Use of Quantum Computers in Understanding Cultures and Global Business Successes

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Introduction

Grounded in 20 years of experience working with arcane instruments and esoteric machinery, this chapter investigates how algorithms like Shor's and equations like Schrödinger's are revolutionizing quantum computers, specifically in terms of a theoretical cultural dimensions matrix. Casati (2020) previously discussed Adiabatic and Quantum Gate computing, but in the present chapter's vision of the future, the "fidelity of quantum coding" as well as "representing entangled quantum states" defines how algorithms help to understand cultural clusters—specifically Anglo, Latin European, Southeast Asian (Schumacher, 1995, p. 2738). The author's vision is by no means scientific, by comparison with the approach a Physicist or Computer Scientist would take, however this study draws heavily on the existing quantum computing literature. This chapter's goal is to propose a cultural dimensions matrix equation, not to add to quantum computing theory, which physicists and computer scientists devote an entire career to. This chapter postulates that when equations

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like Schrödinger's are used in conjunction with Shor's proven algorithm, this will augment the understanding of human culture considerably. The first to propose a quantum computer was Richard P. Feynman in 1986 in *Quantum Mechanical Computers*, using a concept of adding all Kinetic and Potential Energy in a system and Feynman posits this would be used as a computer. While Shor's algorithm has the ability to de-cipher cryptography, the "Schrödinger equation […] gives the probability of finding the particle at a certain position"—and that particle's approximate location is then used by a quantum computer to eventually solve NP-Complete problems (Amanullah et al., 2017, p. 2). Peter Shor's algorithm in a very basic sense, determines prime factors of a high number more resourcefully than a classical computer. The "Schrödinger equation" is "used because it will allow to determine energy levels of quantum mechanical systems based on wave function," essentially this study proposes that there is a parallel between quantum wave function patterns and cultural data as will be derived using Eq. 5.3 further down (Amanullah et al., 2017, p. 2). It has been determined by many past studies that "superposition, entanglement, tunneling, and annealing" are used "to solve problems that" are impossible "in the life span of human beings," such as global business and cultural dilemmas (Singh & Singh, 2016, p. 1). The superposition of zeros and ones, entanglement of particles communicating from a distance, tunneling of a particle through multiple mountains of data, and annealing: i.e. finding the global minimum, are the tenets of a functional Qubit's existence inside of a quantum computer.

Information in a classical computer is in the form of Bytes and bits, where one Byte is equal to eight bits likewise, "data in a QuByte is in the form of eight Qubits" (Fortune, 2012, p. 13)—please refer to Fig. 5.1. Referring to Fig. 5.1, "in a machine with 2000 qubits, all 2^{2000} possible combinations of bit-values are represented at the same time" (Tichy, 2017, p. 2). Using superposition, entanglement, tunneling, and annealing, "we shall reach the atomic size for storing a single bit of information" (Benenti, & Strini, 2008, p. 1). Already, in laboratory settings, a single particle of Cesium has been isolated to create a single Qubit of information as we will see further on with Jau, Biedermann, and Deutsch (2018).

This chapter is about culture and global business. The author posits that in the future, algorithms like Shor's, using Schrödinger's equation with a specific focus on culture, will be able to solve for the most

Bytes	Byte (1/256 QuByte)	QuByte
KiloByte	2^{10} Bytes	4 QuBytes
MegaByte	2^{20} Bytes	4,096 QuBytes
GigaByte	2^{30} Bytes	4,194,304 QuBytes
TeraByte	2^{40} Bytes	4,294,967,296 QuBytes

Per the above table on Bytes and QuBytes "A classical Byte holds *one* of 256 numbers at any time, a QuByte holds *all* 256 numbers simultaneously" (Fortune, 2012, p. 10). This signifies that all three cluster: Southern Asia, Anglo, and Latin European could be studied by finding the approximate position of a Qubit using Schrödinger's equation much more efficiently when Quantum Computers become a reality, since high amounts of computing power will be necessary to analyze these clusters.
Illustration of a quantum bit in superposition. Adapted from Paradigm Shift in Management Philosophy, Future Challenges in Global Organizations (p.106), by N. M. Casati, 2020, Palgrave Macmillan. Adapted with permission

Fig. 5.1 Schrödinger's Equation Outputs Probability of Finding a Qubit in an Approximate Area

complex cultural and global business challenges of our time: namely financial, educational, geographical inequality—the list of cultural challenges is non-exhaustive.

