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An In-Depth Philosophy Solving the Mystery of Digital Equity

Lam Kai Shun, Carson, Siu Lok Shun

Department of Mathematics, University of Hong Kong, Pokfulam, Hong Kong

ABSTRACT

Previous studies by Lam (2016) show that infinity can be used as a bridge (i.e. constitutes a proof) to connect mathematics and Roger Penrose's three world philosophy. Indeed, one can extend Penrose's three world philosophy to Ken Wilber's Spectrum of Consciousness, which consists of four levels and nine stages. To delve deeper into this theory, it may be proposed that the Multiple World Philosophy corresponds to the multiple types of infinity. This theory can then be applied to describe the complex multidimensional characteristics of digital equity. In addition, it can be used to depict the interconnections between these dimensions, as there are also affiliations between these worlds. Therefore, Multiple World Philosophy is highly likely to be a theory for solving mystery for different characters — the multiple dimensions of digital equity. The occurrence of digital equity implies that we are emerging as an information-based society. Thus, information-based ethics such as privacy, accuracy, property, and accessibility should be included in school curriculums. In such a case, the access or non-access problem transcends to the ethical usage of ICT devices. By understanding the multiverse philosophy, it is possible to overcome part of the gap it creates by applying strategy. In fact, one can only solve this problem using multi-policies that correspond to different dimensions, since digital equity employs a multi-dimensional philosophy. Therefore, schools, community resources, the government, and private corporations must work together to develop a citizenry that is capable of participating in the present information age that helping to settle the digital equity more effectively.

Key words: Digital Equity, ICT, Philosophy

INTRODUCTION

There are numerous concerns surrounding the multi-dimensional characteristics of digital equity. Until now, a mystery remains for establishing a theory and hence solving the gap problem created by equity. In this study, different types of infinity will be used as a crossover to show the existence of multiple worlds. More specifically, these infinities will provide evidence to support multiverse philosophy. Hence, one can extend this theory to the multi-dimensional properties of digital equity and recommend feasible policies to overcome the divide. Who is the most concerned about digital equity (Cuneo, 2002)?[1] It is fair to say that business cooperates undoubtedly want this

Address for correspondence:
Lam Kai Shun
E-mail: h9361977@connect.hku.hk

problem to be solved. According to DiMaggio, 2001 and Business Week, 2000, reasons were when one could:

1. Increase the size in population of highly-skilled information technology (I.T.) workers
2. Increase the size in population of consumers using E-Commerce.

The following sections will depict in detail how to implement the proposal.

LITERATURE REVIEW

Spectrum of Consciousness

To begin, in 1974, Wilber[2] used the "Spectrum of Consciousness" to describe human personality. This is a multi-level manifestation or an expression of a single consciousness. To be precise, one can investigate a human's identity through the Spectrum of Consciousness in a pluri-dimensional

approach. The levels of spectrum are described as below – Michael:

Root Level – Universe

One will use the universe as the meaning of existence. Usually, the one cannot describe it with the essential, undifferentiated essence of reality. Hence, one has not found a clear perceptual difference between subject and object. This implies unconsciousness and the one cannot find a perceiver.

Lower Level – Mind

At this level, the mind is referred to as a basic awareness. One will aware that he or she is all or the universe without finding any differences. According to the model, a spiritual enlightenment is needed to help in such case for aligning the perception within the level of mind.

Middle Level – Existential

Human beings will feel that they are an entity which can be distinguished from the outside environment at the present level. Clearly, one can tell the difference between the rest of the universe and the organism which is denoted by Wilber as the Primary Duality. Spiritually, this is where one's "illusion of separation" starts.

Upper Level – Ego Level

The total sum of the beliefs, attitudes, opinions, and perceptions of a human being as a unique individual who can be distinguished completely from other individuals in personality. At an ego level, human beings are not merely a separate entity, but also unique individuals that can be personally referred to as "me."

