode, *amae* and *honne* ("true self").

Culture and self

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Cooley, Horton and Carr (1933) in their classical analysis of "looking glass self" note that the collective entities help to shape attitudes, beliefs, emotions, and behaviors of individuals who are born into a culture: "The whole is a network of interdependent parts, each one of which contributes to the functioning of the entire system" (p. 71). A culture helps to shape the attitudes, beliefs, emotions, and behaviors of individuals who are born into a culture through enculturation and socialization, but they do not determine them. Individuals possess characteristics that are unique and self-directing. They often accept, select, or reject cultural influences. In addition, individuals contribute to the process of maintaining, synthesizing, and changing the existing culture. They cannot be viewed simply as recipients of cultural influences. They need to be considered as agents and architects of cultural change. Cooley et al. (1933) stated that "a separate person is an abstraction unknown to experience, and so likewise is society when regarded as something apart from persons" (p. 71).

Researchers have found that people in the USA describe their self in an abstract and context-free manner (Miller, 1984; Shweder & Bourne, 1984). Such a conception contrasts sharply with the Chinese, Indian, Japanese or the Korean view, which is predominantly concrete, relational, and bound in a particular behavioral context (Maday & Szalay, 1976; Markus & Kitayama, 1991; Miller, 1984; Shweder & Bourne, 1984). A tendency to remain concrete and relational was not due to differences in education, literacy, socio-economic class, or a lack of abstraction skills (Shweder & Bourne, 1984). Shweder and Bourne (1984) note that the emphasis on abstraction was collectively created and supported in the American culture: "This abstracted individual, 'man-as-voluntary agent,' is protected by deeply enshrined moral and legal principles prescribing privacy and proscribing unwanted invasions of person, property, and other extensions of the self. Americans are culturally primed to search for abstract summaries of the autonomous individual behind the social role and social appearance" (p. 192).

Shweder and Bourne (1984) use the term *egocentric contractual* to describe American individualism. From this perspective, social relationships are viewed as a derivative of the autonomous and abstracted individuals. They interact via mutual consent and contractual relationship. Social situations serve "primarily as standards of reflected appraisal, or as sources that can verify and affirm the inner core of the self" (Markus &

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Kitayama, 1991, p. 226). Each member, however, is socialized from birth to accept the core value system as being supremely natural and universal (Riesman, 1953).

Since individuals are unrelated to one another, they may not always act in a responsible, moral, and altruistic manner and they may exploit or commit crimes against one another or against society (Bandura, 2016; Hogan, 1975). Sampson (1977) notes that highly individualistic societies may "require strong, autocratic governance to control their appetites" (p. 779). In such a society, laws are established so that no one can step beyond the boundaries of the laws. If they do, these individuals are identified, punished, and often incarcerated. The legal system, correctional system, military, and the internal revenue service are examples of the strict legal requirement. Everyone in the culture is bound by these laws and theoretically, no one enjoys special privileges.

In Japan, Doi (1985) notes that in Japanese culture there are two sides to virtually all social phenomena. He uses the following distinctions: *omote* (meaning "face") and *ura* ("mind, heart, and soul"), *soto* ("outside") and *uchi* ("inside"), and *tatemae* ("principles, rules and conventions") and *honne* ("true intentions, or the inner self"). These terms are related to one another: "*omote* and *ura* are parallel to the paired concepts of *tatemae* and *honne*, and they represent a psychology corresponding to the distinction between *soto* and *uchi*" (Doi, 1985, p. 17). Within the psychological space these contrasting elements coexist as two contiguous principles (Doi, 1985). The relationship between *tatemae* and *honne* can be conceived as the two sides of a coin lying on a table. The public self (*tatemae*) is the visible side of the coin. The private self (*honne*) is the hidden side of the coin. In the Japanese context, the hidden side needs to be inferred or figured to understand the true nature of the coin.

In public situations, social norms and roles dictate behaviors of individuals. Collective actions need to be orchestrated cooperatively and harmoniously. If an individual's aspirations are not compatible with social demands, he or she is likely to be asked to sacrifice his or her personal interests for group harmony. This does not imply that individuals necessarily agree with the existing social norms. The cultural expectation is that if there are conflicts, individuals must regulate them and locate them within the private domain and not display them in public. For this reason, East Asian cultures emphasize the maintenance of one's "face" (*mientze* in Chinese, *chemyon*in

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Korean, *taimien* in Japanese) in public situations. Individuals have a particular status and a role, and they must fulfill them in a socially prescribed manner. Ho (1976) points out that one's "face is lost when the individual, either through his action or that of people closely related to him, fails to meet essential requirements placed upon him by virtue of the social position he occupies" (p. 867). Regardless of an individual's desires, one's "face" has to be maintained to preserve social harmony.

In India, Sinha and Tripathi (1994) coined the term *co-existence* to describe a model that allows diverse elements, including contradictory elements, to co-exist within a culture and within a person. The co-existence mode separates the private self from the public self. The public self becomes connected to collectivist values, such as family loyalty, ingroup solidarity, and national identity. It co-exists with the private self that maintains individualistic values of self-cultivation and personal striving. Sinha and Tripathi (1993) point out that the co-existence appears in all facets of Indian culture: in child rearing practices, in interpersonal relationships, in intergroup relations, and in public institutions. It does not imply dissonance in the Indian culture. It has been empirically verified in a series of empirical studies in India (Sinha & Tripathi, 1994).

For Koreans, how my mother views me and her expectations are the most important aspect of "Me" and how she views "Me" and her expectations (Kim & Park, 2013). (See Figure 47). I interviewed adolescents in a focus group discussion and asked why they study so hard and long (Kim & Park, 1999; Park & Kim, 2004)? Below is a summary of the focus group interviews:

> *Do you want and like to study*? No, not really. *Then why do you study*? It is because of my mother. She has high expectations and hopes for me. She sacrifices for me by getting up 5 am in the morning and staying up until 12 midnight to take care of me and so I end up studying 14-16 hours a day. I don't want to study, I don't want to eat kimchi, but she forces me to eat kimchi and study. Now, I love kimchi, I am a good student, and I am thankful. Then I interviewed juvenile delinquents who are on probation or in jail. *Why did you engage in delinquent behavior*? It is because my mother

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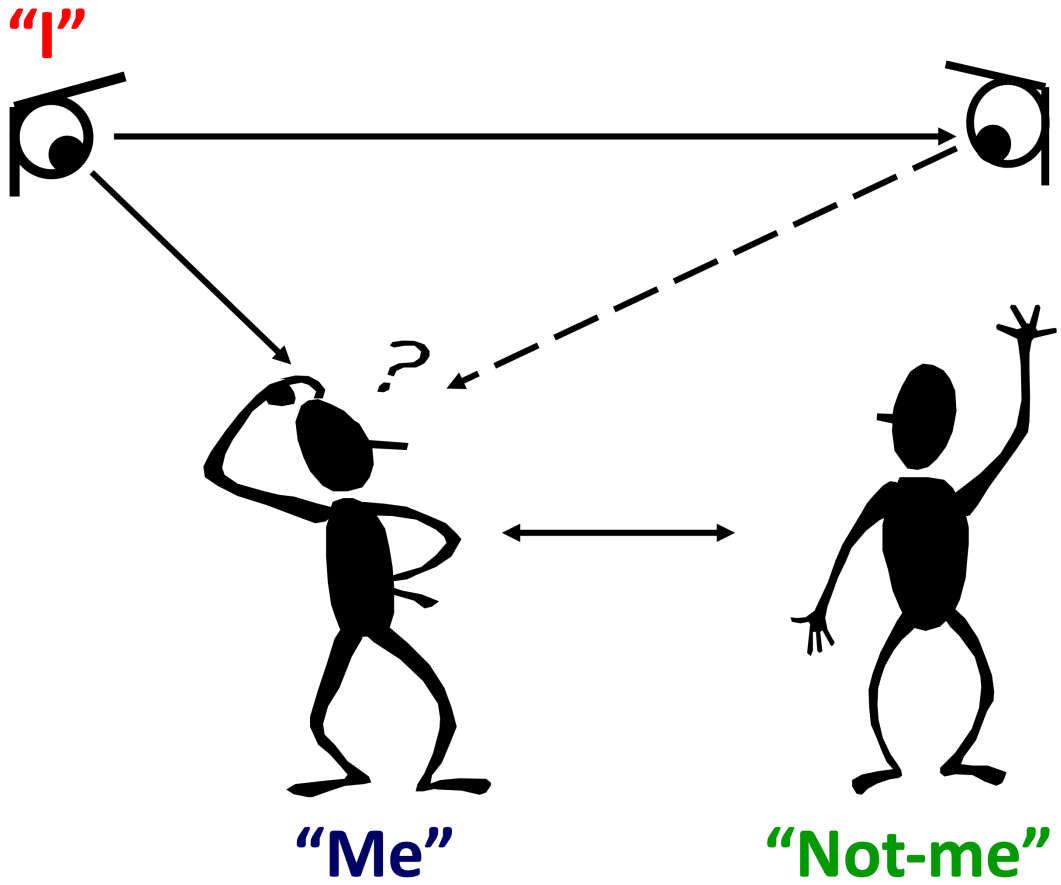
does not love me. She does not care about me. Thus, I am not responsible for my life, I do not care about my life and what I do.

Figure 47: Self and other's perception



In empirical studies of self and academic achievement, parents view their children with love, sacrifice, and hope, and pressure them to achieve (Kim & Park, 2013). However, not every parent is loving and takes care of their children. When children are neglected, rejected, or abused, adolescents do not feel a sense of responsibility for their life, and they morally disengage. In Korea, starting with parents, how other people view "Me" becomes an important aspect of self-identity of how "I" view "Me."

In empirical studies of the conception of the self, the importance of relationship and emotional connectedness have been documented and verified (Kim & Park, 2013). A

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total of 1,465 participants, consisting of 623 elementary, middle, high school, and university students and their parents (421 mothers and 421 father) completed an open-ended survey to freely write down their perception of their mother, father or children, sibling, teacher, and friend. Secondly, they were asked to write their conception of the self when they are with the target person. Figure 48 summarizes the results. (See Figure 48). The width of the bar indicates the degree of importance, and the length of the bar indicates social distance. The results indicate that the self is extended in various relationships and the shared relationship becomes a part of the self. For adolescents, the most important and closest person is the mother, followed by father and then friends. For parents, it is their children, followed by their spouse, and then friends. This is the basis of the extended relational self. Individuals are connected to their past through their parents and to the future through their children. The shared relationship becomes internalized as a part of their conception of the self. When the mother passes away, a part of the person's self is empty, and no one can fill that void. Every lunar New Year and Thanksgiving they go to their mother's grave to pay respect to her and to thank her for all the things she has done.

Figure 48: Relational self

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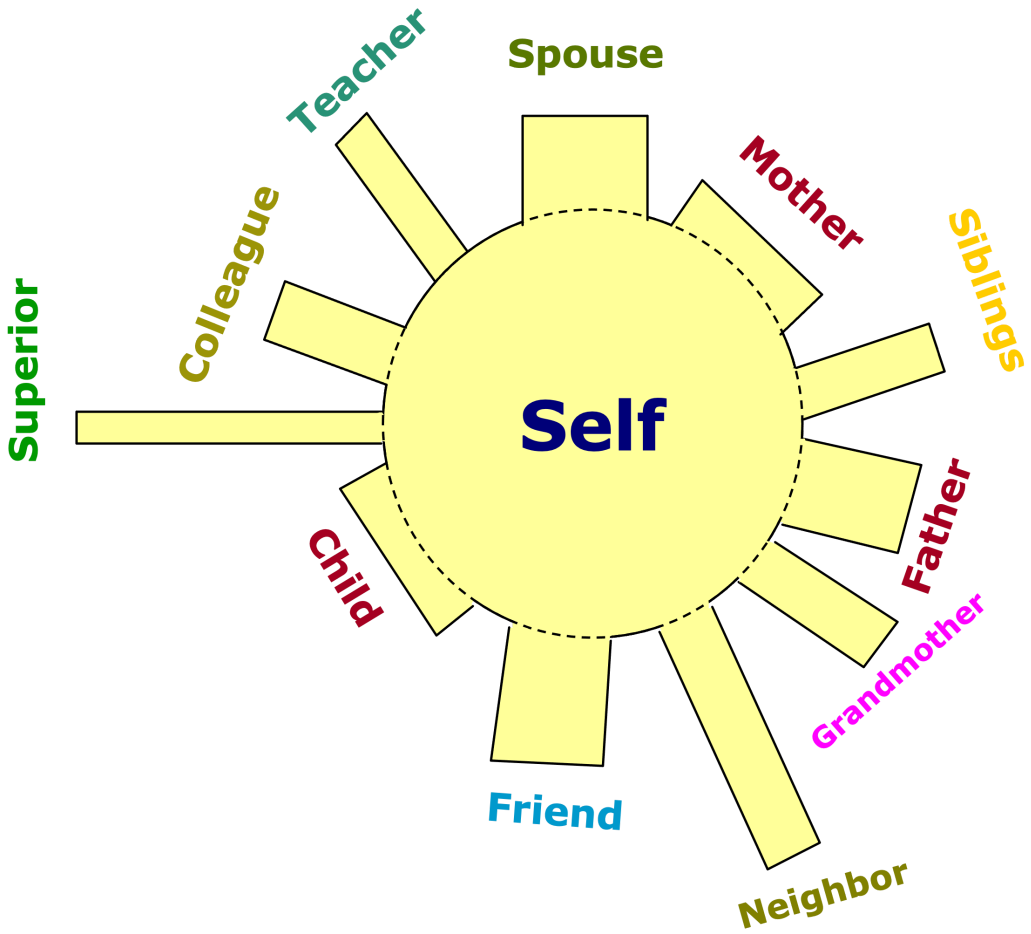

IX. Unified Theory of the Biological World

With the Cartesian duality, the control of the Catholic Church to define the natural world began to wane and allowed the separation of the church and the state to allow scientific research to flourish. Charles Darwin's Theory of Evolution brought a cataclysmic change in defining the mind, self, and culture. As a naturalist and biologist, he travelled around the world to document ecological variations, and the organisms' adaptation to their natural environment. He provided a detailed account of the ecological variations and morphological traits that helped a particular species to adapt and survive. He stated that there are innate biological traits and mechanisms that propel animals to behave in a particular manner and any advantages that help them to survive and are passed onto subsequent generations.

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In 1859, he published a landmark volume, *On the Origin of Species*, outlining the Theory of Evolution by natural selection. He notes that since many more offspring are born than can survive, there is competition for limited resources and the *struggle for survival*. Since offspring can vary in traits (e.g., the morphological structure of the body), those with traits that are adaptive to the environment are *naturally selected* (i.e., *survival of the fittest*). These traits are then passed on to their offspring.

Darwin goes on to state that his Theory can shed light into the origin of human beings and that "man must be included with other organic beings" (p.1). Although the species is the unit of analysis, he proposed instincts to explain the behavior of animals: "it is far more satisfactory to look at such instincts... leading to the advancement of all organic beings, namely, multiply, vary, let the strongest live and the weakest die" (p. 243-244). He articulated the need to extend his Theory to explain human psychology: "Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation" (p. 488).

When Darwin published his book in 1859, research in paleontology and paleoanthropology were in its infancy and he did not have access to fossil records, carbon dating, and genetic analyses. Second, he did not know the mechanism through which biological traits are genetically encoded and passed down to the offspring. Third, he did not know about genetic mutations, which provide a source of natural variation. Fourth, the unit of analysis is the species, but he extended his Theory to include psychology, gender, society, and race, even though he did not have empirical evidence to support his views. Fifth, the process of biological evolution is extremely slow for the variations in traits to be naturally selected, encoded in the genes, and passed on to the subsequent generations. For this reason, chimpanzees and bonobo monkeys still live and behave the same way for millions of years. Sixth, Darwinian Theory does not address the information that is recorded outside the body (e.g., art, book, and computer) that humans use to adapt, survive, and create. Seventh, Darwinian Theory does not address the human exploitation of nature for energy (e.g., wood, coal, oil) and material (e.g., steel, plastic, polyester) that is changing the natural environment. Finally, he did not address the specific biological trait that made humans the most successful species in the world, populating all parts of the world, having control over the fate of all species, and possible destroying of the planet. Finally, using his Theory, how can he explain his own

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behavior travelling around the world and discovering the Theory Evolution? What is the mechanism in his genetic coding that allowed him to become a scientist and discover his Theory?