In current global business, our international culture strives for "de facto equality" on the surface, but not always in depth (Casati, Kesavabhotla, & Cybulski, 2018, p. 223). The author sees the future with optimism, since "the Helper" entered this world as a Carpenter, at a specific space/time and even with the Helper's Earthly constraints/limitations, forever changed the world (Casati, 2020, p. 128). This is reminiscent of Pierre Teilhard de Chardin's "Noosphere," a culture dominated by consciousness (Schäfer, 2005, p. 20). A computer does not experience/feel culture nor business challenges, however, a traditional computer's equivalent of consciousness, the CMOS, never switches off, i.e. the latency on the computer's internal clock remains constant, because "quantum computing" uses a CMOS (Complementary Metal Oxide Semiconductor) called a "Cryo-CMOS circuit" (Patra et al., 2017, p. 309). A computer does not feel the need for culture. A computer does not feel need, in the sense defined by Maslow's hierarchy of needs.

This chapter is going to study culture and global business, specifically in the geographical areas of South Europe, Southeast Asia as well as a Cluster of English-speaking countries called Anglo (the Anglo cluster includes Australia, New Zealand, Canada, England, Ireland, South Africa, the United States). A theoretical cultural dimension matrix built on these cultural clusters, substituting clusters, for matrices, is seen in Eq. 5.3 further on. The Use of matrices, constants and variables, in the

Schrödinger equation, approximately locate a quantum bit in in a determined space (Qubit), as seen with Amanullah et al. (2017). Further down, we will see the following term: "a|1> + b|0>" which relates to "probability" and is written in these special brackets called Bra-Ket, representing a vector, a vector used to describe a Qubit (Rocha et al., 2005, p. 81). We can identify "Dirac notation by symbols |0> and |1>, respectively" then the "atomic ensemble is provided by a single Rydberg-dressed Cesium Qubit" (Jau et al., 2018, p. 1). A Cesium Qubit is not the only electron atom/ion/isotope in Mendeleev's periodic chart that can be used to form a Qubit, but the element inspired by Johannes Rydberg, Cesium, was chosen as illustrated in Jau et al. (2018). Apart from Cesium, which can get an analytic solution for an electron's wave function (Ψ), scientists may also use H, He+, Li2+, Be3+, C5+ or isotopes like carbon-12, silicon-28, silicon-30 for example. Quantum annealing, determining the global minimum of a function, led Jau et al. (2018) to choose a Rydberg-dressed Cesium Qubit instead of another element. Earlier in this paragraph the Dirac notation was studied, and in the next paragraph, Dirac notation will be further explained.

Dirac notation is another way to describe a vector pointing in a specific direction (using a coordinates matrix), and in complex business and/or cultural models, matrices are used to calculate systems of equations for international business. Equation Eq. 5.3 uses vectors in an expression (i.e. in Bra-Ket notation), and these constants/variables inserted into a quantum computer represent a theoretical cultural dimension matrix, the result being a better understanding of human culture as a whole. Such an equation plugged into a quantum computer begs the question: is it *conscious*?. Due to globalization, humans will become accustomed to being more conscious of the noosphere, not just superficially conscious, but dominated by conscious of one another's culture and international business needs.

The matrices, constants and variables in Schrödinger equation use Dirac's Bra-Ket notation for quantum computer communications, as we will see later on (Lervåg, 2010). In this way, it is possible to illustrate a "state vector $|\Psi\rangle$, also called a ket" which is a single column matrix and another state "$\langle\Psi|$, called a bra" which is a single row matrix (Lervåg, 2010, p. 16). The use of Dirac notation for Schrödinger's equation for a free particle in one dimension in this chapter is only a mathematical tool to pose a mathematical problem on culture and global business, and as

this chapter proposes, a theoretical cultural dimensions matrix, locating information in Dirac's Bra-Ket.