Ultimate Level – Shadow Level

When someone analyses or judges that one is living in an unhealthy world, or having a crisis of ego, then that stands as an ultimate level of ego. At this stage, Wilber proposed that one's personality becomes fractured. In addition, one will imagine the world to be in the aspects of their ego.

Furthermore, there are sub-levels such as Philosophic Bands, Biosocial Bands, and Transpersonal Bands that constitute the full picture of the Spectrum of Consciousness. Figure 1 below depicts the full story.

Different Types of Infinity

There are different types of infinity such as: Potential and actual, theological and mundane, natural and formal, enumerable, and non-enumerable infinity. Each will be discussed, as described below. More specifically, different levels of the spectrum are distinguished by a distinct sense of individual identity.

Natural and Formal Infinity

One may refer natural infinity to those personal concepts of infinity which is reflected on finite human experiences (Tall, 2001).[3] The imagining of these practices is then extended to the infinite. People may consider formal infinity as the formal approach to mathematics. The reasons for the formalization are individuals' being "labile and self-contradictory" in the natural concepts of infinity. The aim is to rationalize those inconsistencies through the selection of a finite list of specific axioms. They build the concept of a formal infinity through a formal deduction (Tall, 2001).

Indeed, one can develop different formal systems from the different properties of finite numbers such as counting, ordering and arithmetic (Tall, 2001). Hence, one may have cardinal and ordinal number theory so as the properties of arithmetic which leads to ordered fields. These fields
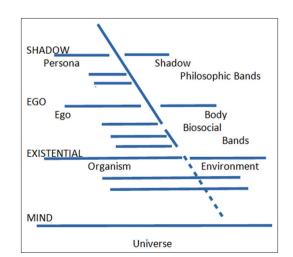

Figure 1: The Spectrum of Consciousness (Wilber, 1974)

consist of infinite and infinitesimal quantities. In fact, the natural concepts of infinity are known as "built-in contradictions" and different properties forms different kinds of formal infinity. One of the most famous examples is the extension of the finite set to the infinite set with formal concepts including "function," "group," "topological space," "cardinal number," and "infinitesimal" with other definitions as well as mathematical proof (Tall, 2001). According to Tall, 2001, the result of formal theory is structure theorems with the interpretation that their formal properties are in a more subtle form of embodied imagery.

Potential and Actual Infinity

According to Lam, August, 2016, one usually refers to the concept as an on-going process which is repeated continuously but is conceived as being "completed" or having a final resultant state (N.ez, 2005). For instance, one can contemplate the sequence of regular polygons with an increasing number of sides where the distance from the center to any of the vertices remains constant. One always begins with a triangle, then a square, a pentagon, a hexagon and so on endlessly until it completes a circle. This is because after each iteration, there is an increase in one to the number of sides. The side's length becomes smaller but the distance "r" between the center of the polygon and the vertices remains the same. As one continues the process, the area and the perimeter of the polygon gets closer and closer to the value in πr and $2\pi r$, respectively. The circle has all the prototypical properties that circles must have but conceptually it is a polygon.

On the contrary, potential boundlessness means "a non-terminating process (such as "add 1 to the previous number") produces an unending "infinite" sequence of results, but each individual result is finite and is achieved in a finite number of steps.[4]" This means there is no ending prototype like the circle in the example since the process will never end. As such, mathematical philosophers such as Cantor and Aristotle have developed these concepts of actual and potential.

Enumerable and Non-Enumerable Infinity

One may usually consider enumerable and non-enumerable infinity in terms of set theory. A set is defined to be enumerable if it has a surjection from natural number onto the set. This means an enumerable set is a set which is in well-ordered sequence. Similarly, Boolos *et al.*, (2007) suggested that a set is said to be "countable" or "enumerable" if its members can be arranged into a single list. For example, in enumerating the name of a class member, one does not have the classmates form a queue. Rather, one arranges their names in a list in alphabetical order. Simultaneously, the enumerable set may be finite or unending. An infinite enumerable set is known as "enumerability infinite" or "denumerable." On the other hand, one may define non-enumerable set X as something that cannot be well ordered. There is no function as such of infinitely many elements from natural number maps to the non-enumerable set X. That is, there are more elements of set X than the infinite many natural numbers. To conclude, it is important to note that enumerable and non-enumerable infinity came from the idea of Cantor.