There is a fundamental finding that the Darwinian Theory cannot explain - the use of contraception by humans. Since the goal of all animals is to survival and pass along one's genes to the offspring, the use of contraception contradicts his Theory. This is an example of falsification that can be used to reject the Darwinian Theory for humans. The goal for species is to adapt and to procreate as much as possible for the survival and flourishing of the species. However, with the use of contraception humans can separate sexual pleasure and procreation and people can choose not to have children. In many developed countries and especially Japan and Korea, the population is declining. Korea and China adopted the 1-Child Policy that is causing significant demographic distortions and ageing of society. These changes created a unique situation in Korea, with the lowest fertility rate in the world of 0.78 and with the ageing of society, the population is declining with more deaths than births for the first time in Korean history (Kim & Kim, 2022).

Catastrophic environmental changes can lead to the extinction of species, such as the dinosaurs when a meteor hit the earth 66 million years ago. The super volcano erupted around 76,000 years ago in Toba, Indonesia, and it started the Ice Age, which resulted in the extinction of many species. Human activities are now contributing to the climate crisis, deforestation, and the extinction of species. How can Darwin explain the changes of the environment caused by a single species that is influencing the environment, extinction of species, and possible destruction of the world through a nuclear war? Humans are replacing natural selection through contraception and by protecting the endangered species and breeding Pandas and creating sanctuaries. We are now modifying genes through cloning and through biotechnology.

Social Darwinism

The introduction of the Darwinian Theory has not changed the workings of the natural world, but it created a seismic change in the human world. The Theory has been

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extended and applied in psychology, sociology, economics, business, management, and political science, to explain and justify competition, natural selection, and the survival of the fittest of individuals, companies, and differences in races. Social Darwinism has been used to justify colonialism, slavery, racism, sexism, social inequality, eugenics, and immigration restrictions (Burke, 1985; Chorover, 1980; Kamin, 1974; Kim & Chun, 1994).

Darwinian Theory removed human agency, morality and ethics and replaced it with competition, struggle for survival, natural selection, and the survival of the fittest (Burke, 1985). Darwinian Theory resonated with aspiring dictators who wanted to create, justify, and reify three contrasting political ideologies: German Nazism, Russian Communism, and the American free-enterprise capitalism. In Germany, the nationalist movement emerged with the establishment of Prussia (1871). Anthropologist Otto Ammon stated: "Darwin must become the new religion of Germany... the racial struggle is necessary for mankind" (Burke, 1985, p. 266). Ernest Haeckel combined German nationalism with Social Darwinism to unite the country under the banner of Aryan racial superiority to lay the foundation for Nazism and genocide (Burke, 1985; Chorover, 1980).

In the USA, Social Darwinian was used to support individualism, competition, and free-enterprise capitalism (Burke, 1985). William Sumner, a clergyman and professor of sociology at Yale University, supported the laissez-faire economics and free markets: "Millionaires are a product of natural selection... Let it be understood that we cannot go outside this alternative: liberty, inequality, survival of the fittest; not liberty, equality, survival of the unfittest" (Burke, 1985, p. 272). John D. Rockefeller stated the "the growth of a large business is merely the survival of the fittest" and "this is not an evil tendency in business," but "it is a merely the working out of a law of nature and a law of God" (Burke, 1985, p. 271).

In England, Karl Marx was excited to read about the struggle for existence and wrote to Friedrich Engels that "*Origin* is the natural history foundation for our views" focusing on the competition among classes (Burke, 1985). It is ironic that Social Darwinism helped to define human life as the struggle of the races (Nazism), struggle among classes (Russian communism), and competition among individuals, businesses, and

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enterprise (the USA free-enterprise capitalism). The assumptions of three contrasting political ideologies emerged to fill the moral vacuum and clashed during World War II and the Cold War. This had led to the creation of the Left and Right of the political parties that still pervade in politics and the dysfunctions that come with them (Burke, 1985).

Genetics and neurobiology

Genes are found on chromosomes and are made of Deoxyribonucleic acid (DNA), and they influence and determine the characteristic traits of an organism (e.g., the color of a bird's feathers or the shape of its beak).[15] The Human Genome Project, the world's largest collaborative biological project, was launched in October 1990 to map and sequence the euchromatic portion of the human genome.[16] It was completed in April 2003. The genome sequence analysis covers 99% of the euchromatic genome, and it is accurate to an error rate of 1/100,000 bases. International Human Genome Sequencing Consortium (2004) concluded that humans have around 20,000-25,000 protein-coding genes.

We are born with a particular set of genes, but they do not determine how the genes work and are expressed. Gene expression refers to *when* and *how frequently* the proteins are produced from the instructions of the genes, including when and how frequently they are made. Deans (2015) points out that a particular gene does not define a specific genetic expression, and two identical genes can work differently. They can be turned on or off, like the volume on a mobile phone where the volume can be turned on in different amounts, in different places, and at different times. One trait can be affected by several genes and one gene can affect several traits at the same time. They found that experiences and environmental factors can cause epigenetics, which is the change in how the genes work. Most genetic traits are influenced by the environmental factors and experience (e.g., diet, vitamin D, sea level, where one lives, and the experience of stress). While genetic changes can alter which protein is made, and epigenetics affect the gene expression to turn the genes on or off.

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Although the same genes are found in the same brain regions for humans and chimpanzees, they can be turned on or off, up or down, or in different amounts. Even though humans and chimpanzees share 98.8% of the genes, each human cell contains around 3 billion base pairs or bits of information and 1.2 % equals about 35 million differences.[17] Some differences have a large impact, and others do not, since it can be turned on or off and in different amounts, in different places and at different times.

A renowned geneticist Spencer Wells (2002) with the cooperation of National Geographics conducted genetic analysis of people around the world to discover the origins of our ancestry (Wells, 2002; See Figure 49). By examining the mutations in our recessive gene in the Y chromosome, known as the M168 (Haplogroup CT, Y-DNA), he could figure out the origins of human ancestry. He concludes that the ancestry of the Homo sapiens can be traced to a single tribe known as the San people or Bushmen in southern Africa around 60,000 years ago.

Figure 49: Genetic tests of people around the world

With the effect of the Ice Age, they began to migrate to northern Africa. (See Figure 50). With the lower sea level due to the effects of the Ice Age, they could cross the Red

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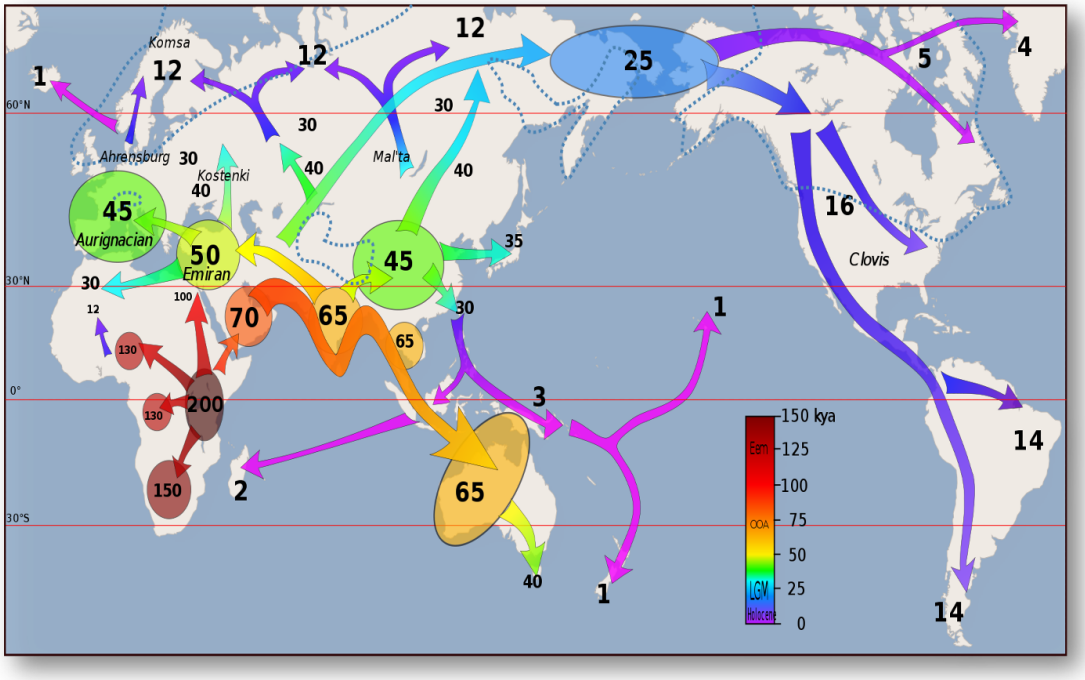
Sea and populate the Middle East. Some moved north to Central Asia and moved further north to become the current Europeans. Others moved southeast to Southeast Asia and travelled down to Indonesia and Australia. Others went to Central Asia, and they migrated north to Mongolia, China, Korea, and Japan. With the hunting of reindeer and elks, they were able to cross the ice bridge that connected Siberia and Alaska. They then travelled down to North America, Central America, and South America. With each migration, they were able to innovate and adapt to a very different ecological context.

Figure 50: Human migration based on genetic analysis



Additional research confirm that humans evolved from a single tribe in the African savanna and populated the world, confirming the "Out of Africa" hypothesis (Bräuer, 2007). For this reason, humans share 99.9% of the genes. It makes the concepts of race, a sub-species category, unscientific. The concept of race as developed to justify colonialism and dehumanizing slavery by colonial masters in the 18th century who claimed that Africans and Asian were genetically inferior, with innate intellectual deficits, and as such their subjugation is justified. For example, Francis Galton (1822-1911) created the field of phrenology that analyzed the structure of the skull to show

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why Europeans were biologically superior to Africans and Asians, but scientific results refuted his claims. It is continued by proponents of sociobiology and IQ testing.

Skin color is caused by the sustained exposure to ultraviolet radiation, and it does not influence the functioning of the brain or intellectual capacity. However, race is used as a social and political concept, and many people claim that it can be linked to genetic deficit causing intelligence, personality, and intellectual deficits. Treating people as an object through racism, sexism, homophobia, and social class is an example pseudo-science and moral disengagement that denies the person, group, or culture the basic human dignity to define themselves and limits their ability to realize their full human potential and exercise their agency (Bandura, 2023; Hüther, 2016).

Neurobiology and neuroplasticity

Eric Kandel (2007) won the Nobel Prize in 2000 for the "discoveries concerning signal transduction in the nervous system." He states that "learning is the process by which we acquire knowledge about the world" and this knowledge is recorded in our memory. He investigated memory in the hippocampus and identified proteins that were synthesized to convert short-term memories into long-term memories. During the process of experience and learning, the number of synaptic connections could be doubled in the neurocircuit, altering the expression of genes in the neurons, and causing the growth of new synaptic connections. The difference between the short-term and long-term memory is the strengthening of the synapse and creating new synapse connections. He concludes that "the brain can change because of experience" and nature and nurture interact, and they are not separate processes (Kandel, 2007).

A leading neurobiologist Gerald Hüther (2016) conducted research with children and adults using neuroimaging fMRI. His results challenge the traditional biological and psychological theories claiming individuals are born with fixed ability and personality traits. He has found that infants are born with potential, the brain is neuroplastic, and it is shaped by relationships and experiences.

Recent research indicates that infants are born with up to 100 billion neurons and with 100 trillion possible connections. Hüther (2016) points out that infants are born with

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genes that provide them with potentials for development and their experiences can connect the neurons into specialized integrated neural circuitry. If an activity is repeated over time (e.g., riding a bicycle, driving, reading, or playing piano, flute, or football), the connections operate faster, more efficiently, and in an integrated manner, creating neural circuitry. More importantly, whenever a sensation goes to the brain, it passes through the limbic system where emotions and memories are connected. These findings refute the idea of objectivity since all sensory information are connected with emotion and memory in the limbic system and then travel to the prefrontal lobe where we make executive decisions.

Hüther (2016) points out that the brain (hardware) and mind (software) are connected through experience and human relationships in an integrated, complementary, and inseparable way as infants learn to grow and develop. Although the brain is located within the individual, the connections made in the brain are shaped by the relational and social experiences in the family, community, and culture. Parents select and manage the environment in which the infants grow, such as the living space, diet, and playmates. As such, the brain is "socially constructed."

A child is born with curiosity, interested in learning, and when they learn, they feel joy and happiness through the release of endogenous opiates such as dopamine. Once they successfully manage to walk, talk, sing, and dance, they become happy, and they are willing to face new challenges. The positive experience further simulates their curiosity, their willingness to face new challenges with optimism, and they feel happy when they achieve their goal, creating a virtuous cycle. Stress, in contrast, is caused when the children receive information that they cannot manage the situation and they feel helpless; it stimulates a fight-flight-freeze response, and the brain stimulates the secretion of hormones that can damage the cardiovascular, immune, and digestive system and cause anxiety and depression; this is a vicious circle.

The genes of an infant do not specify how the billions of neurons are to be connected and expressed. During the learning process, infants and children are constantly looking for reassurance from their parents and family members as they explore new environments, engage in new activities, and meet new people. When they learn something new and succeed, they are happy, and the incoherent state of the brain (which

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causes imbalances) is transformed into coherence and creates a strong sense of self-efficacy (Bandura, 2023). During this process, there is an increased release of dopamine and endogenous opiates that activate emotional networks of feeling happiness and joy. The new synaptic connections are integrated into efficient neural circuitry and children seek challenges, new experiences, and new playmates.

For the child, every new discovery, understanding, or accomplishment triggers a rush of excitement. This enthusiasm and joy of learning serve as the fuel for the further development of the brain: "In downstream networks, the messengers initiate the expression of specific genetic sequences, and the increased production of those proteins needed in order to grow new filaments and to create and reinforce contacts between nerve cells" (Hüther, 2016, p. 90).

The brain needs a huge amount of energy to maintain itself and to connect and organize the neural network. Even at rest, the brain uses around 20% of the body's energy. The brain will try to optimize energy used by rewiring and changing the connectivity to lower energy requirements. The lowest amount of energy that is needed for the brain is when a person is in a state of coherence. People are satisfied to be in a state of coherence, maintaining their existing mindset and lifestyle since it will not require additional energy expenditure and resources to change the situation. In contrast, people feel happy when they are engaged in novel, meaningful, and challenging activities. In other words, people have a choice of being satisfied by maintaining their optimal and coherent mindset and lifestyle, or become happy engaging in novel, stimulating, challenging experiences. Research indicates that children prefer to seek challenges of learning and engaging to be happy, while adults and elderly prefer to maintain their existing mindset and comfortable lifestyle that are familiar, predictable, and sustainable.

Science and the Practice of Mindfulness

Recent advances in fMRI and neuroimaging allow researchers to investigate how the mind and brain interact to promote inner peace and happiness through meditation, known as mindfulness. It originates from Hindu and Buddhist tradition and is practiced through prayers and rituals in Christianity, Islam, and Judaism.

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The essence of Buddhism can be summarized into the Four Noble Truths and Eightfold Path. It states that life is suffering because we have desires. It stands in sharp contrast to Maslow's Hierarchy of Needs which states that you need to satisfy your biological, security, and social needs before you can self-actualize. In Buddhism, to reach enlightening, we need to give up these desires and follow the Eightfold Path: Wisdom (right understanding and thoughts), Morality (right speech, action, and livelihood) and Concentration (right endeavor, mindfulness and concentration), paralleling the functions of the medial prefrontal cortex outlined by Siegal (2010).

The practice of mindfulness is to focus on the present experience, on a moment-to-moment basis, and to create self-awareness. It involves understanding the physical body, starting with breathing and external stimulation that influence the body and mind. It examines one's feelings (e.g., pleasant, unpleasant, or neutral) from a detached point of view. It examines one's perception, becoming aware of the properties and attributes of an object (e.g., color, shape, or texture). It examines one's intention and will and its manifestation in the body, words, and actions. It examines one's sensory consciousness and how the five senses (seeing, hearing, smelling, tasting or touch) influence one's thoughts and emotions, similar to Wilhelm Wundt's exploring the consciousness through introspection.

Neuroscientists began to examine how mindfulness can influence the brain structure and function. Fox et al. (2014) reviewed and conducted meta-analysis of 21 neuroimaging studies of around 300 meditation practitioners examining 123 brain morphology differences addressing the following two questions: "Is meditation associated with altered brain morphology in any consistent, replicable way?" and "what is the magnitude of these differences?" (p. 48). They have found that the "anatomical likelihood estimation (ALE) meta-analysis found eight brain regions consistently altered in meditators, including areas key to meta-awareness (frontopolar cortex/BA 10), exteroceptive and interoceptive body awareness (sensory cortices and insula), memory consolidation and reconsolidation (hippocampus), self and emotion regulation (anterior and mid cingulate; orbitofrontal cortex), and intra- and interhemispheric communication (superior longitudinal fasciculus; corpus callosum)" (p. 48). They conclude that "meditation appears to be reliably associated with altered anatomical structure in several brain regions... these differences appear to be about 'medium' in magnitude (as measured

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by effect size)" and the "combined neuroimaging-based and effect size meta-analyses suggest that the results to date show a fair degree of regional consistency and relatively large magnitude -- and, potentially, practical significance" (p. 69). Research on neuroimaging examines how human behavior and experiences alter brain structures and functioning, and they are the window into understanding how the brain, body and the mind work in coordination and conjunction with each other.