Schrödinger's equation for a free particle in one dimension is a highly complex expression: "iℏ $(\partial\Psi)$ / (∂t) = $-(h^2/2m)$ $(\partial^2\Psi/\partial x^2)$ + V(x) Ψ)" which is illustrated as Eq. 5.1 (Lervåg, 2010, p. 20). This expression can be further derived to "$(-\hbar^2/2m)\nabla^2$" which is illustrated as Eq. 5.2 below or explicitly stated as Kinetic Energy (Lervåg, 2010, p. 34). Vector $|\psi\rangle$ (wave function), if viewed in a global business culture light, will be the Dependent Variable cultural clusters—the Independent Variables (Lervåg, 2010, p. 20). It will be extremely helpful to use Schrödinger's equation for a free particle (Eq. 5.1) to better understand cultural clusters outlined by House, Hanges, Javidan, Dorfman, and Gupta (2004). When each term is derived using annealing (finding the global minimum for a set of data), Eq. 5.1 is derived to Eq. 5.2:

Eq. 5.3 attempts to use Schrödinger's equation for a free particle (Eq. 5.1) as a template for a future quantum computer running specific software that studies cultural clusters.

$$i\hbar(\partial\psi)/(\partial t) = -\left(h^2/2m\right)\left(\partial^2\psi/\partial x^2\right) + V(x)\psi)'' \tag{5.1}$$

$$''\left(-\hbar^2/2m\right)\nabla^{2''} \text{or explicitly:Kinetic Energy} \tag{5.2}$$

Ψ is an electron's wave function.

∇ is an elliptical operator, the nabla or the Laplacian operator (non-numerical).

∂ Is Delta and stands for variation.

h Plank's constant equal to "6.6×10^{-34} Joule-second" (Lerviåg, 2010, p. 15). This constant's energy in Joules is in relation to its frequency in Hertz.

i is universally known as an Imaginary unit equal to Square Root of (-1).

x is unknown (x).

m is mass (m) of a particle.

$\hbar$ is Planck's reduced constant equal to "1.054×10^{-34} Joule-second" (Iffländer, 2001, p. 325). This constant's energy in Joules is in relation to its frequency in Hertz.

t stands for time in relation to an electron's wave function (Ψ),

V stands for an arbitrary potential energy.

In light of equations 5.1 and 5.2, a hypothesis for a proven cultural dimensions matrix would be necessary to test a theoretical cultural dimensions matrix in global business data using Schrödinger's equation. A proposal for a null hypothesis in a quantum computer experiment would be to ask if there is no significant difference between a quantum computer running Schrödinger's equation and a quantum computer running a future algorithm for a cultural inventory of that same person (please see Eq. 5.3). Essentially, it would be interesting to know if a quantum computer running a cultural inventory would actually work. Schrödinger's equation in Fig. 5.1 uses probabilities to approximately use a margin of error, to find the position of one particle, a Cesium Qubit, and future quantum computers would be able to study Culture more efficiently if a quantum computer specialized in culture inventories works. A quantum computer will theoretically be able to quickly build a cultural inventory for a single person out of 7 billion; each individual would become a one-person global business with their own brand of culture (represented by a Qubit and in the future a QuByte of information). Each individual's Qubit (and in the future a QuByte) would store cultural dimensions for the 7 billion people on Earth (which is hyperbole, because not everyone own a computer) composed of "Uncertainty Avoidance," but also "Assertiveness," and in addition "Gender Differentiation" with "Performance Orientation" as well as "Humane Orientation" and "In-Group Collectivism" also "Institutional Collectivism" as well as "Power Distance" and finally "Future Orientation" (House et al., 2004, p. 193). With the advent of the internet, every single individual (who could be represented by a Qubit and in the future a QuByte of information) is a potential individual global business and their personal brand of culture brings a different Qubit into the global culture.