Theological and Mundane Infinity

It is common to refer theological infinity to the meaning of God and infinity in Christianity. Indeed, the best description of God's infinity is through a theologian's idea (-Anselm): "that than which nothing greater can be thought." Although there is debate among philosophers for the proposed statement, Przywara further explained his concept of God: "beyond anything that can be thought." This means that an infinite God cannot be measured in any degree. Conversely, if one can know the degree of one's deficiency in the knowledge of God, one will know what God really is. Hence, one may discover that the clarity of conception will create a more specific understanding of God's finite form. Therefore, it will be known that God is away from him. Thus, God must be infinitely unknowable.

For mundane infinity, the most common daily phenomenon is "time." In fact, time can be measured with limits in terms of beginning and ending (Heller *et al.*, 2011).[5] This implies that time is in a mundane order. In other words, it contradicts with eternity, which cannot be measured and with no starting point and terminating. Hence, eternity has no order (Heller *et al.*, 2011).[5]

In the end, there are still some other types of infinity such as spatial and null, which have not

been discussed. Indeed, infinities act as a bridge to show the possibilities of multiverse philosophy. This will be discussed in the next section.

The Many Worlds Interpretation (MWI) of Quantum Mechanics – A Multiverse Philosophy

According to the Stanford Encyclopedia of Philosophy as well as in Dvorsky as described below, the MWI of quantum mechanics proposed that there are many parallel worlds which exist in the same space and time as our own. In other words, all of existence is a quantum superposition of a non-enumerable (or infinite) number of universes. The validation of the theory implies that there are astounding numbers of alternate worlds. At the same time, instead of a discrete and coherent journey, there are "an exponentially expanding set of instances." In other words, we do not exist merely as individuals but as multiplicities. However, one has the impression of being only a single person since no one can observe multiple experiences. Hence, MWI implies that there is a constant variability based upon different probabilities. This means each new instance of a human being is distinct while an alternative outcome will transpire from an observed world. For example, someone might still be with a former romantic partner or be an evil version of them. If one does not violate the basis of physics, there are an endless number of possibilities. As previously mentioned, can one go through all the possibilities with feasible outcomes and decide based on this knowledge? MWI experts such as Michael point out that each decision has its own "weight" under the law of quantum statistics. However, one could still choose a different course of action. As a result, this would influence quantum events for classical scale objects such as brain cognition. In other words, one still has free will.

At the same time, there is a radical world of strange. For instance, someone might be able to play Rachmaninoff's 3rd Piano Concerto without proper training. In such an instance, the superposition produced by a brain-state would be resolved and hence produce the correct movements. However, some sceptics suspected the case and have proven that it cannot happen. Nevertheless, based on the world of strange, the famous "Quantum Suicide Thought Experiment" explains that someone can be immortal since they would never shoot themselves during a game of Russian Roulette after 50 spins of the barrel. Thus, the experiment acts as a proof of MWI and means someone can be immortal.

Furthermore, in 1995, to investigate the existence of multiple worlds, Plaga suggested an experimental test to show the exchange of information and energy between these worlds. The details which had already been shown by Dvorsky explained that one could send low bandwidth information to a parallel reality. It should be note that the implications of such communication are still under discussion. Hence, one cannot screw up the timeline when there are alternate worlds. The final implication of infinite worlds is that everything has already happened.

DISCUSSION

Various types of infinity implies multiverse philosophy.[6]

Lam, August 2016,[6] showed that:

1. Cantor's theory implies actual infinity – The count ability of numbers
2. Kronecker's disagreement suggests potential boundlessness – The big bang theory
3. Dedekind's concept describes absolute endlessness – The existence of god.