X. Secrets to Happiness, Health, and Long Life

In 2005, I was approached by the Korean National TV station SBS. They had a weekly 1-hour investigative documentary series entitled, "I Want to Know," covering important social issues. Baby boomers in Korea grew up in one of the poorest countries in the world and most Koreans believe that economic development and wealth will solve all the personal and social problems, and they would be happy, healthy, and live long. The special 1-hour edition was entitled: *Can money buy happiness*?

It is important to briefly examine Korean history and suffering, and why most Koreans believe that money can buy happiness. At the turn of the 20th century, Korea was one of the poorest nations in the world and starvation was a part of life. The per capita gross national income (GNI) in 1955 was $65. Most people lived and worked on scare arable land and the literacy rate stood at 22% in 1945 (Kim & Kim, 2022).

In 1905, the USA and Japan signed a secret pact known as Taft-Katsura Memorandum allowing Japan to colonize Korea and the USA to colonize the Philippines (Kim & Kim, 2022). Korea was annexed by Japan in 1910 and experienced brutal colonial rule. With a desire to create the Japanese Empire, Korean language, culture, and identity were destroyed. Millions of Korean men were forced to work as slaves in Japan, China, and Russia and thousands of women were captured as sex slaves for the Japanese military (Kim & Kim, 2022).

When Japan surrendered to the USA in 1945, Harry Truman of the USA and Joseph Stalin of USSR divided Korea along the 38th parallel. The USA installed Rhee

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Syngman who was born in Hawaii, who could barely speak Korean and married to an Austrian. His administration was corrupt and nepotistic, and South Korea remained in poverty during the 13 years of his dictatorial rule (Kim & Kim, 2002). In 1950, North Korea invaded South Korea to start the Korean War (1950-1953), in which three million people died, and 10 million people were displaced. A tentative truce was signed in 1953, and the De-Militarized Zone was established along the 38th parallel. The USA still maintains military control of the most dangerous border in the world. It is hypocritical that the USA, which helped Japan to colonize Korea in 1910, divide the two Koreas in 1945 that led to the Korean War, and appointed a corrupt dictator, can claim that they are liberators and protectors of freedom, human rights, and peace in Korea since they acted in an opposite manner (Kim & Park, 2005).

On May 16, 1961, general Park Chung-hee led a *coup d'état* and declared martial law. He rejected the American economic and social model and ruled South Korea (abbreviated as Korea) with an iron-fist for the next 20 years (Kim & Kim, 2022). Park emphasized communist containment and economic development as its top priority. Figure 51 provides the economic growth and fertility rate from 1955 to 2021. (See Figure 51). The Korean economy grew to reach GNI of $35,168 in 2021. In 1996, Korea joined the Organization for Economic Cooperation and Development (OECD) and became the first major recipient of the UN Official Development Assistance to become a major donor of $1.7 billion. Korea currently is the 4th largest economy in Asia and the 10th largest in the world. If money can buy happiness, then the rapid economic growth and wealth during the past 70 years should make Koreans one of the happiest people in the world.

Figure 51: Korean Gross National Income and birth rate

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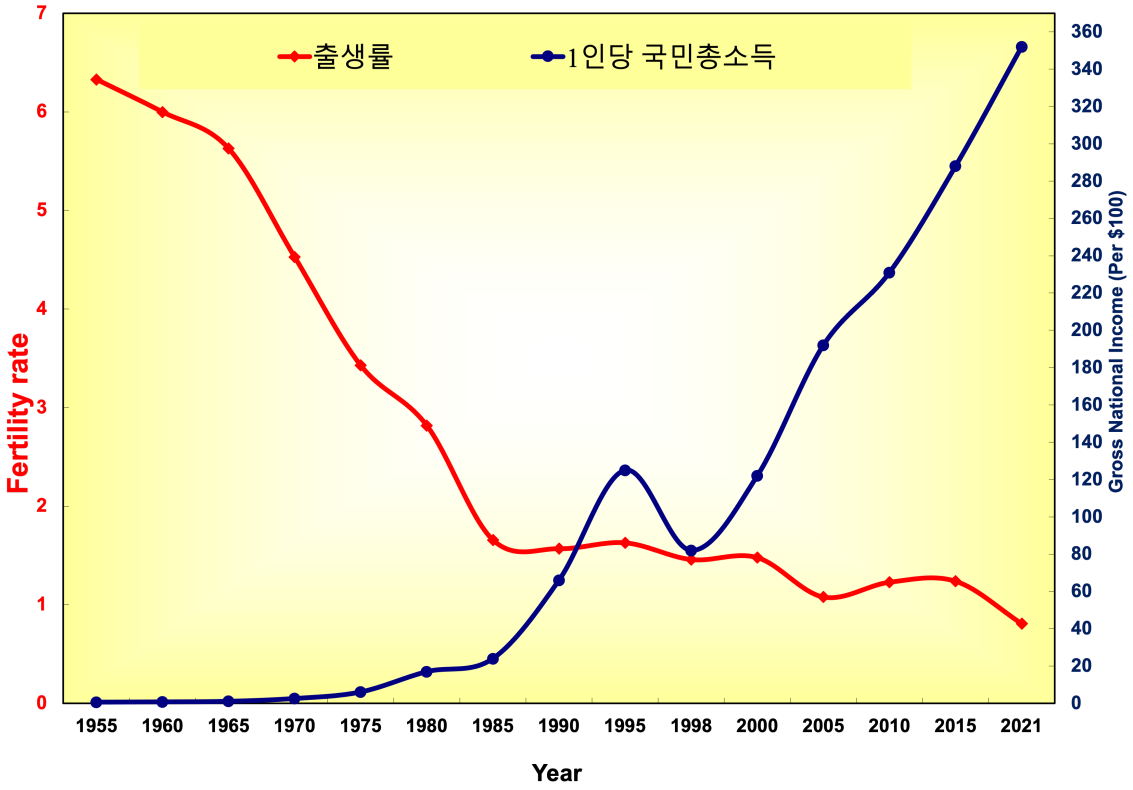

In the preliminary review of the lottery winners in Korea and around the world, the producers have found that more than two-thirds of lottery winners became unhappy after they won a large sum of money. The producers have commented: Many people have won the lottery and fulfilled their lifelong dream. They should be very happy. In Korea, there are more than 100,000 people who became rich by winning the lottery or selling their land, or through investments, and they should be very happy. Farmers who gave up the back-breaking work and became rich by selling their land to the property developers should be happy. Did their lives improve, and did they become happier once they became rich?They interviewed many people for their TV documentary, and they found that money did not buy happiness but misery for the majority of the people:

Case 1: In a rural farming village, a family received $10 million for selling the land to property developers. It was their lifelong dream to become rich and they could retire in peace and have financial security for their children. However, their life was ruined. A family member passed away being shocked that the ancestral graves were moved. The villagers spread a vicious rumor about the corruption in selling the land and they

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became outcasts. As anxiety and stress increased, the father became depressed and committed suicide.

Case 2: A couple won the jackpot of $4.3 million lottery three years ago. Winning the lottery seemed to be a life-changing dream come true. The husband previously worked long hours as a policeman and then as a taxi driver. As time passed, they noticed a change: "I used to be close to my friends, but with the large sum of money that I won, people changed. I suffered because of the stinging gaze that my son received believing that he entered university through bribery."

Case 3: A couple in poor financial condition won the lottery for $17 million. They began to have conflicts since the husband wanted to quit his job to enjoy life. The husband was upset seeing his wife spend a large amount of money on the in-laws. The couple, who believed that winning the lottery would make them happy, divorced after 9 months and went through a messy lawsuit torturing each other.

In the above three cases, the common feature is that the newfound wealth disrupted people's lives with the expectation that money will solve all their problems. Money can solve existing financial constraints, but it can create new problems within the family and social relationships that they were not prepared for. They did not have self-efficacy or the necessary social support to deal with these problems. Money can magnify the existing personal and relational problems that were ignored while they were focusing on making ends meet. They did not expect the new problems and they were not fully prepared to deal with a change in lifestyle, relationship, and living in a new neighborhood. Most importantly, it led to break up of family and close relationships that made them miserable, stressed, and depressed.

Many working-class people who win the lottery invest their money or start a new business based on the advice of their friends and relatives, and most people lose their money. This is also the case of retirees who receive a lump sum for their retirement, but they end up losing their life savings due to bad investments. They lack the skills in managing a business or lending money to friends who go bankrupt and disappear with the money. However, those people who were already rich and had self-efficacy and social support allowed them to manage their finances and relationships effectively.

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Of those who were content and happy with their lives after winning the windfall cash, they maintained their existing lifestyle and relationships. They did not change a thing in their life except to pay off their debt and deposit the money in the bank. They maintained their current jobs working in a restaurant or being a cleaning lady, lived in the same community, and did not allow money to affect their lives or relationships.

One middle-class family received a relatively small amount of $10,000. Since it was not enough to meet all the wishes of the family members, they had a family meeting and decided to donate the money to the less fortunate. They had a comfortable life and decided together that it is more meaningful to donate the money to the less fortunate. The act of winning and donating the money brought the family closer together and made them happy. This is a rare case, but it is important to point out that the most important aspect of money is how you make it and spend it.

World Happiness Survey

The results from the World Happiness Survey found that Korea is ranked 57th among the 150 participating countries with the mean score of 5.951 on a 11-point Cantril Self-Anchoring Scale (from 0-10), which is much lower than the OECD average of 6.7.[18] This is down from the rank of 41st with the mean score of 6.267 in 2013. For the past 10 years, the mean score has been below 6.0. It is much lower than their close cultural and economic counterpart Taiwan, which is ranked 27th with the mean score of 6.535. The Korean score has not changed in the past 10 years even though the economy has been growing. If Korea is the 10th largest economy in the world, why are Koreans not as happy as neighboring Taiwan and other economically developed countries?

We need to examine the basic assumptions about the relationship between economic development, income, and happiness. The Korean economic and political system that propelled rapid economic growth also created the social problems and the destruction of Korean families and relationships, the same way that winning a lottery can change people's mindset, lifestyle, and relationships.

With the 1-child policy implemented in 1971 and increased rural to urban migration, more than 81.5% of Koreans now live in urban cities (Statistics Korea, 2023). Korea

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has the lowest birthrate of 0.78 in 2023, the lowest in the world. (See Figure 51). Unmarried women (62%) and men (46%) between the ages of 30 and 44 think it is alright to not get married. Korea has one of the highest divorce rates of 2.1 for 1,000 people in OECD and the suicide rate is 25.7 for 100,000 people. For Koreans over the age of 65, more than 40% live in poverty and 30% live alone, the highest rate in the OECD (Statistics Korea, 2023). It is ironic that Korea joined the OECD in 1996 and it leads in negative categories, such as the lowest birthrate, highest divorce rate, suicide rate, and poverty rate for the elderly.

According to Statistics Korea (2022), they found that more than 800,000 or 38.4% of the work force had a temporary job. Temporary workers receive 47% less salary than regular employees and they do not receive full health insurance, unemployment, retirement, and welfare benefit. With a lack of decent jobs, rising costs of living, and soaring housing prices, 30% of Gen Zs are living alone and more than 55% of unmarried children in their 30s live with their parents. A total of 62% of children aged 20 to 44 live with their parents and 42% of them are unemployed. Around 42% are delaying their plans or have given up on starting a family. Many young people have given up on dating, marriage, and children.

A survey of 34,147 adults in 2019 indicates that only 22% believe that they can move up the socio-economic ladder, down from 38% in 2009 (Statistics Korea, 2019, 2022). In 2009, 48% of Koreans believed that their children would have a better life, but declined to 29% in 2019. These results are consistent with the report by Chetty et al. (2008) who found that 92% of people born in the 1940s had higher incomes than their parents, but currently only 50% will have a higher income than their parents. They conclude that it is the first time in the history of industrialization, where young adults will have a lower income than their parents. In Korea, the unemployment rate has risen to 4.4% and three times higher at 12% for the Gen Z. Does this mean that the Gen Zs who face a bleak economic future will be miserable and much less happy than their parents? This would be the case if we focus on income, but if we focus on their experiences, relationships, and self-efficacy, then we obtain a different set of results.

Income, life-satisfaction, and happiness

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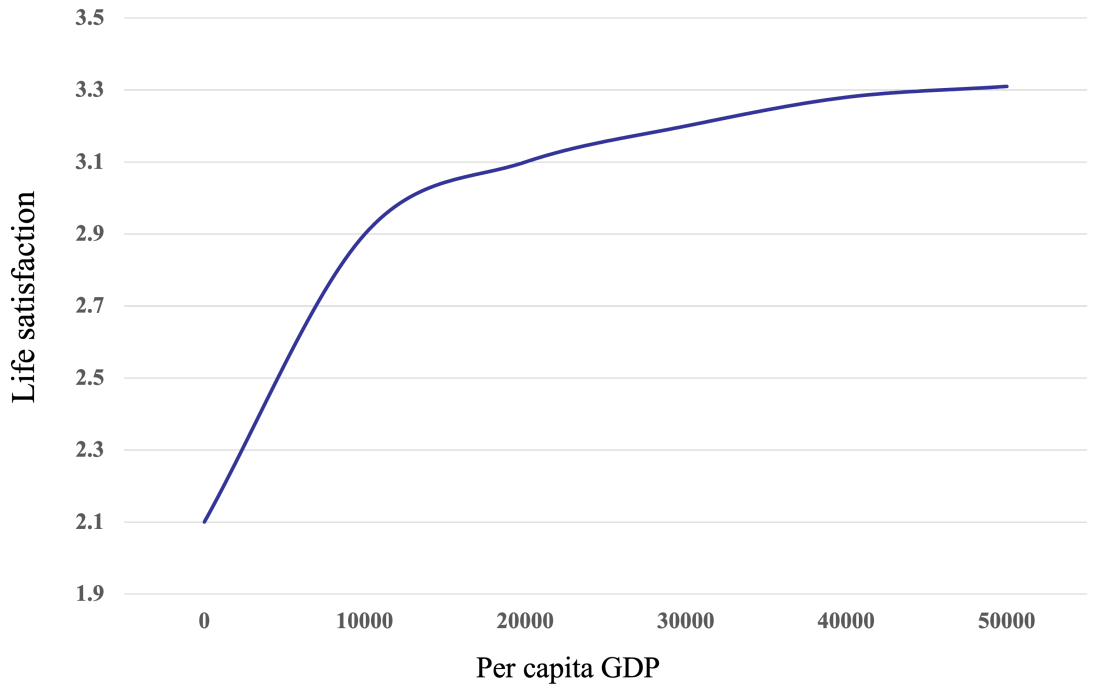
Richard Easterlin is the first economist who linked and analyzed economic growth to happiness. Easterlin (2003) points out that economic theories have traditionally focused on income and national wealth as predictors of happiness and well-being. In 1974, he conducted a study linking economic development with happiness. Using the Cantril Self Anchoring Scale, rating from 0 to 11, he asked: "All things considered, how satisfied are you with your life as a whole these days?" He obtained data in 37 countries: Developed=17, Developing =9, Underdeveloped=11. In the cross-national comparisons, he found that as income increases, happiness both within and across nations increases, but the curve peaks and flattens. (See Figure 52). He found that happiness increases until the per capita GNP reaches $17,000, then it peaks, and income does not significantly increase happiness from that point (Easterlin et al., 2010). This became known as the Easterlin Paradox. He points out that happiness at the national level does not increase with wealth once the basic needs are met.

Figure 52: Easterlin Paradox



Adapted from Easterlin and Angelescu (2009)

Daniel Kahneman won the Nobel Prize in economics in 2002 showing that biases and context can influence our decision-making and challenged the assumptions of the rational theory in economics. He helped to launch the annual UN World Happiness

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Survey and OECD Better Life Survey. He conducted research on the experiences that made life pleasant or unpleasant, and extended his research to happiness and life-satisfaction.

Kahneman and Deaton (2010) conducted a systematic investigation examining emotional well-being and life-evaluation that are part of happiness.They analyzed 450,000 responses from Gallup National Health and Well-Being Index and a daily survey of 1,000 US residents. Emotional well-being refers to the emotional quality of an individual's everyday experience, the frequency and intensity of experiences of joy, stress, sadness, anger, and affection that make one's life pleasant or unpleasant. Life evaluation refers to the thoughts that people have about their life. They raised the question of whether income increases happiness for the two aspects of well-being. Subjective well-being included the question of "How satisfied are you with your life?" and "How happy are you these days?" They found that that income is more strongly predictive of satisfaction than happiness.