Figure 5.1, based on Casati (2020), shown in Figure 6.1 on page 106 indicates that: "in a machine with 2,000 qubits, all 2^{2000} possible combinations of bit-values are represented at the same time" (Tichy, 2017, p. 2). China is not included in this chapter because it is not part of the southeast Asia cluster, but instead part of the Confucian Asian cluster. Thousands of years ago, "in the mid-7th millennium BCE–associated with migrants from Anatolia," people "settled in the Southeast before spreading throughout Europe" (Mathieson et al., 2018, p. 1). Millennia ago, "descendants of the Yamnaya, [...] spread across the Eurasian Steppe beginning around 3300 BCE" (Narasimhan et al., 2019,

p. 3). Using a modern-day application called Flightradar24, we can observe upwards of 100,000 daily flights of approximately one hundred migrants per plane each day flying worldwide. Still, according to Flightradar24, in a historical turn of events instead of 100,000 daily flightes, this number dwindled down to 38,000 daily flights during the COVID-19 pandemic. Computers are the new history books and planes are the new boats. In the past, migrations took decades, but now with air travel, quantum computing will be necessary to track migration of individuals (with their very own Qubit and in the future a QuByte of information) susceptible of spreading a pandemic. Quantum molecular computing has been applied in laboratories to produce chemistry-based molecule-sized synthetic chemicals like Remdesevir- a Corona virus treatments using "Lee Cronin's Chemputer" (Casati et al., 2018).

In this chapter, it is assumed that the "promise of quantum computers is that certain computational tasks might be executed exponentially faster on a quantum processor than on a classical processor" (Arute et al., 2019, p. 1). This means the race is on for quantum supremacy as seen in the Quantum Computing Report between all of the corporations in this intellectual property space. This is a very promising field of research as shown by the "Quantum Computing Report" while "over 90 global universities and over 20 publicly traded companies have a quantum computer science division, which include Yale, MIT, Alibaba, AT&T, Google, HP, IBM, Intel, Microsoft, and Toshiba who also have a quantum computer division" and are all heavily involved in advancing towards building a fully functional quantum computer (Casati, 2020).

Some experts in the field include: Northwestern Medicine Dr. Clyde Yancy, MD, who spoke about Artificial Intelligence in cardiovascular disease research, Northwestern Medicine Dr. Abel Kho, MD, MS, Director of the Center for Health Information Partnerships and the Institute for Augmented Intelligence in Medicine, who has a multidisciplinary approach. In the quantum finance and cultural expertise space, there are many experts such as Stefan Woerner with IBM, Ning Shen, with JP Morgan Chase, Physicist Roman Orus, who explains commodities, Goldman Sachs Jeremy Glick, Matt Johnson with QC Ware, Kees Oosterlee with Centrum Wiskunde & Informatica, Scott Aaronson, Andrea Rocchetto, Travis Humble, David Deutsch, etc.

The massive amount of data storage and processing power required to run just one of the above named quantum computing competitors is

unfathomable, and being a global manager overseeing this cultural diversity is unquantifiable. The race for global quantum business supremacy has truly begun. There is a true possibility that the winner of this competition will control the international business culture-scape, and the probability of this competition being won by a Latin/Anglo cluster country is relatively high, since English is the main language of the internet. The Anglo cluster should not fall asleep on its superpower laurels, because the tide could change. Advances in the quantum supremacy business also needs a large population to create a need for this market and the Southeast Asia Cluster has a population of 1.5 billion. All it takes is "one individual amongst many, who has a revolutionary cost-cutting idea that can change the world" (Casati et al., 2018, p. 213).

If quantum computers are as efficient as the litterature suspects they will be, it will be possible to offer informatics availablities to billions, whereas today, the internet remains fragile, due to its heavy dependence on processor cooling mechanisms and high needs in electrical energy. Since the advent of super computers, we have seen huge progress in scalability of research samples. For a scale of comparison, the Yamnaya South and Central Asia study by Narasimhan et al. (2019) was founded on samples between two hundred and five hundred migrants, numbers that are dwarfed by the amount of daily high-tech international commuters in this modern age. The study by House et al. (2004) studied 17,000 middle managers, but still low compared to the 100,000 flights per day representing intercultural exchange between migrants. These hundreds of thousands of cultural exchanges are recorded by modern-day informatics in the form of qualitative data like emails. Companies like "OpenAI" and "Neuralink" are trying to streamline such information (Casati et al., 2018, p. 239). Previous research used traditional research methods over a long-term study like the "Harvard Grant Study" which lasted nearly 80 years, but building a research project with massive data sets using a real-time supercomputer (or quantum computer) would be more efficient, maybe obtaining valid results faster as well (Casati et al., 2018, p. 206). The coexistence of multiple data sets representing multiple cultures on a global scale would truly illustrate the meaning of the term Ubuntu, which means "I am because we are" in South African, an Anglo cluster economy's dialect. There is definitely a "need for leaders with global perspective and intercultural competence to meet these growing challenges and opportunities" all the while being technologically savvy (Irving, 2010, p. 2). It is worthwhile noting that "while cross-cultural interactions have been taking place for thousands of years, it is only within recent decades and