These results constitute the evidence (or in a certain sense the above outcomes become a mathematical proof) of the Roger Penrose's Three World Philosophy from the three types of Mathematical philosophy through the three types of infinity. Indeed, the count ability of numbers denotes the platonic mathematical world where proofs start from small values and increase to large ones. This is like what the physical world predicts with the "Expanding" Big Bang Theory. At the same time, Skolem's primitive recursive arithmetic of Kronecker's finitism forecasts the infinitude of the mindscape. In other words, there is a relationship between the physical world and mental world. Finally, a thought T is like the objects in the platonic mathematical World. Hence, Penrose's philosophy can be mapped as the basis of three types of mathematical philosophy. Therefore, it is sagacious to include philosophy in our secondary curriculum to understand the reasons behind studying mathematics.

In a similar way to Penrose, Lam, October 2016[7] suggest that social objects, cultural identities, and personality (corresponding to social, cultural, and psychological dimensions) comprise another form of the Three World Theory in digital equity. Indeed, one can easily extend the Three World Philosophy

into Wilber's famous Spectrum of Consciousness. By further extension, one can even conclude that there are a multiple number of worlds. There are many different types of infinity as described earlier in the literature review section. These infinities act as a bridge proving the existence of the "Many Worlds Philosophy" which itself depicts the multidimensional properties of digital equity (this is like the case of how actual, potential and absolute infinities can proof the existence of Roger Penrose's Three World Philosophy).[8] Hence, different types of infinity imply the multiverse philosophy. The next section will discuss the multidimensional nature of digital equity.

Multiple Dimensions of Digital Equity

In 2002, Cuneo identified 12 dimensions (or perspectives) for digital equity. These were demographic, geographic, gerontological, feminist, psychological, educational, economic, sociological, labor, cultural, disability, and political. As such, each dimension interacts with one another, which, in turn, creates problems for academic professionals when finding a philosophy for digital equity. In reality, Figure 2 demonstrates the modelling of multiverse philosophy and their inter-relationships. This author proposes that the multiverse is the correct theory and will discuss why and how in the next section. A modified Table 1 from Cuneo, 2002, shows details for each of the perspectives and tells us the full picture of digital equity. At the same time, there are implications from each of the dimension's Internet access statistics. Thus, one can forecast their
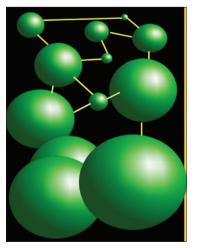

Figure 2: The multiple dimensions of digital equity can be modeled by the multiverse philosophy and demonstrates their inter-relationships

tendencies in the future and create the necessary schedule accordingly.

Rationalizing the Relationship between Multiverse and Multi-dimensional Digital Equity

What is the relationship between the multiverse and digital equity? The philosophy of the multiverse explains that there are multiple different worlds existing simultaneously and side by side in the same space and time. Cuneo (2002) suggested that one could categorize digital equity into at least 12 different perspectives or (dimensions).
"Each constitutes a partial understanding but on its own remains a partial explanation of the overall digital divide. The challenge is to put them together into a synthetic understanding of the digital divide." (p.7)
Hence, one can observe that both the multiverse and digital equity predicts the existence of multiplicity. In addition, for the MWI, these parallel worlds also interact with each other. According to Professor Howard Wiseman, "The idea of parallel universes in quantum mechanics has been around since 1957. In the well-known MWI, each universe branches into bunches of new universes each time a quantum measurement is made. All possibilities are therefore realized – in some universes the dinosaur-killing asteroid missed Earth. In others, Australia was colonized by the Portuguese. One can summarize three main points from the MWI theory as stated by Griffith:
1. That the universe we live in is just one of a "gigantic" number of worlds, a few of them are similar ours while most of them are very different
2. That all the unknown worlds are real and exist through time with well-defined characteristics
3. And those quantum phenomena are the results of "a universal force of repulsion between nearby or similar worlds." The force makes these worlds very different.
In a similar way, different dimensions of digital equity interplay with each other. As Fuchs, 2009: p.55[9] mentioned, there is "an interaction of socioeconomic, political, cultural, social, and technological factors that shapes access to ICTs." For example, Cuneo (2002) told us that aging also interacts with other perspectives of the