Kahneman and Deaton (2010) found that emotional well-being, health, caregiving, loneliness, and smoking are strong predictors of daily emotions. Life evaluation, measured by the Cantril Self-anchoring Scale, is positively correlated to income and education. Life evaluation predicts income, but for emotion well-being the correlation to income peaks around $60,000 and do not go up very much thereafter, confirming the Easterlin Paradox. (See Figure 53). Based on the results, they conclude that low income predicts lower life evaluation and low emotional well-being. High income can get rid of problems in life and predicts life-satisfaction, but not emotional well-being.

Figure 53: Happiness and life-satisfaction

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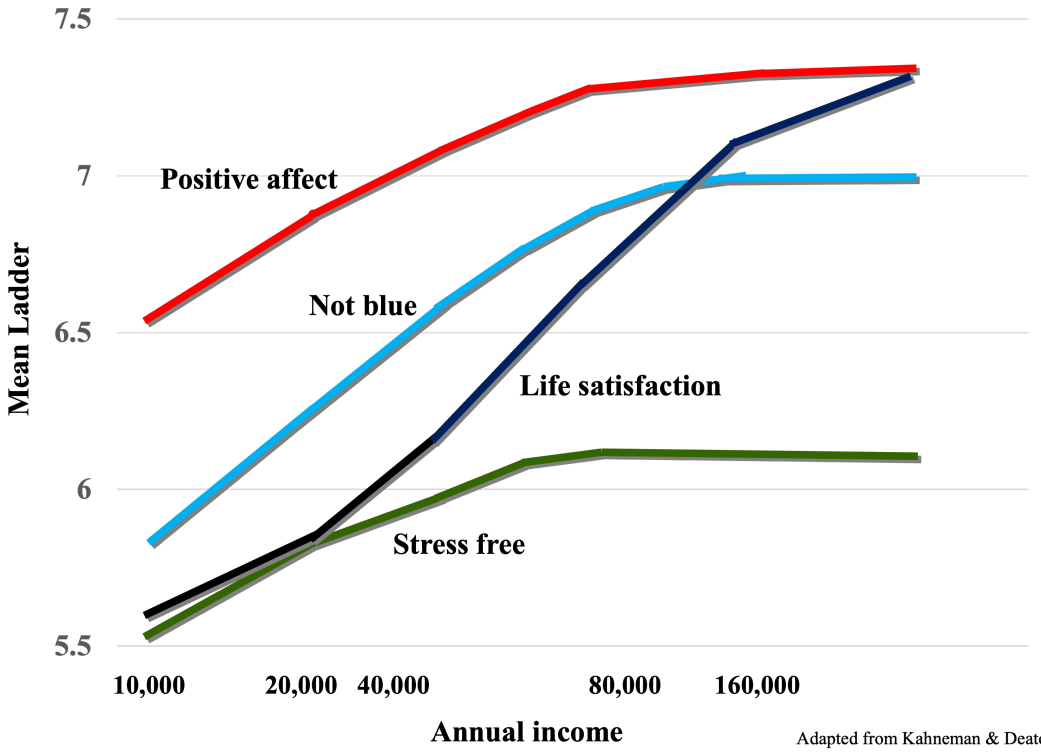

Adapted from Kahneman & Deaton (2010)

Kahneman and Deaton (2010) notes that if you ask people what they want most in life, the majority will say they want to be happy. However, most of us are working toward achieving goals, which are the basis of life satisfaction. They contend that happiness and satisfaction are distinct. They note that satisfaction is correlated around r=0.5 with happiness, explaining only 25% of the variance and leaving 75% unexplained. They note that life satisfaction is retrospective and evaluative. It is a feeling built over time and based on one's achievements, goals, and meeting one's expectations using a social yardstick (e.g., income, wealth, and possessions). Happiness, in contrast, arises from momentary experience, our day-to-day experiences that are spontaneous and is fleeting: "What I experience here and now."

Happiness arises from the experiences that leave people feeling good. For those who are focused on long-term goals and achievements, they do not invest as much time to spontaneously experiences and socializing with friends. People do not maximize happiness, but maximize their life satisfaction, which leads them to completely different paths. When we work towards our goal and aspirations, it can prevent us from being able to fully experience happiness, and to be with the people that we like. What controls and predicts life satisfaction? Money and achievements. What predicts happiness? Being

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around people that we like and spending time with them. It is the difference between achievements and success and being happy in your life.

They found that overall job satisfaction did not strongly correlate with enjoyment of job tasks. Our career is satisfying when it is going in the right direction, and we can reach our long-term goal. Even if we enjoy the day-to-day activities in our work, we will not feel satisfied in a job if it isn't going in the right direction and if it doesn't lead us to the long-term goal. Income and education are closely associated with life evaluation, but health, caregiving, and low levels of loneliness were stronger predictors of daily emotions of happiness. Low-income increases unhappiness and it multiplies the emotional pain of misfortunes (e.g., divorce, poor health, and being alone).

They conclude that low income is associated with both low satisfaction and unhappiness. The higher the income is, the more it is associated with life satisfaction, but not happiness for developed countries and those with adequate income. The different results found for life satisfaction and happiness are due to the different aspects of the self: Experiencing self, the "Me" lives in the present moment. Remembering self, the "I" is evaluative. The "I" remembers the narrative, story of our lives, our memories of ourselves, and what we get to keep. (See Figure 40). The Remembering self is the one that makes the decisions. When we make choices about the future, it involves anticipated outcome. We don't make choices based on our experiences, but we choose between memories of our experiences that provide achievement and fulfillment of our goal.

Time is a great equalizer in life since everyone has 24 hours in a day. Depending on our goals, we allot different amounts of time for what we do. For the Experiencing self, if you enjoyed a vacation in Hawaii or Bali for one week and you extended the vacation to 2 weeks, you would have similar experiences. In terms of experience, your vacation should be twice as good as the one-week vacation. However, for the Remembering self, the 2-week vacation is only slightly better since there are no significant new memories added or a change in the story. For the Remembering self, the amount of time spent has very little impact on the story that is stored in our memory, only how much we have achieved and how closer we are to our life goal.

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Life satisfaction and happiness are very different concepts since the memory of satisfaction is enduring, but feelings of happiness are momentary and fleeting. Is it true that the Remembering self is the one that makes the decisions, and it supersedes the choices based on our experiences? Most moments are not stored in our memory and many people like to take photos "to capture the moment." The psychological moment lasts around 3 seconds, and we experience 600,000 moments in a month and 600 million in a lifetime, but most moments of our lives are not stored in our long-term memories but are compressed into stories and evaluations. Although a person experiences life continuously, memories are stored as stories. Stories record significant moments and changes, and they have an ending. The ending is the most important aspect for the Remembering self, and it dominates our evaluation. As such, life-satisfaction dominates over happiness as we get older since we have more and richer stories. We choose between memories of our experiences that will provide achievement and fulfill our goal and as such, people have given up being happy. In regards to happiness, most people pursue freedom, wealth, fame and recognition, believing that they will lead to happiness.

Will success lead to happiness and can money buy happiness? There is a difference between individual-centered cultures and relationship-centered cultures. Korean culture places more importance on relationships and social evaluations: What my mother thinks of me and how she evaluates my behavior, me as a person is often more important than how I evaluate myself (Kim & Park, 2013). Koreans are much more sensitive to social standards, comparison, and pressure that can make them feel inferior and less valued or they can feel superior to others based on how their mother or others view them. (See Figure 47). This may explain why Koreans score low on happiness.

Harvard Study of Adult Development

Harvard Study of Adult Development tracked the health of 268 Harvard men starting from 1938 for 85 years. They supplemented the sample with data from their children and spouse and 456 Boston low-income residents. They recorded and analyzed life experiences, income, personality, IQ, health and medical records, DNA and MRI scans of the brain and found a very surprising pattern of results. Waldinger and Shulz (2023)

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note that existing assumptions and theories emphasize success, income, wealth, genetics, intelligence, and personality will be the most important predictors of happiness, health, and longevity. However, they found that maintaining good relationships is the best predictor of happiness, health, and longevity. Money can get rid of problems, financial stress, and unhappiness, but it cannot buy happiness. The secret to happiness, health and long life is maintaining good relationships throughout one's life.

Previous Director, George Vaillant, found that financial success depends on the warmth of relationships that participants had in their childhood, not on intelligence. Valliant (2015) found the following series of results. No significant difference in maximum income earned by men with IQs in the 110--115 range compared to men with IQs higher than 150. Those who scored highest on measurements of "warm relationships" in early childhood earned an average of $141,000 a year more at their peak salaries, usually between ages 55 and 60. Men who had "warm" childhood relationships with their mothers earned an average of $87,000 more a year than men whose mothers were uncaring. In their late professional lives, the men's boyhood relationships with their mothers were associated with effectiveness at work. The warmth of childhood relationships with fathers correlated with lower rates of adult anxiety, greater enjoyment of vacations, and increased life satisfaction at age 75. Men who had poor childhood relationships with their mothers were much more likely to develop dementia when old. He found six predictors of health and happiness: 1) physical activity, 2) absence of alcohol abuse and smoking, 3) having mature mechanisms to cope with life's ups and downs, 4) enjoying a healthy weight and a stable marriage, 5) for the inner-city men, education was an additional factor, with more education they were likely to stop smoking, eat sensibly, and use alcohol in moderation. Finally, when the study began, nobody cared about empathy or close relationships, but the key to happiness, positive and healthy aging is "*relationships, relationships*, and*relationships*."

Robert Waldinger, the current project director concludes that "the surprising finding is that our relationships and how happy we are in our relationships has a powerful influence on our health," and "the people who were the most satisfied in their relationships at age 50 were the healthiest at age 80" (Waldinger & Schultz, 2023). Those who are healthy, wealthy, and live long are those who are satisfied with their relationship with family, friends, and community.

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The opposite was the case for excessive smoking, drinking, and experiencing loneliness. They note that "when we gathered together everything, we knew about them about at age 50, it wasn't their middle-age cholesterol levels that predicted how they were going to grow old. It was how satisfied they were in their relationships. The people who were the most satisfied with their relationships at age 50 were the healthiest at age 80. Good relationships don't just protect our bodies; they protect our brains" (Waldinger & Schultz, 2023). The research also debunked the idea that people's personalities "set like plaster" and cannot be changed. Those who kept warm relationships live longer and happier, and the loners often died earlier. They conclude "loneliness kills," and the loners had a shorter lifespan of about 10 years (Waldinger & Schultz, 2023). It had a powerful effect similar to smoking or alcoholism.

In the longitudinal study of 678 Catholic sisters, aged 75-104, from 1986 of 678, Snowdon (2012) analyzed the factor that allowed them to live long, healthy, and productive lives. They found six factors that contributed to their positive ageing: 1) building linguistic ability in childhood may protect against Alzheimer's, 2) ordinary foods promote longevity and healthy brain function, 3) avoiding depression is key to avoiding Alzheimer's, 4) the role of exercise programs, 5) the attitude, faith, and community can add years to our lives, and 6) the service of others.

This may explain why Nordic countries have had the highest scores on the World Happiness Report for the past 10 years. In 2023, Finland had the highest score, followed by Denmark, Sweden is ranked 6th and Norway is ranked 7th. Helgesen and Kim (2002) have found, in a national survey in Nordic countries (i.e., Finland, Denmark, and Sweden) and East Asia (i.e., Japan, Korea and China), Nordic respondents support vibrant communities and close family relations, support for individual rights and freedom of expression, and generalized trust. They reject excessive individualism, competition, and inequality in income and wealth. They had a much higher life satisfaction than their East Asian counterpart which focused on economic development. These results point to the importance of questioning the basic assumption about the secrets to happiness, health, and long life.

Empirical study: Can money buy happiness?

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To answer the question on whether money buys happiness, we convinced the SBS TV producers to collect data to find out what makes people happy in Korea. A total of 318 adolescents, adults and elderly living in low, middle, and high-income neighborhoods were recruited and interviewed by the staff of SBS. The mean age of adolescents is 17, 36 for adults, and 73 for the elderly. They completed a 15-item happiness scale developed by Kim and Park (2005) evaluating how happy they are in various aspects of their lives: personal achievement, family, social relationship, and health. Resiliency of efficacy developed by Bandura (1995), emotional support developed by the authors, and background and demographic information were obtained. See Appendix 1 for the list of self-efficacy, social support, and happiness scales.

Multiple regression analysis examined the predictors of happiness among adolescents, adults, and elderly. (Figure 54). For adolescents, emotional support from their family was the most important predictor of happiness explaining 53.2 % of the variance, followed by academic grade explaining 3.7%, and resilience of efficacy explaining 3.3%. For adults, emotional support received from their family was the most important predictor of happiness explaining 33.8 % of the variance, followed resilience of efficacy explaining 9.7%, education explaining 3.2%, and SES explaining 1.5%. For the elderly, resilience of efficacy was most important factor explaining 41.6% of the variance, followed by socio-economic status explaining 16.1 %, emotional support explaining 5.2%, and income explaining 1.5%.

Figure 54: Factor explaining happiness

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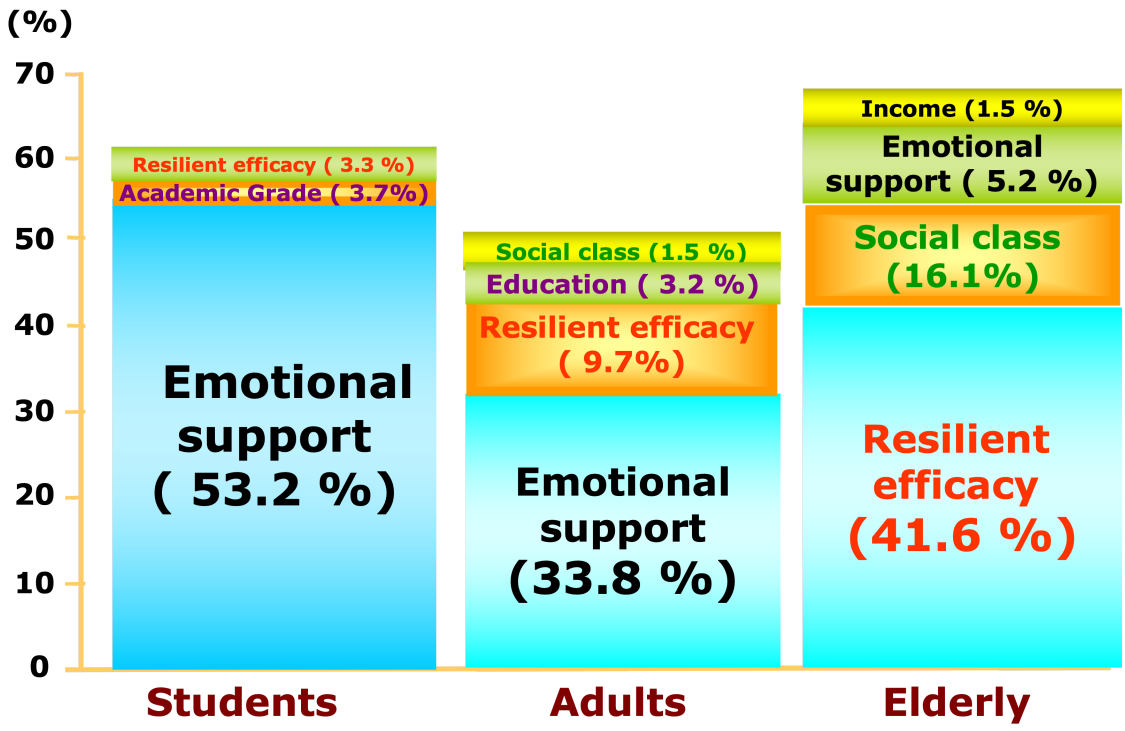

Figure 54 provides the results of the path analysis on happiness among adolescents. (See Figure 55). The lines and arrows show the path of the prediction, and the numbers show the strength of the prediction. For adolescents, emotional support, resiliency of efficacy and academic grades have direct positive effect on happiness. Grade level has a negative direct effect on resiliency of efficacy, meaning younger students have lower resiliency of efficacy. Socio-economic status has direct and positive effect on resiliency of efficacy and emotional support received.