the past century that the societies of the world have become more accessible" (Irving, 2010, p. 2). It has been observed as well that there is a "rise of globalization, and therefore there is a need for leaders with global perspective and intercultural competence to meet these growing challenges and opportunities" (Irving, 2010, p. 2).

Quantum computers might help with these challenges in the far off future.

Anglo Cluster Background

Migrating leadership from the Anglo cluster enriches other cultures with a "combination of charismatic inspiration and a participative style" (Ashkanasy, Trevor-Roberts, & Earnshaw, 2002, p. 1). The Anglo cluster has specificities such as "individualism" and "performance orientation" (Ashkanasy et al., 2002, p. 1). This particular cluster is very "male dominated" (Ashkanasy et al., 2002, p. 15). The specificity of the Anglo cluster (Australia, New Zealand, Canada, England, Ireland, South Africa, the United States) is that the citizens from this area of the world are goal oriented and English speaking (House et al., 2004). Because of these two characteristics, the Anglo cluster with their dominating nature, originating from their goal orientation, and business acumen, was able to thrive internationally. Due to a unified language (English), the Anglo cluster was able to unilaterally concentrate power and encourage a great number of Anglo individuals to amass great wealth everywhere they went into the world. This power is in no little part due to the fact that "the world's only superpower," (while other cultures failed to reach this number one spot), was able to be in a position to lead "politics for more than two centuries" (Ashkanasy et al., 2002, p. 3).

The fact that the United States is a superpower is only a piece of the puzzle. The other pieces being that there is a vital necessity in the "understanding of the cultural basis of the Anglo cluster countries" and this is a de facto "pre-requisite for understanding international relations and trade around the world" (Ashkanasy et al., 2002, p. 3). Being English speaking is not the only characteristic of being part of the Anglo cluster, since there are English-speaking nations which are not in the Anglo cluster, such as "Zimbabwe, Guyana and the Caribbean nations, Fiji, Malta" which may be due to cultural differences (Ashkanasy et al., 2002, p. 4). To belong to the Anglo Cluster is to have a certain behavior, which is not universally accepted. The globe is now in a struggle against industrialization,

which is the source of inequality, "whether it be equal opportunity" we are fighting for, or another noble cause (Casati et al., 2018, p. 223). An ideal political system would take into account "moral judgement" (this has an economic cost, balanced against a spiritual benefit) (Casati, 2020, p. 128).

Per our observations, the Anglo cluster is not true to the definition of democracy (demos means "people" and kratos means "power") or all-inclusive since the "Anglo cluster countries, whose population of 437 million is only 7% of the world's population, accounts for 40% of the world's Gross National Product, or 12 trillion dollars" (Ashkanasy et al., 2002). Today the world Gross National Product is closer to $89 trillion. Furthermore, America, "whose GDP is US$9 trillion, dominates the economic landscape of this cluster" has an important role in promoting economic cost containment, over moral judgment, and still has to remain loyal to the American Founding Father's values (Ashkanasy et al., 2002, p. 5). If the United States is taken on its own within the Anglo cluster its weight is "75% of the cluster's GDP, and 30% of the world's economy" (Ashkanasy et al., 2002, p. 5). Other Anglo countries also have heavy influence and are "high ranking" measured "in terms of GNP per person" (Ashkanasy et al., 2002, p. 5). In this respect, "the Anglo countries account for 25% of world trade, 34% of manufacturing added value, and 21% of agricultural added value" (Ashkanasy et al., 2002, p. 5). Overall, the Anglo cluster represents a large portion of "all of the countries" that "score highly on the Human Development Index, indicating that their populations share a high standard of living and quality of life" (Ashkanasy et al., 2002, p. 5). It is worth noting that "the Anglo countries represent the English-speaking developed world," and is "arguably the most powerful and economically advanced group the world has ever seen" (Ashkanasy et al., 2002, p. 5). The Anglo cluster represents the "legacy of the once powerful British Empire" (Ashkanasy et al., 2002, p. 5). In the following section, we discuss the historical foundations of the Anglo culture.