Table 1: Twelve dimensions or perspectives on the digital equity

Theoretical perspective	Basic concept	Relation across the equity	Barrier	Relevant statistics	Resolution/implications
1. Demographic	Population; individuals	Computer to person ratio	Individual access	Internet User: 1995 - 16 m 2001 - 513 m 2004 - 709 m	Government Programs; employment opportunities High level ICT skilled workers will be benefited
2. Geographic/ engineering	Data packet; Nation-state	Transmission	Infrastructure	Number Online: USA: 14.44m Africa: 4.15m (Year 2001)	Wireless - the digital gaps may be captured through the transition of Internet access to other ICT devices
3. Gerontological	Age	Life cycle	Experience	Internet usage and Age USA (year 2000) 18–25: 57% > 50:30%	Training – Elderly can receive sufficient support and even change their attitudes to technology
4. Feminist	Gender / Sex	Patriarchy	Harassment	Internet Access by Gender in USA: Men Women 1995 82% 18% 1996 66% 34% 1997 67% 33% 1998 44% 36%	Androgyny – breakthrough the limitations of dichotomies between male and female in the gender research of digital equity
5. Psychological	Attitude; disposition	Confidence	Fear; technophobia	Nil	Long terms supportive training and socialization – Preventive Parent Interventions
6. Educational	Knowledge	Learning	Traditional education	U.S. Education and Internet Access 1998 2000 <High school 5.0% 11.7% Postgraduate 53% 69.9%	Online distance education – Increase the educational productivity
7. Economic	Capital	Markets	Government regulation	U.S. Income and Internet Access 1998 2000 < $15,000 7.1% 12.7% > $75,000 60.3% 77.7%	Deregulation/Privatization - improve the overall profitability of an economy
8. Sociological	Occupational classes	Inequality	Unequal life chances	Nil	Equalization of conditions of opportunity - provide better conditions for persons with disabilities
9. Labour	Work; skills	Exploitation via technologies	Property	Nil	Socialization - impacts decisions regarding "acceptable alternatives for consumption"
10. Cultural	Ethnicity	Majority – Minority Relations	Discrimination	U.S. Internet Access by Race in % Year White Black 1997 21.2 7.7 1998 29.8 11.2 2000 46.1 23.5	Multilingualism – increase the level of Globalization and the interconnection between countries
11. Disabilities	Body	Physical and mental impairments	Lack of understanding and social, economic and political support	In U.S., 23.9% of disabilities have computers in home with ten (10)% can access to Internet	Adaptive technologies and designs (e.g., screen readers) – More chances for disabilities to access information
12. Political	Power	Rule	Non-democratic exercise of power	Software Piracy Lowest rate – U.S. with 24% Second lowest rate – Western Europe with 36% Highest rate – Vietnam with 97% Second highest rate – China with 94%	Online Democracy – people can develop democratic habits and skills and actual participation of citizenship

digital divide. In the case of the United States, it can be shown that the gender difference situation is serious in elderly people rather than young people. Statistics illustrate that there are only 40% of online female seniors, which is more than those male in this age bracket. This demonstrates that there is virtually no gender difference in the United State population.

Simply put, digital equity is a multi-dimensional phenomenon. In other words, there are several different factors which interact with each other to affect it. Therefore, this author proposes multiverse should be considered as a philosophy for the digital equity. This means one may view each affecting factor of digital equity as a different world with each of them being interacted. These factors have influence on each other which leads to the final result of the digital divide phenomenon outcome. This is similar to what the author suggested in Lam, October, 2016 – the social object, cultural identities, and personality forms a three world philosophy for digital equity. Indeed, as the digital equity is

a multiple dimensional phenomenon, the author extends three world philosophies to multiverse which is the best theory for describing it.