Figure 55: Factors influencing happiness, students

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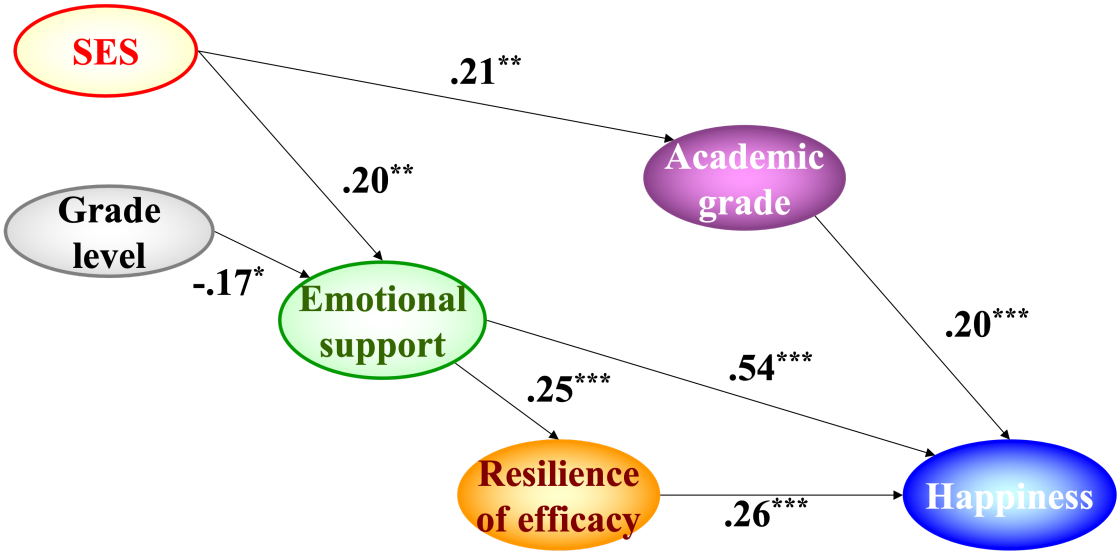
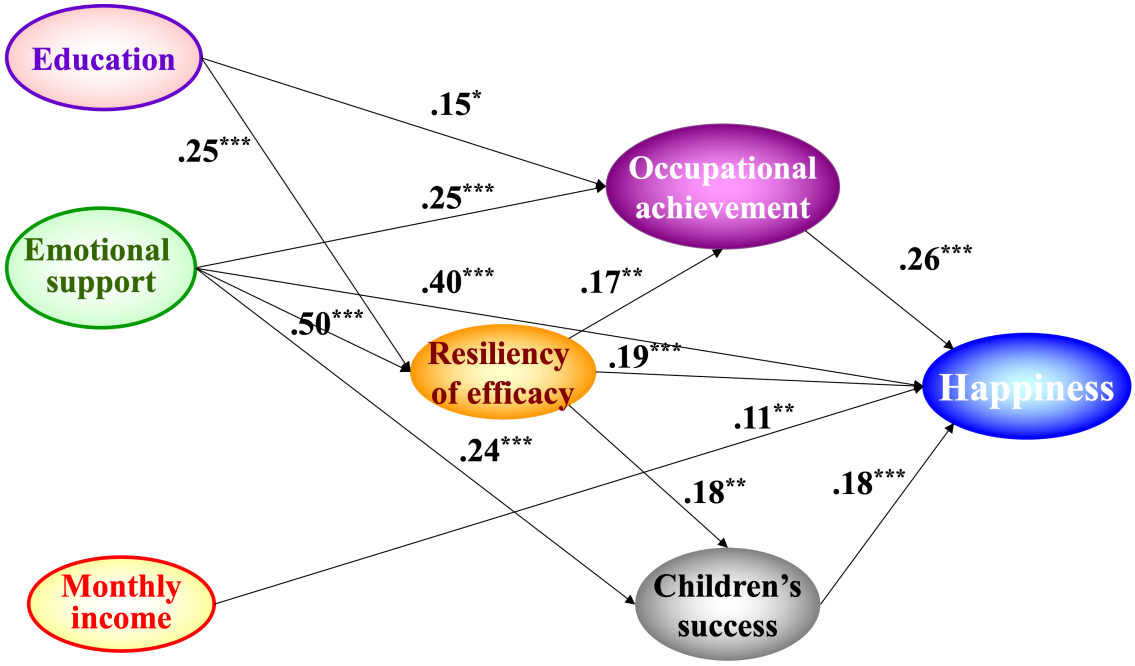


For adults, resiliency of efficacy has a direct positive effect on happiness (See Figure 56). Alternatively, occupational achievement and children's success have direct positive effects on happiness. Emotional support, monthly income, and occupational success have direct positive effects on happiness and children's success. Education and emotional support have a direct positive effect on resiliency of efficacy.

Figure 56: Factors influencing happiness, adults



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These results indicate that resiliency of efficacy and emotional support are important predictors of happiness for both adolescents and adults across different income groups and socio-economic status. For adolescents, academic achievement is an important predictor of happiness and for adults, occupational achievement and children's success are important predictors of happiness. For adults, income is a direct positive predictor of happiness and for adolescents, the socio-economic status is an indirect predictor of happiness mediated by academic achievement and emotional support.

Results indicate that resiliency of efficacy is an important predictor of happiness across the three generations, especially for the elderly. Emotional support is an important predictor of happiness across the three generations, especially for adolescents and adults. Socio-economic status is important for the adults and elderly and income is important for the elderly. Money becomes important when the elderly are retired, and they need to rely on their life savings or their children for financial support. These results indicate that money can influence somewhat, but it cannot buy happiness. It explains only 1.5% of the variance for the elderly and has an indirect influence through socio-economic status for adults (1.5%) and the elderly (16.1%). Overall, emotional support and resiliency of efficacy are the most important predictors of happiness explaining nearly 50% of the variance for the three generations.

Empirical studies of life-satisfaction

Kim and Park (2006) and Park and Kim (2014) reviewed over 20 years of empirical research in Korea examining factors that influence the quality of life and subjective well-being and found several distinctive patterns. First, in the self-report qualitative survey, we found that people believe that income was important as the basic resource for improving the quality of life, followed by good interpersonal relationships, emotional support, self-efficacy and self-regulation, academic achievement, and physical health. In a qualitative study of factors that improve the quality of life, a total of 3,406 participants (1,331 adolescents and their mother and father=2,075) completed an open-ended questionnaire asking about the factors that can improve their quality of life. They similarly report financial factors (23%), followed by self-regulation (22%) as the most important factors, then by leisure activities (14.5%), harmonious family (13.6%), good

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interpersonal relationships (8.1%), health (7.0%) and academic achievement (6.6%). These results confirm the previous studies in which people believe that income is the most important factor that increase their quality of life and life-satisfaction.

In a quantitative study of the mechanism and factors that predict life satisfaction, however, we obtained a different pattern of results. Survey questionnaire were collected from 825 adolescents and 1,650 parents of the adolescents, we obtained a different pattern of results where income and SES were not important predictors of life satisfaction. For adults, social support received from a spouse was the most important predictor of satisfaction in family life. Self-efficacy and social support had a direct positive effect on life satisfaction and social support also had an indirect effect through self-efficacy. Similar results were found for parents of elementary school children and parents of high school children. For students, self-efficacy, maintaining harmonious interpersonal relationships and emotional support are very important in improving their quality of life. These studies point to the limitations of the open-ended self-report measures and the importance of understanding the mechanism and factors that predict life-satisfaction

A similar pattern was obtained for elementary school students (Park & Kim, 2014). Self-efficacy and the social support received from their parents are important predictors of life satisfaction. In the study of life satisfaction among elementary, middle, and high school students, self-efficacy, social support received from parents are the most important, followed by social support received from friends and teachers. In a study of allergy and asthma patients, social support received from doctors and nurses are important predictors of quality of life and physical and mental health. For studies of stress and depression in Korea and Japan, self-efficacy and social support helped individuals to manage and overcome stress and depression.

The series of empirical results reviewed by Kim and Park (2006) and Park and Kim (2014) point to the importance of understanding the mechanism and factors predicting life-satisfaction. People with high self-efficacy have higher life-satisfaction and subjective well-being. People who believe that they have control over their life through personal, proxy and collective control and receive social support from significant others are more likely to feel satisfied and happy.

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XI. The New Generation: The Gen Z

The Gen Zs are the most educated, globally connected and environmentally conscious generation. They grew up during the digital revolution and the use of PC, smartphone and social media have become a central part of their lives. Beyond their immediate friends and family, they interact with the online community members to obtain information, receive feedback, develop new skills, and learn about hobbies and career opportunities. They learn and share information about stock investment and real estate market through the online community and social media. They spend more time online than consuming traditional media and obtain specialized information from various online channels and influencers, who provide detailed information about products, services and skills that fits their values and lifestyle.

With the information explosion through the online channels, Gen Zs focus on self-development and developing their personal interests, knowledge, and skills that are necessary to be creative, innovative, and entrepreneurial. Rather than being consumption-driven, following traditional trends of their parents, and investing in owning a house or car, they focus on their individuality and the unique experience they can obtain by developing hobbies, traveling, engaging, and participating in social and environmental issues.

In 2021, Deloitte conducted a global online survey collecting data from 8,273 Gen Zs from 45 countries around the world, including Korea. A total of 42% believe that the economy and the social and political condition will worsen in the coming year. Gen Zs are concerned about the environment, social inequality, and discrimination. They are not passive, indifferent or selfish, as reported in the traditional media. They are using their purchasing power to point out problems and boycott negative behaviors among businesses and governments. In the case of social inequality, 66% of the Gen Zs report that wealth and income are unequal. The percentage is higher in Korea, with 74% agreeing in Korea.

Compared to their grandparents and parents, the Gen Zs are more willing to commit their views into action by choosing companies and products that are consistent with their values (e.g., environmental concerns, protection of personal data, and social and

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political issues). They are taking action to drive change: 52% report donating to charities, 49% reported making career choices and working for companies/organizations that reflect their personal ethics, 40% posted an online comment on the news article that they read, 40% volunteered for community, charity or non-profit organization, 40% created social media content (on environmental, human rights, or social/political topics), 36% raised money for charity, 31% attended public meetings on local affairs/politics, and 30% participated in demonstrations/protests.

Deloitte (2021) concludes that digital platforms are fundamentally changing the highly educated, mobile, and socially connected Gen Zs. They are looking into the future to tackle climate change, social inequality and discrimination with optimism and high efficacy. They do not simply wait for changes, but actively participate and innovate. They want to work in organizations with "purpose beyond profit" and pursue values and ethics. This is a positive understanding of Gen Zs, which contrasts with negative reports in the traditional media. Deloitte (2021) concludes that Gen Zs want a healthier planet, a fairer, just system and a kinder humanity. They use online platforms and social media to share their views, influence global issues from a distance, and to question established authority.

Gen Zs in Korea

The phenomenal economic growth in Korea has been spurred by educational achievements. The economic miracle in Korea is closely tied to the educational aspiration and investment made by adolescents and parents. By 1983, Korea had the highest percentage of adolescents wishing to obtain a university degree and the number of parents who wanted their children to at least graduate from university (Park & Kim, 2004). Currently, the literacy rate is 99%, high school graduation rate is 96% and university enrollment rate is 72%.

In international studies of academic achievement, Korean students are ranked at the top in knowledge and performance. In international comparisons of math and science achievement, Koreans students are the top achievers (National Center for Educational Statistics, 2019).[19] In the 39-nation study of Grade 4 and 8 students, Korean Grade 4

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students are ranked 3rd in mathematics and 2nd in science.[20] For Grade 8 students, they came in 3rd in mathematics and 4th in science. In the 31-nation OECD study of Grade 9 students in 2018, Korean students are ranked in the top tier: 2nd to 7th in reading, 1st to 4th in mathematics, and 3rd to 5th in science.

According to the traditional Korean media, Gen Zs are individualistic, assertive, and viewed as selfish.[21] They raise their voice to express their opinion and pursue personal happiness rather than sacrificing for the family or group. They are highly mobile and prefer to receive instant information and results. They are active in self-expression using social media, boasting in their personal blog or Facebook and focused on self-satisfaction. They have easy access to information, and they can actively explore their interests in various fields, prepare for employment, and share information and receive feedback.

By forming and activating an online community, they share information and build friendships by belonging to several online communities that fit their interests. They value experience over possession by participating in one-day classes and going on a weekend holiday. The virtual world has become as important as the physical world. Online friends have become an important source of social support in obtaining information about social trends, finding a job, and developing skills that are necessary to succeed. They have greater diversity of relationships and career choices that they pursue. The social support received from the online community is becoming important for Gen Zs.

Figure 57: Generation and incentive structure

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Characteristic	Colonial Period: Age ~85	Industrial Age: Age ~55	Digital Age: Age ~25
Nature	Harmony	Exploitation	Sustainability
Location	Rural	Urban	Cyber
Life space	Village	Apartment	Online
Group	Extended family	Nuclear family	Community
Focus	Ancestor	Children	Influencer
Orientation	Conservative	Progressive	Innovative
Relationship	Cooperation	Competition	Networking
Outlook	Formalism	Specialization	Experiential
Gender	Discrimination	Equality	Individuality
Knowledge	Wisdom	Professionalism	Creativity
Capability	Compliance	Discipline	Self-development

The incentive structure in Korea has changed. (See Figure 57). In Confucian culture, the basic unit for analysis is the relationship in the extended family, with grandparents symbolizing the past and children representing the future. Traditionally, the best way to move up the socioeconomic ladder was to pass the national exam and attain a government position, and they were given and from which they can obtain stable income for three generations. Industrialization required moving to cities, focusing on economic development, forming a nuclear family, and living in an apartment complex. The father worked long hours to earn a high income. The mother took care of the husband, children, and the household. Living in an urban apartment complex, the incentive structure has changed from conservatism to progressivism, from formalism to pragmatism, from past-oriented to future-oriented, from cooperation to competition, and from parental wisdom to specialized knowledge. The modern entrance exam system fostered fierce competition, so parents had to work hard and make sacrifices for their children, and their children had to study hard and achieve academic success to get a job in a leading company.

Korean economy, which is export-driven and manufacturing-based, faces fierce competition from China, India, and Southeast Asia. The incentive structure for Korean

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companies have changed and they moved their manufacturing base to China, Southeast Asia, India, Eastern Europe, and the rural United States. The Korean economy is experiencing economic stagnation with slowing growth, fewer manufacturing jobs, rising unemployment, and rising cost of living. Even in the USA, global IT companies (e.g., Amazon, Apple, Facebook, Google, Netflix, and Tesla) have software engineers with high income, while the job opportunities and income for the middle class are declining.

Due to the high cost of living, housing, and low income, the Gen Zs are living with their parents beyond the age of 30 or alone, but they can expand their social network through online channels. Instead of working for a large company and making sacrifices for unattainable financial security, they focus on experiences that can make them happy by engaging in personally meaningful activities, developing their interests and skills, and finding a job that is aligned with their personal values. As the most educated generation, they reject the pre-determined lifestyles of their parents' generation, which lacks meaning and purpose for them.

In Korea, morality and ethics change depending on situations and relationship (Kim, 1995). As such generalized trust is low and institutions do not function well compared to Scandinavian countries (Kim et al., 2002, 2006). Gen Zs have internalized ethical standards, and they are acting beyond the situations and relationships. One example is the boycotting of Uniqlo, a popular Japanese fast retailing company.[22] Three years ago, Uniqlo's Chief Financial Officer mocked wartime forced laborers and stated that "the boycott will not last long in Korea." Uniqlo became the target of the boycott among Gen Zs which had immediate impact. Sales plummeted and 40 stores closed last year, and they have not recovered.

To empirically test the changing trends among Gen Zs, two studies have been conducted. (See Appendix 1). The first study collected survey questionnaires from 353 Gen Zs attending a Korean university (J. Kim, 2024). The results indicate that Gen Zs realize that the incentive structure has changed, and they can't live like their parents, and they do not want to sacrifice happiness for success. They are pursuing both success and happiness by learning new knowledge and skills obtained from online communities and influencers. They are breaking away from traditional ingroup mentality ("arms bend inward") by developing the necessary English and social skills. They are engaging in

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online communities and meeting people with similar interests, ethics, and life goals. For Gen Zs, it is not to reject the relationship that is important in Korean culture, but to expand the relationship through the online community ("stretch your arms outward"). The results provide a window to understanding mindset, perspective, and lifestyle that the older generations have difficulty accepting.

First, gender differences that were found in previous studies have disappeared (Park & Kim, 2014; 2015; 2016). Second, preferences for employment at large corporations and government institutions that were overwhelmingly high in the past, are now diversifying. Although there is still a preference for employment in large corporations and government institutions, some are considering working for small and mid-sized companies, service industries, start-ups, NGOs, and freelancers.