In retrospect, the US "still bears the idealism of its Eighteenth century settlers" while simultaneously being a "democratic system modeled on French liberalism and equity" (Ashkanasy et al., 2002, p. 6). This situation is hardly unique, since the "United States, English Canadian and Dutch South African colonialists were escaping feudal Europe" as well (Ashkanasy et al., 2002, p. 6). Historically, it can be observed that the "Angeln from Germany and Denmark, the Saxons from Germany, and

groups from the Netherlands, Denmark, France, Central Germany and Rome" have a direct influence on England and the "local Britonic or Celtic culture" (Ashkanasy et al., 2002, p. 7).

In the GLOBE study, the Anglo cluster is average except for "power distance" and "gender egalitarianism" (House et al., 2004, p. 193). Driving toward a dichotomy of either leaning in the direction of a high power distance, while scoring low on equalitarianism is a relic of the British empire, while they exerted power from across the ocean. At the same time, the founding fathers of the USA leaned toward equal rights for all. Nevertheless, the Anglo cluster's strengths lie in being able to build something after the fall of their hegemony and that is why performance improvement in the Anglo cluster scores very high, while family, empathy, and other soft skills score relatively lower.

Philosophically speaking it is important, even if individualistic, to try to score as high as possible in team values. Team players who work independently are sought after. Participation, openness to others, scoring lower on self-interest, the Anglo cluster's leadership style is legalistic, not authoritarian. Anglo leaders are very assertive and self-assured (scoring high in these areas). Performance, excellence, altruism, and continuous improvement are skills which are rewarded as well. Next, we will study the Latin European Cluster.

Latin European Cluster

In regard to the "Latin European cluster" it "consists of the regions influenced by Roman culture" (House et al., 2004, p. 184). At that time, "in Northern Europe, the Germanic model was distinguished by co-management or codetermination" (House et al., 2004, p. 182). In this society, "responsibilities were clearly and precisely defined in a military way," leaving not very much "scope for individuals to use personal discretion, as is frequently the case in Latin European countries" (House et al., 2004, p. 182). In effect, the "Nordic model shares democratic and participatory spirit with the Germanic model, but is also highly egalitarian" (House et al., 2004, p. 182). It has been observed that "The Latin European model encourages people to tightly control information, secrets, and power and also endorse hierarchy" (House et al., 2004, p. 182). In fact, "Latin American and Latin European countries were closely related to each other as were the Germanic and Nordic countries" (House et al., 2004, p. 182). Furthermore, "Empirical studies suggest

that religion-language, geography, and ethnicity, and work-related values and attitudes are relevant factors in the clustering of societies" (House et al., 2004, p. 183). In other words, "economic development may also be associated with significant changes in the society's work culture" and has had the effect of separating "societies that do not have a similar level of economic development" (House et al., 2004, p. 183). It would be logical, however, that "societies that share similar religion-language, geography, and ethnicity, tend to look alike in regards to fundamental characteristics" (House et al., 2004, p. 183). As can be observed in many European countries, there are a great variety of cultures within a same country: German, "French and Flemish in Belgium; French, German, and Italian in Switzerland" but also Romansh (House et al., 2004, p. 183). The Latin cluster has approximately "170 million" people and has a "Gross National Income" that is around "$3.5 trillion" (Jesuino, 2002, p. 1). The Latin cluster is average in all respects except for "power distance" which is "over 5" as well as performance orientation and a "paternalistic" tradition (Jesuino, 2002, p. 1).

This paternalistic viewpoint is probably connected to religious traditions held by this continent. In fact, the "Draft Treaty establishing a Constitution for Europe after a long debate did not include a reference to God nor to Christian values in its Preamble" which might have come as a surprise due to the fact that there is an age-old Christian tradition in Europe and the widespread concept of laicism only emerged in the past few centuries (Cvijic & Zucca, 2004, p. 739). This is different than the Anglo country of the United States, which officially mentions God's name. While there is this difference between the Anglo and the Latin clusters, the Latin cluster shares a common language root, which is Latin. The Latin cluster shares a common root in the Latin language. For example, in Spanish, the word for one is "uno" and in Italian it is also "uno," in French it is "un," and in Portuguese it is "um" (Fortson, 2011, p. 2).