CONCLUSION: MULTIVERSE PHILOSOPHY AND DIGITAL EQUITY

The appearance of digital equity implies that a society is beginning to emerge into becoming an information-based society. Therefore, one should introduce information ethics such as privacy, accuracy, property, and accessibility to students. These ethics need to be cultivated by the parents or teachers to the students. Hence, the issue of digital equity transcends from the problem of students having access or not access to digital equipment to the matter of the "ethical usage in ICT in the Digital Divide of Education" (Lau, 2014: p.1).[10] Furthermore, as what Alan Kay proposed, people should not only look for the building of infrastructure on the Internet but should also try to "transcend the psychological and social limits of being human" (Compaine, 2001). Indeed, the Theory of the sublime, as suggested by Tsang Lap Chuen is related to transcendence. Tsang explains that:

1. The sublime is concerned with a limiting situation in life and our self-realization in it. To the extent through the sublime is intensified awareness of our self-realization at a life-limit
2. There are three kinds of life-limit: The top limit which transcends the border between natural and human, the medium limit where one appoints the bloom of their being, and the bottom limit which borders on non-existence
3. One can construct an object (which intensifies the awareness of self-realization at a life-limit) such that a set of thoughts and reactions pertaining to certain themes will be elicited. These are the limitation of powers and abilities, and the capability of being able to go up to or beyond those limits.

The rise of digital culture constitutes a form of "the digital sublime." According to Mosco, 2004, through the computer communication, there is a transformation in human experiences that will transcend time (the end of history), space (the end of geography), and power (the end of politics). In fact, the digital sublime is defined as "the reality that can be broken down into the smallest possible components and then replace the original natural. Therefore, one can even build a "new nature."

Through understanding multiverse philosophy, one can overcome part of the gap created by equity by applying the strategy. To be more precise, digital equity employs a multidimensional philosophy, and only by employing multiple types of policies corresponding to different dimensions, can one solve it completely. For example, one can provide a translation service (such as Google translate) for those whose mother tongue is not English – the most common web language. This goes some way to solving part of the problem. In actuality, schools, communities, resources, governments, and private cooperatives should work together to develop a citizenry capable of participating in the present information age which would settle the issue in a better manner. As further real evidence for the multiverse philosophy, this author will employ statistical data to depict the relationship between social, cultural, and psychological factors in the next paper. The three world's philosophy implies social theory for quantum society.

According to Wendt, 2005,[11] quantum consciousness theory allows for one to do three things:

1. Constitute social systems with wave functions which have a collective unconscious;
   To begin with, there is a significant role for consciousness in human behavior. Wendt suggests that the key lies in the collapse of one's wave function. This means when one interacts with the environment; it will provide a basic experience for a "stream" of consciousness. Then one's wave function corresponds to one's unconscious. To be more precise, when one is in a conscious state, one is not aware about his or her background knowledge and environment. Human beings do most of their thinking as described in the human computational model. One may further define collective unconscious as the unawareness in conscious about his or her background knowledge of an individual. Hence, for a social system to possess shared knowledge, it implies a kind of collective unconscious which performs functions (in social life) such as structuring action, providing memory, and engaging in computation. According to Wendt, these processes have a quantum like character. In such a case, the social systems behave as an effective quantum computer
2. Use quantum game theory to describe "intra-action" processes from collapsed wave functions