Third, Gen Zs realize the limitations of traditional standardized education in which they have to figure out the correct answer created by the previous generation, even when some of them are biased and wrong. They reject outdated education systems, and they are interested in learning, engaging, and participating in creative and innovative activities by putting human beings at the center. They want to use digital technologies to benefit humankind rather than becoming a slave to them. They are positive and confident with high self, relational, social, and collective efficacy to create positive change to deal with climate change, to challenge populistic ideologies that promote racism, sexism, and homophobia and to promote a genuine dialogue.

Fourth, Gen Zs face many difficulties and challenges, such as a competitive job market, and rising cost of living, but they have a high sense of self-efficacy. In previous studies, self-regulatory efficacy and relational efficacy were the highest (Park & Kim, 2004, 2013, 2014), but in a recent study with Gen Zs, social efficacy is the highest (Kim & Kim, 2022). It is positively correlated with social support and happiness. Although the traditional media reported that Gen Zs are self-centered and assertive, in the recent study, social efficacy and relational efficacy were high, and self-assertive efficacy had the lowest score.

Even if they live in the same ecology, culture, and family, the three generations can view and experience the sociocultural reality differently, even though the core cultural

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values are maintained and shared. The results indicate differences between adolescents and their parents in terms of attitudes, values, beliefs, and behavior.

The results of the path analysis from the Gen Zs generation provide similar results as the previous studies. (See Figure 58). Relational efficacy has direct positive effect on happiness and trust. Trust has a direct positive effect on happiness. The social support received from friends has a direct positive effect on relational efficacy, trust, and happiness. Positivity has a direct positive effect on social support received from friends, academic grade, relational efficacy, and happiness. Academic grade has a direct positive effect on relational efficacy. The results point to the importance of relational efficacy, social support, trust, and positivity have on happiness.

Figure 58: Factors influencing trust and happiness

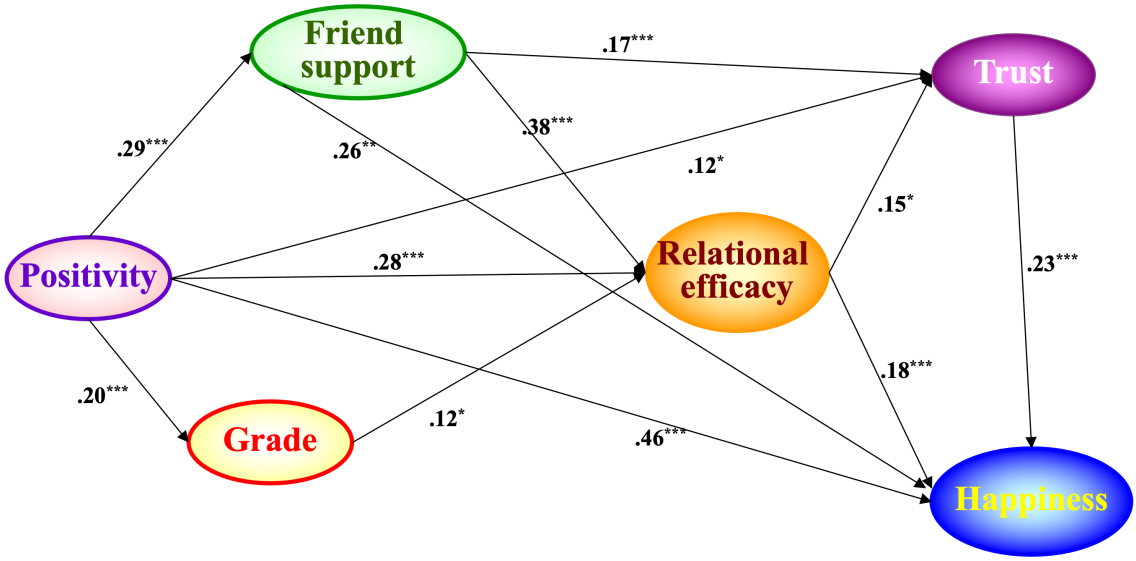

Figure 59 provides the result with happiness and work values using structural equation modelling. (See Figure 59). Since students are not currently working, they are asked about the work values that will be important for them in the future. The results include three work values consisting of Achievement, Security and Work-Life Balance. The first two subscales are developed in previous studies and the last scale is developed through the interviews of over 1,000 employees and executives working for a Korean company (Kim & Kim, 2021). Happiness is measured by how happy they are in Self Development and for Job Prospect. Self-efficacy is measured by Self-Regulation, Assertiveness, Relational and Social efficacy. In addition to social support from parents

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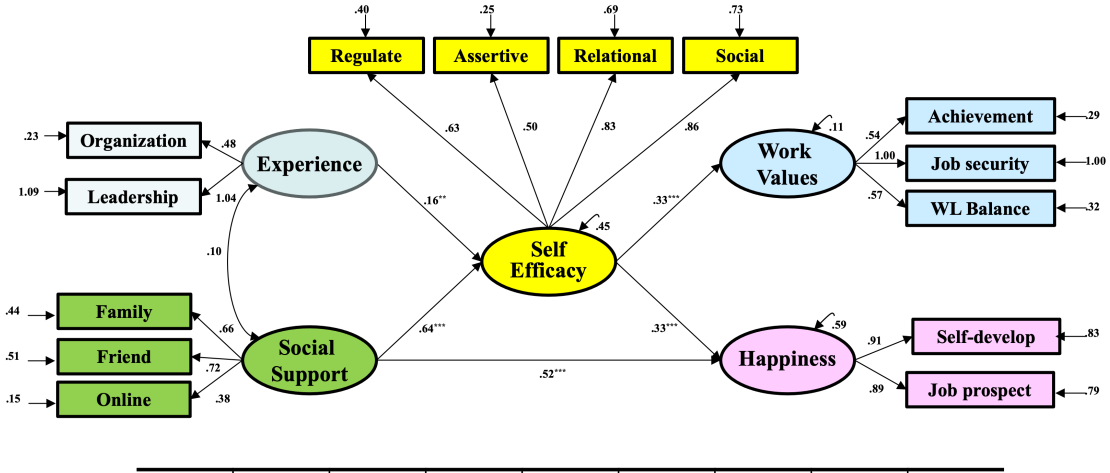
and friends, online social support is measured by the information they receive from the online community related to internship, interviewing, and job opportunities has been included. The study also obtained students' participation in organizations and the number of leadership roles that they had in the organization.

The results show good Goodness-of-Fit for the overall model, the scales, and the sub-scales (Kim, 2024). The results indicate that efficacy beliefs predict work values and happiness. Social support and Experience in organizations have direct positive influence on self-efficacy. The important aspect of the result is that online social support has a similar positive effect of self-efficacy as the social support received from friends and family.

Figure 59: Factors influencing happiness and work values: Self-efficacy as the mediator variable



X^2	Df	X^2/df	Sig.	GFI	AGFI	RMR	CFI	RMSEA
201.529	71	2.838	p<.001	.923	.886	.046	.927	.072

Adapted from J. Km (2024)

In the second study, a survey questionnaire was completed by 303 Gen Zs attending a Korean university (Kim, 2024). The Leadership efficacy scale was developed from the interviews of over 1,000 employees and executives working for a Korean company measuring the eight domains: Analytical, Initiative, Professionalism, Creativity, Empowerment, Ethical, Communication, and Teamwork. (See Appendix 1). For work values, in addition to Achievement and Security, Trust and Enjoy Life are added. Traditional leadership style of Directive, Bureaucratic, and Transactional leadership style

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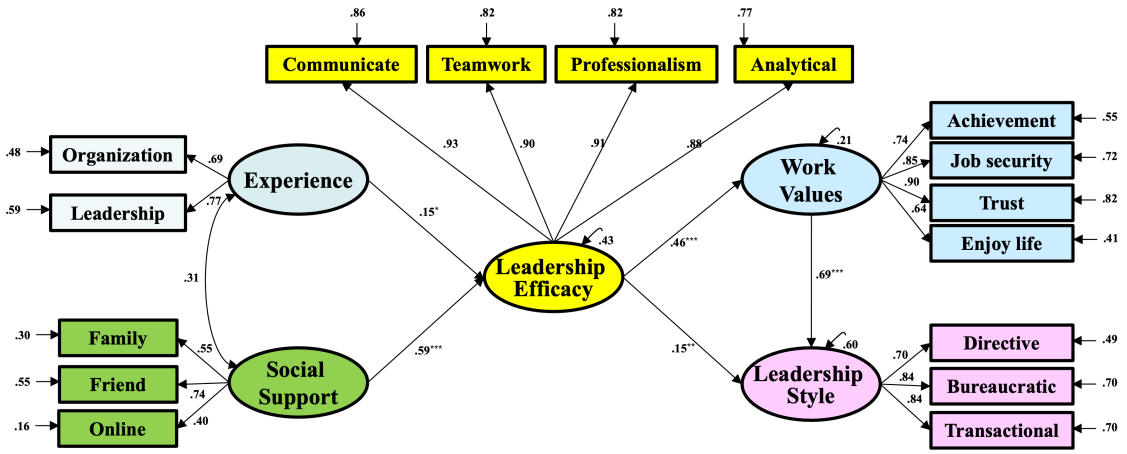
have been developed by the present authors (Kim & Kim, 2021). Four-item scales for the future-oriented leadership style developed by DiFabio and Peiró (2018) have been included: Ethical, Empowerment, Servant, and Sustainable leadership. The present authors added 2 more items to the four leadership styles to improve reliability and stability. Since the students are not currently working, they are asked about their preferred working style when they work in an organization/team.

Leadership efficacy (Communication, Teamwork, Professionalism and Analytical) has a direct and positive effect on the three traditional leadership styles (i.e., Directive, Bureaucratic, and Transactional Leadership), and the work values (Achievement, Security, Trust, and Enjoy Life). Social support received from family, friends, online and experiences in organizations and leadership positions have a direct and positive influence on leadership efficacy. (See Figure 60).

Figure 60: Work values, leadership efficacy, and traditional leadership style



Leadership efficacy (Communication, Teamwork, Ethical, and Empowerment) has a direct and positive impact on the four future-oriented leadership styles (Sustainable, Servant, Mindful, and Ethical leadership), and work values (Achievement, Security, Trust, and Enjoy Life). Similarly, the social support received from family, friends, online platforms, and the experience in organizations and leadership positions have a direct and positive influence on leadership efficacy. (See Figure 61).

Figure 61: Work values, leadership efficacy, and future-oriented leadership style

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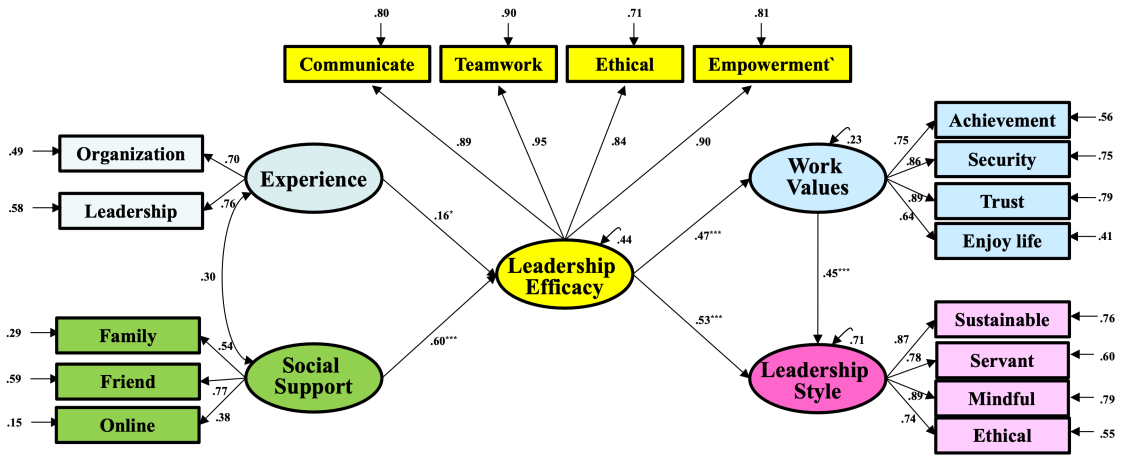

These results indicate that online communities play an important role in increasing the self and leadership efficacy, similar to the role that their family and friends. Secondly, the work values of Achievement, Security, and the Work-Life Balance have emerged to be important values in the first study. In the second study, Trust in the workplace had the highest mean. They also want to experience and Enjoy Life, although it had the lowest mean.

The traditional media has focused on reporting the negative views of Gen Zs being self-centered and hedonistic. Similar to Deloitte's (2021) reports, current studies confirm the positive aspects of Gen Z. Gen Zs want to work in an organization with a purpose and that they can trust. They do not want to be narrowly focused on achievement and hard work, and they want to experience and enjoy life as well. These results indicate that even if they face a harsh economic condition, they want to be happy since they can enjoy various experiences and "capture the moment" by taking many photos and share them on social media. They are not narrowly focused on their family and relational network which valued "arms bending inward," but they are willing to explore ideas, experiences, and the world through "arms bending outward."

They may be less stressed and depressed than the older generations trying to be the best, achieve the most, become rich, and purchase a house, a car and get married. As Lahou (2017) points out that there are affordances in their current ecology and incentive structure that are different from their parents. (See Figure 57). Rather being angry and frustrated by not having the economic security and comforts that their parents needed to be satisfied in life, they focus on experiences, "simple pleasures," and by being with

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people that they enjoy meeting, communicating, and sharing. At the same time, they are demanding that the leaders solve the existing climate crisis, social inequality and discrimination, and problems in ethics and governance. They want to work for a company with a purpose whose values are aligned to their own and demand transparency, integrity, and accountability.

Gen Zs have been depicted as selfish, materialistic, and with no plans for the future by the traditional media, employers, and the older generation. This represents how the current generation views Gen Zs as needing to pursue success, achievement, wealth, and status. Gen Zs are the most educated and digitally connected generation, and they have a different assumption and outlook. They are clearly stating that they cannot continue "the business as usual" and the consumption culture that is not healthy for the self, relationship, society and environment. Although they may not have clearly conceptualized their thoughts and expressed them in a scholarly way to the media, the results state a clear message - that they want change. Traditional research is not capturing the thoughts and aspirations of Gen Zs since the existing theories and concepts have been created by the older generation with outdated assumptions.

The established disciplines and the older generation have the power to define and thus they have the power to control. If they are correct by accepting the theories of Adam Smith and Milton Friedman, we should be living in a wonderful world of profit and high income where everyone is happy and live in a functional society. However, this is just a fairy tale for Gen Zs. Currently, data has been collected using the scales developed by Kim and Kim (2021) with different ethnic groups in Indonesia, Malaysia, and India to find out patterns that influence happiness, subjective well-being, stress, depression, work values, and leadership style.

XII. Conclusion

When we enter the court of law, we are asked to swear to "tell the truth, the whole truth, and nothing but the truth." However, does anyone know "the truth, the whole truth, and nothing but the truth"? They can only tell what they know. Is what we know "the truth, the whole truth, and nothing but the truth?" Is rationality the best way to

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know the truth? How do we know that rationality can lead us to the truth, or we can rationalize our decisions to shape and distort knowledge to fit our belief, values, and bias?

Socrates teaches us to raise basic questions and to seek knowledge through critical analysis and open discussion. Confucius asks us to understand the nature of knowledge through self-cultivation and open dialogue. Since all knowledge is reconstructed through our senses or through cultures, it is important to examine the basic assumption behind the ideas that we have created through religion, philosophy and science and socital institutions that have been established based on the knowledge.

Bandura (2016) documents how people do not behave rationally or ethically in the volume entitled, *Moral Disengagement: How People Do Harm and Live with Themselves.* He provides the mechanism and empirical results by which people engage in immoral and unethical behavior, and at the same time feel good about themselves through moral disengagement. Mechanistic and biological theories that deny human consciousness, meaning, intention, and social responsibility provide the basis for moral disengagement. To deny humans the agency, consciousness, meaning, intention, and responsibility is to deny the very essence of what it means to be human. We differentiate human rights from animal rights based on these qualities - intention and responsibility. The mechanistic and biological theories are clear examples of dehumanization, and these theories have been used to justify slavery, racism, sexism, discrimination, violence, aggression, war, genocide and psychiatric incarceration and treatment (e.g., frontal lobotomy, straight-jacket and electric shock therapy), (Chorover, 1980).

Beyond the moral and ethical dimensions, is it scientifically valid to treat human beings without meaning, consciousness, intention, and agency? Can we use objectivity and treat human beings as an object of experiments and surveys to obtain "pure knowledge" and deny them their subjectivity and humanity? Can a researcher eliminate one's subjectivity, bias, and culture to conduct scientific research as a value-free enterprise? The answer is clearly self-evident. Scientific understanding of human psychology without human agency, consciousness, meaning, and culture are invalid since the basic assumption on

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which the current mechanistic and biological theories are erroneous and have been refuted.