There are differences between the collapse of individual and collective wave functions in a unitary consciousness. Interaction between identities is different and can be interpreted as "inter-action," or more precisely, action between different minds. This changes the attributes of a given identity which emerges from interaction. The collective itself is chosen to have the outcomes under the effect of "internal measurement" (Matsuno, 2002). On the other hand, the collapse of collective wave in separate brains is mediated by individuals; this implies consciousness of "difference" is produced. Therefore, the classical concept of "inter"-action cannot adequately depict the full view of social life. This leads to what Karan Barad (2003) called "intra"-action about quantum replacement for solving the problem related to material reality. First, human beings are relating to their internal ("intra") selves where they are entangled at the individual's unconscious level. Second, at the conscious level, human beings can become individuated through their actions where distinct bodies mediate collective collapse. The intra-action leads to the social applications of quantum game theory. It emphasis that players are "quantum decision makers" (Zak, 2000) such that they have both indeterminate and entangled characters and schemes before action. Thus, it is easier for non-cooperative gamers to achieve under quantum rules than classical ones. In real life, people cooperate more according to quantum game theory. Form social systems with collective consciousnesses as super-organisms

3. One may consider super-organisms as the systems which have both the functional integration and purposiveness of organisms with their elements as biological individuals. Human societies and insect colonies are good examples. Indeed, collectives do not have the material body for consciousness. However, the body of an insect colony is a single material system which engages in collective cognition and decision-making. Panpsychism proposes that there are three forms of consciousness, sub-atomic particles, plants, and organisms. A "we-feeling," is precisely what a collective consciousness looks like. Some philosophers, such as Siewert, 2002, have suggested that

intentionality implies consciousness. In such a case, collective intentions instantiate a collective consciousness. Figure 3 shows how the society interplays between consciousness from a quantum perspective.

One can investigate further by looking at the quantum structures of cognitive and social science as described below (Aerts *et al.*, 2016):[12]

1. How knowledge is represented and how concept is categorized;
   After the analyzing the results of a cognitive test, there is a quantum-theoretic probabilistic model in Hilbert space which represents the collected data with variance to a set-theoretic Kolmogorovian model. The explanation for them being the assumption of dominant emergent reasoning and secondary logical reasoning. With the introduction of unitary operators in Hilbert space, one can further develop the mathematical aspects of such a quantum model. Aerts, 2016, shows that the quantum approaches can be generalized with Rosch's prototype theory.

2. The manner in which human decision-making is modeled;
   Moreira and Wichert modeled human decision-making with a quantum like Bayesian network to describe the paradoxes related to the Sure-Thing Principle on human judgments. It first reviewed the quantum similarity model in Hilbert space. Decision-making errors and preference reversal were also investigated using quantum decision theory. The notion of complementarity in human cognition is analyzed such that the usage in quantum physics is helpful in cognitive
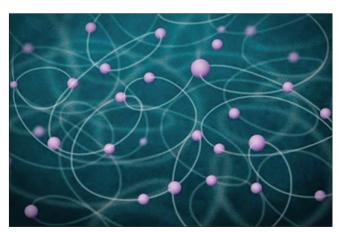

Figure 3: The above picture helps us to understand the interplay between society and consciousness from a quantum perspective

science. Alerts developed a quantum model based on the Schroder stair to describe human perception. There are a Bell's inequalities in cognitive tests which imply binary human unconscious choices and random outcomes at different times. All the aforementioned positions suggest that one can apply a theory of (non) conceptuality when analyzing a series of parallel mental architectures.

3. The way of applying advanced quantum-mathematical formalism into wider ranges of social science

Bisconti *et al*. recommended a Potts model for the node states in a social network. Indeed two types of potential functions can be employed to model financial information. Later, Chiara *et al*. investigated aspects of parallelism within the framework of quantum computation, cognition, and music. There will be a more in-depth explanation for all of the above concepts concerning quantum society in the next paper.

Remarks

Human beings are now living in a world with multiverse of cultures and nations. Globalization is defined as a process of interaction and integration between people, companies and government worldwide. To be more precise, it is mainly referring to the economic process of interaction and integration which is associated with social and cultural aspects. According to Obadia, 2010[13] globality pictures a "multiverse of cultures" that lives in a "genuine interculturality" (Van Barloewen 2003:28). Hence, globalization offers a "chance" for spiritual traditions of humankind to live in concord (Kung, 1991). On the other hand, globality always has its bloody marked signature with violence (or terrorism) around every region of our world (Obadia, 2010).[13] There are always pros and cons to the world's globalization. Firstly, free trade will reduce barriers such as tariffs, values, and taxes. Hence, there will be an economic growth which creates jobs and competitive companies together with lowers price for consumers. However, the biggest problem for developed countries will be: many jobs is transferring to lower cost countries. The situation will become even serious among middle class developed country's workers. It is because they usually have little leverage in the game and will become feared.

After a decade of globalization, the situation gradually changes to worst one. It is because an extreme globalization leads to an extreme case of poverty and inequality in the developed countries. People are thus extremely unsatisfactory with the present situation and the government. Therefore, they are willing to vote for "yes to leave" in the Brexit referendum, Donald Trumpet as the U.S. President as well as another Black swan event. This author thinks it is the early signal of a burst in the globalization.

Indeed, the most recent observable evidence of multiverse is about our universe's inflation. From the cosmic microwave background and the fluctuations of light, one may measure the curvature of our universe. The finally conclusion is that our universe is perfectly spatially flat. According to Siegel, there are infinite number of universe that one cannot observe presently. From the above, it is no doubt that both the cosmic inflation and quantum physic can explain the start of our universe and even implies the existence of multiverse. Therefore, this author concludes that although there is no direct observable evidence of multiverse but one may indirectly show that — human beings are actually living in a multiverse.

REFERENCES

1. Cuneo C. Globalized and Localized Digital Divides Along the Information Highway: A Fragile Synthesis Across Bridges, Ramps, Cloverleaves, and Ladders. Department of Sociology and Director, EvNet McMaster University. Saskatoon: University of Saskatchewan; 2002. Available from: https://artsandscience.usask.ca/sociology/documents/33rd%20Annual%20Sorokin%20Lecture.pdf.
2. Wilber K. Psychologia perennis: The spectrum of consciousness. Main Curr 1974;31:105-32. Available from: https://www.atpweb.org/jtparchive/trps-07-75-02-105.pdf
3. Tall D. Natural and Formal Infinities, Mathematics Education Research Centre. England: Institute of Education University of Warwick Coventry CV4 7AL; 2001.
4. Boolos GS, Burgess JP, Jeffrey RC. Computability and Logic. 5th ed. Cambridge: Cambridge University Press; 2007.
5. Heller M, Woodin WH. Infinity: New Research Frontiers. Cambridge: Cambridge University Press; 2011.
6. Lam KS. The philosophical implications of set theory in infinity distributed in aesthetics and philosophy art. Soc Sci Res 2016;8:2815293.
7. Lam KS. Cultural transformations in parents' handling of child ICT usage.pdf, Distributed. Innov Pract E J

2016;4:2856892.

8. Penrose R. The Road to Reality: A Complete Guide to the Laws of the Universe. London: Jonathan Cape; 2004.

9. Fuchs C. The Role of Income Inequality in a multivariate cross-national analysis of the digital divide. Soc Sci Comput Rev 2009;27:41-58.

10. Lau KG. Digital divide in education: A shift to ethical usage. (Thesis). Universi-ty of Hong Kong, Pokfulam, Hong Kong SAR; 2014. Available from: http://dx.doi.org/10.5353/th_b5328043

11. Wendt A. Social theory as Cartesian science: An auto-critique from a quantum perspective. Ohio: Ohio State University; 2004. Available from:Available from: https://www.humiliationstudies.org/documents/wendtautocritique.pdf.

12. Aerts D, Broekaert J, Sozzo A. Editorial: Quantum structures in cognitive and social science. Front Psychol 2016;7:577.

13. Obadia L. Globalization and the sociology of religion. In: The New Blackwell Companion to the Sociology of Religion. Ch. 21. Oxford: Wiley-Blackwell; 2010.