We have come full circle to the question of the age-old debates in philosophy, religion, and science in defining the nature of the human mind, self, and culture. Bandura (2016, 2023) is critical of theories in psychology, social sciences, and applied sciences that eliminate the most essential aspect of human beings - human consciousness, agency, and moral responsibility. Darwinian Theory focuses on ecological press, variations in morphology, natural selection, and survival of the fittest to explain biological evolution. He extended his theory to include human beings as being driven by instincts and the inheritable traits that determine their psychological make-up. These ideas have been adopted by Sigmund Freud, Behaviorists (B. F. Skinner, Clark Hull, and Kenneth Spence) and sociobiologists and theorists in social and applied sciences. The basic assumption of viewing human beings as animals, driven by natural instincts, and determined by traits has been refuted, but they are accepted in society and taught in courses around the world. Similarly, the concept that race influences people's personality, IQ, morality, and behavior persists even though they have been discredited and refuted. People are consciousness agents, they can selectively attend to the information to manage their mindset and goals; it is not always based on rationality (Bandura, 2016; Kahneman & Deaton, 2010). People selectively choose information that fits their preconceptions and associate with others who support their belief system, including Albert Einstein who chose to believe that "God does not play dice with the world."

Is Adam Smith correct when he states that individuals who promote their own self-interests end up promoting social good through the law of supply and demand? Is Milton Friedman correct in stating that the purpose of business and the social responsibility of companies is profit? Are these theories justifying greed to maximize one's profit regardless of the consequence it causes to others, society, and the environment? How can these theories explain the current climate crisis, social inequality, discrimination, and problems in governance and ethics, or do they just ignore them as false narratives? How is the selfishness of individuals and companies promoting social good? The mechanical law of supply and demand does not directly address the issues of ecological balance, ethics, social equality, fairness, altruism, and human dignity. We need an alternative model that puts human beings and agency at the center to address

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these challenges. We need to engage people and allow the co-creation of ideas and innovations that can solve the problems facing the global community.

Throughout human history, human agency allowed us to work together to solve our subsistence needs through co-creativity and innovation. With consciousness, forethought and self-reflectiveness, human beings flourished by overcoming our basic instincts and learning to be creative and innovative in solving the basic biological needs and to communicate and support one another. With the development and refinement of tools, controlling the power of fire, developing communication, and storing information outside our body, human beings could survive harsh environments and populate all parts of the world.

Through human consciousness and agency, the software of the mind developed, and the creative explosion emerged when we learned to store information outside of our body through symbols, art, music, and ornaments. Through technology and education, our minds are actively engaged and connected to form the dynamic social and neurobiological networks. As we migrated to different parts of the world encountering diverse ecology, new life forms, and meeting people with different knowledge and way of life, these experiences and resources accelerated co-creativity, collective efficacy, and cultural variations.

Around 10,00 years ago domestication, farming, pottery making, and the creation of bronze transformed how we think, live, and relate to others. With agricultural efficiency, irrigation, and storage, enough food could be produced from the land to support a sedentary lifestyle for many people. These innovations allowed religious, legal, and political institutions to emerge which allowed people who lived in close proximity.

With the surplus of food and commerce, trade became possible. Marco Polo traveled through the Silk Road, and Europeans were able to connect with the Middle East, Central Asia, India, and China. Material and technological knowledge from Asia and the Middle East transformed Europe, and the absolute power of the Catholic Church to define and control became challenged with the emergence of the Renaissance and the Age of Reason. With the separation of the Church and state, sciences flourished. The knowledge of the natural world through the development of physics, chemistry, and biology helped to fuel the First, Second, and Third Industrial Revolutions. From the

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latter part of the 20th century, the advances in Information Technology allowed us to enter the Fourth Industrial Revolution through the developments in AI, Big Data, Blockchain, Internet of Things, robotics, autonomous driving, quantum computing, and biotechnology.

With the desire to know, understand, and explain our reality through the sciences, the separation of the knower from the known and objectivity were emphasized. However, unless there is the knower, how can reality be known and organize what we know as knowledge. Unless there is the "I," how can the "Me," and the physical world be known? Unless I step outside of my culture, how can I discover and understand my own culture?

First, we need to examine the assumptions that we can objectively understand and explain the natural and human world. By accepting objectivity in science, we are denying how science is conducted. Secondly, viewing human beings as an object of research is to deny the very essence of humanity. Without understanding the software of the mind that includes a theory of consciousness, agency, rationality, empathy, relationships, social responsibility, and culture, we are denying the very essence of what it means to be human.

Without the inclusion of human consciousness, agency, and purpose, how could Socrates ask to "know thyself"? To this question, how could Descartes answer *je pense, donc je suis* ("I think, therefore I am")? How could Newton discover the Law of Gravitational Attraction after seeing an apple fall to the ground? How could Einstein believe that "God shall not play dice with the world" and discover the Theory of Relativity? What would have been the biological instinct that drove Charles Darwin to travel around the world to discover his Theory of Evolution? If sex and violence are the basic unconscious motivation, how could Sigmund Freud explain his own behavior in searching for the basis of human existence?

The developments of religion, philosophy, and science reflect the agentic desire to understand, predict, and manage the natural, human, and spiritual world. Polytheistic religions developed in hunting and gathering societies and monotheistic religions emerged in sedentary agricultural communities. They provide metaphysical explanations of life and death, human existence, and the nature of morality and ethics. Philosophy

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emerged to emphasize the naturalistic and human-centered understanding of reality using observation and logic. Science emerged to test, verify, or falsify existing ideas and formulate theories, concepts, and methods that provide the best approximation of our understanding. They reflect the software of the mind, consciousness, and agency.

In the natural world, scientists can test their theories using rigorous scientific methods to verify, falsify, and refine existing theories and concepts. In psychology, it is possible to translate philosophical ideas into psychological concepts and test them using scientific methods. It is similarly possible to translate religious beliefs into psychological concepts and test them, such as the research on mindfulness (Kim & Kim, 2023). For example, if people believe in God, then they are more likely to go to church than people who do not believe in God. Thus, we can scientifically verify that people's beliefs influence their behavior. When Friedrich Nietzsche declared: *Gott ist tot* ("God is Dead"), we cannot scientifically verify or falsify the existence of God. What we do know is that for atheists God does not exist in their mind and life. Similarly, we can investigate psychological and behavioral phenomena neurobiologically using fMRI (Fox et al., 2014; Hüther, 2016; Siegal, 2010).

Each perspective provides different insights. However, when one studies another culture, they bring their own mindset, bias, and belief system when interpreting other cultures. This has been done when Western psychologists study East Asian cultures such as Japan, Korea, and China using Western theories that focuses on individualism. For example, Markus and Kitayama (1994) claim that East Asians have an interdependent view of the self and lack a clear conception of a distinct self. Does this mean that Japanese, Korean, and Chinese are confused about their self-identity, and they do not know who they are beyond their relationship with their family and close friends? This is an example of an absurd and ethnocentric bias, and they do not provide any conclusive scientific data to support their claim.

In East Asia, relationships are the basic unit of analysis and using the incorrect concept to define a relationship in terms dependence, independence, or interdependence is the erroneous starting point. In Asia, the self is discovered in and through relationships and extended across space and time. The configuration of the self is unique based on the extended selves that have been developed and that are connected and maintained

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through the "I." The self develops in the relationship. For example, when my mother takes care of me when I am young, she becomes my friend when I become an adult, and I take care of her when she is old. Both the relationship and the conception of the self changes. The self and the relationship change across time and space, and "I" provides coherence and integrates these changes. (See Figure 41).

To use an analogy, the individualistic conception of self is similar to the Newtonian particle theory of light by viewing individuals as particles. The Relational self is similar to Einstein's Theory of Relativity where self and relationship can change through interaction. The probabilistic Quantum Theory can explain Hindu conception of self as co-existing among numerous self-identities in this life and thousands of reincarnated lives before, and between the self and the None-self (Sinha & Tripathi, 1994).

The basic misunderstanding and misrepresentation are pervasive among psychologists and academics in the USA attempting to explain happiness, health, and long life by claiming that their findings are universal, even though they only sampled around 2% of the population and their predictive validity is very low. The Harvard Study of Adult Development is a clear example of how defective assumptions have driven theories, concept, method, and data collection in the USA. Based on psychological and psychiatric theories, American researchers believed that genetics, intelligence, personality, income, education, and success will be the most important predictors of happiness, health, and longevity. However, Valliant (2015) and Waldinger and Shulz (2023) are surprised to find that maintaining close relationships is the best predictor of happiness, health, and longevity. It is a shocking discovery for Americans, and it took researchers nearly 80 years to realize that their assumptions about human psychology are erroneous.

If you ask East Asians, they will answer that they value close relationships, and it is the basis of the self, society, and culture. They agree that close relationships are the basis of happiness, but they are similar to Americans in pursuing success, wealth, and fame, even though Confucian philosophy and Buddhism renounce profit, wealth, and success as the purpose in life. Buddhism and Confucianism emphasize correct understanding through self-cultivation, learning, and compassion. Korea is an example of a country that views *jung*("affection and attachment") as the core value in their culture. However,

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with the pursuit of economic development, wealth, and success, Koreans are experiencing a breakdown in relationships as evidenced by the high divorced rate, low birthrate, elderly poverty, and low scores on World Happiness Survey.

Findings in Easterlin et al. (2010), Kahneman and Deaton (2010), the Harvard Study of Human Development, and other research on mindfulness point to two important factors that influence happiness, life-satisfaction, health, and long life - maintaining close relationships and experiences focusing on the moment (Kim & Kim, 2023). However, these studies are based on correlations, and they do not explicitly identify the mechanisms through which people experience happiness, life-satisfaction, and maintain their health.

Cross-sectional and longitudinal studies on human agency clearly show that self, relational, social, and collective efficacy have a direct and positive impact on happiness, life-satisfaction, and health and reduce, stress, depression, and delinquency around the world (Bandura, 1997; 2023; Caprara et al., 2008; Kim & Kim, 2022; 2023). They have shown that the self, relational, social, and collective efficacy can be raised by providing social support and feedback both in the laboratory and real-life settings to promote healthy human development, achievements in school, sports and organizations, and transformation in society. The central difference in the Social Cognitive Theory outlined by Bandura (2023) is that there is no one generic "silver bullet" that has the same impact across situations, time, and culture. Scales need to be developed to be domain specific and relevant to the target group, level of analysis, and culture. (See Appendix 1).

Bandura (1977, 2016, 2023) has clearly shown that human beings are agents of our action and are responsible for our behavior, but as agents we can try to avoid responsibility and commit atrocities while feeling good about ourselvesthrough moral disengagement. Moral disengagement represents denying the personal, proxy, and collective agency by avoiding taking responsibility for one's violence, exploitation, and unethical behavior to pursue selfish, greedy, and profit-oriented power. The law of supply and demand, political expediency, and "winning at any cost" are used to justify immoral behavior (Bandura, 2016). Interest groups, media, religion, business, and political leaders are justifying their inaction using moral disengagement while the world

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is experiencing climate crisis, social inequality and discrimination, and problems in governance and ethics. Bandura (1997, 2016, 2023) has shown the mechanism through which human agency operates to promote happiness, health, and achievements and create violence, exploitation, and dehumanization through moral disengagement.

There is a quiet revolution brewing in the world that is transforming the way we think, feel, relate to others, and live. The digital revolution has created an augmented reality driven by the development of the online platform that supports smartphone, social media, e-commerce, and the GPS navigation system. The online platforms allow people to choose the information and news they want to consume, interact with a select few like-minded people, learn from influencers on social media, and create online communities to share their views and personal experiences. This trend accelerated during the COVID-19, where people were locked down, practiced social distancing, and avoided person-to-person interactions. It accelerated the consumption culture through shopping online, using e-commerce and delivery services, sharing information through instant messaging and social media, obtaining content through streaming, and meeting people through virtual meetings and web-conferences.

The digital revolution created a new platform where information can be created, shared, and consumed freely bypassing government regulations. People have access to a vast amount of information, news, and content from diverse sources. They are allowing information to flourish through these platforms that remain largely unregulated. Human life has always been regulated through nature and society through laws, regulations, and norms (Lahlou, 2017). For the first time in history, we are bypassing ecology and society to allow few large IT companies to create online platforms and allow many people and groups the power to define and the power to control without considering the ethical, moral, and social implications.[23]

For the first time in history, people and especially Gen Zs, are obtaining information, news, and content from streaming services rather than the traditional community and linear media. Brown (1986) reviews research on social influence and found that people seek information and news that confirm and verify their current beliefs and prefer to associate with a group of liked-minded people. In such a community, a person who articulates a more extreme view has more influence on the group members. This creates

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a risky shift and extremism since people are attracted to views that are more extreme than their current view. They become more extreme when they discuss their views with their group members (Brown, 1986). With the access to unregulated online channels, there is growing extremism, popularism, and fragmentation that entrench and justify their existing views and have spurred the consumption of fake news, populism, and conspiracy theories.

With the digital revolution, individuals spend more time online and become absorbed in their micro-worlds, avoiding person-to-person contacts. People can choose to select the information that confirms their views, to interact with like-minded people, and to reject a balanced view and tolerance that are necessary for a functional society. Smartphones, internet, and cloud computing allow people to access information and connect to AI and augmented reality 24 hours a day and 7-days a week. The smartphone has now become an essential device where people are willing to give up food for a day rather than part with their smartphone. It has become a new baby-sitter where infants stare at the screen for hours and learn to use these devices before they can walk or talk. Generative AI can create reports, paintings, and photos using AI computer generated algorithms so that we do not have to think and use our brain. These phenomena concerned Einstein many years ago, who lamented in 1946 that "I believe that the abominable deterioration of ethical standards stems primarily from the mechanization and depersonalization of our lives - a disastrous byproduct of science and technology. *Nostra culpa*! (We are to blame!)."[24]

Although the world is facing global climate crisis, wars, social inequality, and ethical problems, unregulated social media is fueling the breakdown of society. Politicians and government bureaucracy maintain conflicts, dissensions, and fragmentation without providing viable solutions. Gen Zs are disengaging from the local communities and institutions created by the Baby Boomer generation since they do not represent their values and aspirations. They are engaging in online communities and live on their own in micro-worlds that provide greater freedom, access, and convenience. This has led to fragmentation, disengagement, and the distrust of the government, media, social institutions, and companies.

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This is the challenge that the global community is facing where people are much more engaged online, but disengaged from existing relationships, community, and society. Gen Zs find it more convenient and comfortable to communicate remotely using online social media platforms and avoid face-to-face interactions. Companies and employees see the benefits of meeting online rather than travelling to the office or abroad.

With the current trend, can people develop close relationships that will make them happy and healthy while disengaging from the existing relationships, community, and society? Will the consumption of IT and smart technology create psychological obesity and addiction the same way the consumption culture of the baby boomer generation has done? Will the IT companies create the future driven by their profit-motives and human beings become slaves to technology? These are the questions that research needs to address.

Gen Zs are starting a quiet revolution in which they want to create the future for them, by them, of them. We need to examine the basic assumptions about the foundation upon which society is built and assumptions about what people believe and pursue. Human societies developed civilization through engagement, sharing ideas and emotions, and creating innovations through co-creativity. We need to examine whether the IT platform will encourage people to disengage, avoid human contact, and live in the fragmented micro-worlds.

Drucker (2001) outlined human-centered management for business, government, and NGOs. Profit should not be the goal but the outcome of satisfying the needs of the customers, citizens, and community and supporting a functional society. Drucker (1974) points out that "free enterprise cannot be justified as being good for business. It can be justified only as being good for society" (p. 41). Bandura (2023) emphasizes human agency in promoting creativity and innovation through self, relational, social, and collective efficacy. We need to pursue common goals that are aligned with people's aspirations, engage with people rather than disengage, and provide support for individuals to contribute to their well-being and happiness as well as society since we are all inter-connected.

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Annex 1

Scales used for empirical studies: Self-efficacy, leadership efficacy, social and online support, happiness, and work values

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Scale 1: Self-Efficacy (Bandura, 1995; Kim & Kim, 2021)

This section is designed to help us get a better understanding of the kinds of things that are easy or difficult for you.

Please select the appropriate number.

Not very well		Not too well		Pretty well		Very well
1	2	3	4	5	6	7

(1) Self-regulatory efficacy	**How well can you…** 1. ...make plans for your required assignments? 9. ...organize your assignments? 17. ...study when there are other interesting things to do? 25. ...arrange a place to study without distractions? 33. …motivate yourself to complete on your assignments on time? 41. ...finish assignments by deadlines?
(2) Self-Assertive Efficacy	2. ...stand firm to someone who is asking you to do something unreasonable or inconvenient? 10. ...stand up for yourself when you feel you are being treated unfairly? 18. ...deal with situations where others are annoying you or hurting your feelings? 26. ...express your opinions when others disagree with you? 34. ...withstand social pressures and express your views.
(3) Social Self-Efficacy	3. ...make and keep friends of the opposite sex? 11. ...make and keep friends of the same sex? 19. ...carry on conversations with others? 27. ...work in a group? **Items added by Kim and Kim (2021)** 35. …create an enjoyable atmosphere in a social gathering? 42. …change an awkward social situation into a comfortable one?
(4) Relational Efficacy	**Developed by Kim and Kim (2021)** 4. ...maintain sincere/true relationship with your friends? 12. ...maintain friendly relationship with your fellow students? 20. ...maintain affectionate relationship between your brothers and sisters? 28. ...maintain a close relationship with your parents? 36. ...maintain a harmonious relationship with your relatives? 42. ,.. maintain a positive relationship with your lecturers and professors?
(5) Resiliency of Self-Efficacy	5. ...keep tough problems from getting you down? 13. ...bounce back after you tried your best and failed? 21. ...get yourself to keep trying when things are going really badly? 29. ...keep up your spirits when you suffer hardships? 37. ...overcome discouragement when nothing you try seems to work? 43. ...get rid of self-doubt after you have had tough setbacks? 47. ...keep from being easily rattled?
(6) Self-Efficacy in Enlisting Social Resources	6. …get your professors to help you when you get stuck on schoolwork? 14. …get another student to help with your schoolwork and prepare for the exam? 22. …get your friends to help you when you have social problems? 30. …get your parents to help you financially and buy the things you need? 38. …get your parents to support your personal decisions and career choices? 44. …get online community members to help you when you need information or help?
(7) Self-Efficacy to Meet Others Expectations	7. …live up to what your parents expect of you? 15. …live up to what your professors expect of you? 23. …live up to what your friends expect of you? 31. …live up to what your relatives expect of you? 39. …live up to what you expect of yourself? 45. …live up to what online community members expect of yourself?
(8) Family collective efficacy	**Developed by Kim and Kim (2021)** 8. …you and your family members work together in maintaining a harmonious family? 16. …you and your family members work together in keeping the house neat and clean? 24. …you and your family members support each other in times of difficulties? 32. …you and your family members communicate to each other when deciding important issues? 40. …you and your family members confide in and support each other? 46. …you and your family members fulfill one's role as a father, mother, child or sibling?
(9) Health	**Developed by Kim and Kim (2021)** 1. ...get good quality sleep, around 8 hours a day. 2. ...manage stress and feel good. 3. ... exercise daily to be full of energy. 4. ... eat healthy food and avoid junk food and snacks. 5. ... avoid unhealthy habits (e.g., smoking, drinking and addictive games)

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Scale 2: Leadership Efficacy (Kim & Kim, 2021)

How well can you do the following tasks? Please click the appropriate button ○ below the number.

Not very well		Not too well		Pretty well		Very well
1	2	3	4	5	6	7

1) Analytical Skills	**How well can you…** 1. ...analyze complex problems to understand the underlying cause? 9. ...identify key patterns in the complex dataset? 17. ...understand important trends in the changing environment? 25. ...weigh pros and cons for a decision and select at the best option? 33. ...analyze and integrate diverse information to complete a report? 41. ...understand various perspectives and integrated them with your own ideas?
2) Communication skills	2. ...communicate your ideas clearly and effectively? 10. ...understand non-verbal cues and situational demands? 18. ...communicate in a calm manner even in disagreements or conflict? 26. ...raise questions to clarify and understand? 34. ...listen to other people's ideas and provide constructive feedback? 42. ...communicate with team members to arrive at consensus?
3) Professionalism	3. ...develop your professionalism to become the best in your field? 11. ...organize and implement your ideas even in stressful situations? 19. ...perform required tasks accurately and in a timely manner? 27. ...understand your mistakes and not to repeat them? 35. ...focus on your work regardless of external pressures? 43. ...keep your promises and deliver results in a timely manner?
4) Teamwork	4. ...motivate your team members to work together effectively? 12. ...encourage open team discussions and to arrive at a consensus? 20. ...put the goal of the team ahead of your personal interests? 28. ...provide feedback and support your team members? 36. ...become a role model in influencing your team members? 44. ...work within and across teams to develop collaborative relationships?
5) Creativity	5. ...identify connections among various ideas? 13. ...generate new ideas during a group discussion? 21. ...engage with people with diverse background and interests? 29. ...maintain curiosity and have an inquisitive mind? 37. ...learn new information to broaden your horizon? 45. ...analyze a situation and think outside the box?
6) Initiative	6. ...take on difficult tasks that others do not want to accept? 14 ...generate novel ideas when working on new projects? 22. ...pick yourself up after failing and take the lead? 30. ...take advantage of opportunities and become the first mover? 38. ...take on new tasks to become the best in the field? 46. …take risks and tackle difficult challenges?
7) Integrity	7. ...articulate your ethical standard and live up to them? 15. ...set an example for ethical behavior? 23. ...withstand social pressure and keep your promises? 31 ...objectively and fairly evaluate everyone's contributions? 39. ...commit yourself in achieving the goal in an ethical manner? 47. …live up to your personal values and moral standard?
8) Empowerment	8. …support others to increase their self-confidence? 16. …encourage an open dialogue and help others to reach consensus? 24. …support others so that they can achieve and have a sense of accomplishment? 32. …support others to create a sense of belonging and common purpose? 40. …create a positive environment and support others to help them grow? 48. …encourage others accept new ideas and to work together effectively?

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Scale 3: Social support received from parents and friend (Kim & Kim, 2021)

How much support do you receive from your parents and friends? Please click the appropriate number.

Not at all		Little		Somewhat		Very Much
1	2	3	4	5	6	7

Parent	**Emotional**	1. My parents make me feel secure and comfortable. 6. My parents know and understand me. 11. My parents are kind and warm. 16. My parents listen to my worries. 21. My parents console me when I am in trouble.
	Informational	2. My parents advise me about my future. 7. My parents give me useful advice about my academic life. 12. My parents provide useful information about job opportunities. 17. My parents help me to prepare for my career. 22. My parents teach me how to behave politely.
	3) Practical	3. My parents work hard to provide me with the necessary financial resources. 8. My parents pay for my living expense, transportation and spending money. 13. My parents provide a nice home, desk and computer so that I can concentrate on studying. 18. My parents cook, clean and take care of the house and I do not have to do household chores. 23. My parents pay for my tuition fee and necessary supplies for my schoolwork.
Friend	**Emotional**	4. My friends make me feel secure and comfortable. 9. My friends know and understand me. 14. My friends are kind and warm. 19. My friends listen to my worries. 24. My friends console me when I am in trouble.
	Informational	5. My friends tell me about interesting hobbies and places to go. 10. My friends give me useful advice about my schoolwork. 15. My friends provide useful information about job opportunities. 20. My friends help me with my career development. 25. My friends show how to develop interpersonal skills.

Social support from online community (Kim & Kim, 2021)

How much support do you receive from your online community members?

Not at all		Little		Somewhat		Very Much
1	2	3	4	5	6	7

Online community	**Emotional support**	1. They make me feel secure and comfortable. 4. They know and understands me. 7. They are kind and warm. 10. They listen to my worries. 13. They console me when I am in trouble.
	Informational Support	2. They tells me about interesting hobbies and places to go. 5. They give me useful advice about my schoolwork. 8. They provide useful information about job opportunities. 11. They help me with my career development. 14. They show how to develop interpersonal skills.
	Career	3. I obtain information about job opportunities. 6. I obtain information about certificate programs. 9. I obtain information about the qualifications of successful job applicants. 2. I study together with them for job application. 15. I obtain feedback about writing self-introduction and resume. 16. I obtain information about part-time job. 17. I obtain information about the internship opportunities.

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Scale 4: Happiness: Kim and Kim (2021)										
On this scale, the best possible life would be 10, and the worst possible life being a 0. Please click the appropriate number										
Not at all		**Little**		**Somewhat**		**Much**		**Very much**		**Completely**
0	**1**	**2**	**3**		**5**	**6**	**7**	**8**	**9**	**10**

(1) Self	**How happy are you with the following aspects of your life?** 7. I maintain a good personality and a positive outlook. 13, I communicate well and maintain good relationship. . 19. I manage my looks and fashion sense well. 31. I manage my time effectively. 1. I engage in interesting hobbies and activities. 2. I am able to develop effective working style.
(2) Academic life	5. I can study with my classmates and prepare for the exam together. 11. I am able to learn new knowledge and skills from my professors. 17. I benefit from the academic programs provided by my university. 23. I meet new people, helping to broaden my horizon. . 29. I enjoy participating in club and sports activities in the university. 35. I am able to get good academic grades.
(3) Career	2. I am developing the necessary knowledge to find a good job. 8. My academic training is helping me to develop skills for the future. 14, My major and training is providing a wonderful career track for me. 20. I am developing interpersonal skills to get along with team members. 26. I am developing professional skills to be successful in my job. 33. I am developing communication skill to work effectively in organizations.
(4) Health	1. I get good quality sleep, around 8 hours a day. 2. I manage stress well and feel good. 3. I exercise daily, and I am full of energy. 4. I eat healthy food and avoid junk food and snacks. 5. I avoid unhealthy habits (e.g., smoking, drinking and addictive games). 6. I manage my negative emotions and don't feel down or depressed. 7. I maintain healthy lifestyle and I am not over-weight.
(5) Family	3. I enjoy spending time socializing with my family. 9. I discuss my hobbies and career interests with my family. 15. I enjoy traveling together with my family. 21. I am living in a supportive family environment. 27. I can always depend on my family to always be there for me. 33. I obtain the necessary financial support from my family.
(6) Friends	4. I can talk to and confide in my friends. 10. I can socialize with many friends and have fun. 16. I enjoy traveling together with my friends. 22. I am able to develop social skills working together with my friends. 28. I enjoy discussing my hobbies and career interests with my friends 34. I can trust my friends to be always there for me.
(7) Society	6. I live in a safe society, free of crimes and violence. 12. I live in a just society where everyone is treated fairly. 18. I live in a society with good education and healthcare. 24. I live in a society free from corruption and injustices. 30. I live in a society where there are many job opportunities. 36. I live in a society where everyone is caring and sharing.
(8) Spiritual	1. I and fellow believers assist people in need. 2. Whenever there is a problem, I turn to my faith and God. 3. I feel a sense of community with my fellow believers. 4. I can share my faith and receive spiritual support from my fellow believers. 5. I can practice my religion daily to feel spiritually connected. 6. My faith keeps my family strong and connected in love. 7. I find peace in my faith and hope for the future. 8. Through my faith, I develop compassion and love for others. 9. I can practice my religion without any restriction or fear. 10. My faith helps me to overcome difficulties and life's many problems.
(7) Overall	37. Overall, I am very happy.

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Scale 5: Work Values (Kim & Kim, 2021)

When you work for company/organization, how important are the following values to you?
Please select the number that best describes your value and click the appropriate button ○ below.

Not at all		Little		Somewhat		Very much
1	2	3	4	5	6	7
○	○	○	○	○	○	○

Work Values	**(1) Trust**	**It is important that…** 1. I am treated and evaluated fairly by my boss. 10. I can maintain a good relationship with my colleagues. 19. The performance evaluation of the company is objective and fair. 28. The company has a systematic and easy to follow work guideline and manual. 32. My superior is considerate and understanding. 36. I can freely share my ideas with my colleagues. 40. There is a clear set of roles and responsibilities. 44. I can have good cooperation and teamwork within the department. 47. I can trust my colleagues and boss.
	(2) Achievement	2. There are opportunities to advance to higher level positions. 11. I can have new and challenging tasks. 20. I can work closely with and learn from my boss. 29. I can be recognized for my achievements through objective evaluation. 33. I have an opportunity to receive high salary and recognition. 37. I can be promoted rapidly based on my achievements. 41. I can get a personal sense of accomplishment by engaging challenging tasks. 45. I can become an expert and professional in my field. 48. I can produce results that contribute to the company's success.
	(3) Security	3. The company provides job security. 12. I have sufficient time for my personal and family life. 21. I can become financially secure by earning a stable income. 30. The company provides lifetime employment. 34. The company provides good fringe and welfare benefits. 38. The company looks after employees during times of economic crisis. 42. I am able to earning steady income from the company. 46. The company develops employees' knowledge and skill to support job security and promotion. 49. The company provides social benefits to family members.
	(4) Self-direction	4. I can earn a good income and enjoy life. 13. There is a clear observance of work hours. 22. I can become financially independent and retire early. 31. I can use my paid holiday and travel freely. 35. I can spend time engaging in personal interests and hobbies. 39. I am able earn additional income by having a second job. 43. I have work life balance to pursue my interests.

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Footnotes

1 : https://news.stanford.edu/2005/06/12/youve-got-find-love-jobs-says/↩

2 : https://www.npr.org/sections/13.7/2018/03/14/593156411/the-universe-according-to-albert-einstein-relativity#:~:text=Einstein↩

3 : https://www.hawking.org.uk/in-words/lectures/does-god-play-dice↩

4 : https://en.wikipedia.org/wiki/Rose_is_a_rose_is_a_rose_is_a_rose↩

5 : https://www.amnh.org/exhibitions/permanent/human-origins/↩

6 : https://www.nationalgeographic.com/animals/mammals/facts/bonobos↩

7 : https://gwtoday.gwu.edu/bonobos-may-resemble-humans-more-you-think↩

8 : https://www.health.harvard.edu/mind-and-mood/oxytocin-the-love-hormone↩

9 : On a personal note, prior to my family's immigration to Canada at the age of 9, I was administered the Korean version of WISC IQ test, and I had a very high score. When I arrived in Canada, I was administered the English version, and my IQ went down by 50 points. I was assigned to a remedial class and learn English with children with mental and physical disabilities. It is hard to believe that my IQ could go down more than 40% by getting on a plane and arriving in Canada. It is fortunate that I did very well in mathematics or else I would be viewed as having an intellectual deficit.↩

10 : On a personal note, I was interviewed by Fred Rothbaum prior to their publication of their article on *amae* since he knew that I was teaching at University of Tokyo and collected data on *amae*. He also interviewed Susumu Yamaguchi, University of Tokyo. We were both shocked and appalled when we read the article. It is clear that he did not understand the indigenous concept of *amae* and Japanese culture but decided to draw the conclusion to fit the American individualistic bias. ↩

11 : See for instance, Henke & Tattersall (2007), Siegal (2010), and Hüther (2016).↩

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12 : https://www.nytimes.com/2003/11/30/magazine/the-guts-of-a-new-machine.html↩

13 : https://en.wikipedia.org/wiki/Isaac_Newton↩

14 : https://en.wikipedia.org/wiki/Health_of_Vincent_van_Gogh↩

15 : https://www.amnh.org/exhibitions/permanent/human-origins/↩

16 : https://www.genome.gov/human-genome-project↩

17 : https://www.smithsonianmag.com/science-nature/bonobos-teach-humans-about-nature-language-180975191/↩

18 : https://countryeconomy.com/demography/world-happiness-index/south-korea↩

19 : https://nces.ed.gov/timss/↩

20 : https://www.oecd.org/pisa/publications/pisa-2018-results.htm↩

21 : www.inews24.com/view/1407279↩

22 : http://theviewers.co.kr/View.aspx?No=1627553↩

23 : The European Union passed the Digital Services Act (DSA) that took effect on February 17, 2024. The goal is to protect "consumers and their fundamental rights online by setting clear and proportionate rules. It fosters innovation, growth and competitiveness, and facilitates the scaling up of smaller platforms, SMEs and start-ups. The roles of users, platforms, and public authorities are rebalanced according to European values, placing citizens at the centre." The DSA "regulates online intermediaries and platforms such as marketplaces, social networks, content-sharing platforms, app stores, and online travel and accommodation platforms. Its main goal is to prevent illegal and harmful activities online and the spread of disinformation. It ensures user safety, protects fundamental rights, and creates a fair and open online platform environment." It is the first attempt to systematically regulates online platform and we need to examine if the regulation is effective, whether it will stand the legal challenges, and whether the USA will apply sanctions against EU since the vast majority of the online platforms are dominated by the USA companies. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/digital-services-act.↩

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24 : https://www.politifact.com/factchecks/2019/mar/22/facebook-posts/no-albert-einstein-did-not-say-technology-would-cr/↩

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