SOUTHEAST ASIA CLUSTER

Throughout history, "South East Asia has played a major role in the world economy. It has supplied key raw materials, provided markets for developed world goods, received investment and, most recently, multinational manufacturing" (Dixon, 1991, p. 1). The place in the global market of this cluster really started during the twentieth century (eventhough it is well documented that trading between Europe and Southeast Asia is

an age-old tradition). In this area of Southeast Asia, nearly "1.5 billion people live on a total landmass of close to 3 million square miles" (Gupta, Surie, Javidan, & Chhokar, 2002, p. 17). Of these countries in Southeast Asia, "India is the most populous country with a population of about 1 billion people" (Gupta et al., 2002, p. 17). In contrast, "Malaysia is the smallest with a population of 22 million" (Gupta et al., 2002, p. 17). In economic terms, these nations "generate a collective gross domestic product of almost U.S.$1trillion" (Gupta et al., 2002, p. 17). This sum of money represents a "very small proportion, approximately, 3% of the world's economy" (Gupta et al., 2002, p. 17). This is quite unexpected, since this one "cluster accounts for 24% of the world population" (Gupta et al., 2002, p. 17). This gap between the cosmic size of this population and its relative modesty in economic terms can be measured in "GNP per capita" and "purchasing power parity" which is "below U.S. $3000" (Gupta et al., 2002, p. 17). In contrast, the country of "Malaysia with a PPP GNP per capita of over U.S. $8000" has a higher Purchasing Power Parity (PPP) GNP per capita than U.S. $3000 and is much better off (Gupta et al., 2002, p. 17).

Archeologically speaking, "radioactive dating" of "materials indicates continuous development of the civilization of the greater Indus Valley," which spans from "eastern Iran," to "southeastern Turkmenistan," including "Baluchistan, Afghanistan, Pakistan," and finally, "western India," dates back to at least "5000 B.C" (Gupta et al., 2002, p. 17). A significant historical event in the region includes the "Akkadians from Arabia led by King Sargon" around the second millennium Before Christ (Gupta et al., 2002, p. 17). Thousands of years later, "as a result of the building of the Great Wall in China" tradespeople concentrated their craft toward the West after the east closed off (Gupta et al., 2002, p. 19). Later on, the fall of the "Kushans and the Roman Empire" led to a disintegration of the "northern trade route in 5th century A.D." and therefore, "Arab traders focused on south India and southeast Asia" (Gupta et al., 2002, p. 19). A few hundred years later, close to the first millennium, "Islamic Arabs under Subuktagin defeated the Hindu King Jaya Pala of Afghanistan" which meant that "by the late 13th century, they set up the Islamic state of the Sultanate of Malacca in Malaysia" (Gupta et al., 2002, p. 19).

Anglo Cluster Versus Latin Cluster Versus Southeast Asia Cluster

When bringing different cultures together into a multinational, for example, "to mitigate the negative effects of intra-group conflict" it has been stipulated that "leadership style should fit the type of disagreement (task versus relational)" (Curşeu, 2011, p. 1). The Anglo cluster is more charismatic than the other two clusters studied in this chapter, which are the Latin Europeans (Southern Europe) and the Southern Asia clusters (House et al., 2004).

All three clusters are equal in terms of "team-work," which makes it easier for managers from these clusters to "negotiate" (House et al., 2004, p. 193). In terms of being "participative," all clusters also score equally "mid-range," but the "Anglo cluster" tends to score "very high" in this area (House et al., 2004, p. 193). The next three dimensions are "humane, autonomous and self-protective," and all three clusters score higher on "humane orientation" than on "autonomy" for the Anglo Cluster specifically and "self-protectiveness," however, the "Latin cluster" is "less autonomous and humane," while Anglo are "less self-protective" (House et al., 2004, p. 193). The "Anglo cluster" and "Latin cluster" are both "moderate" on "uncertainty avoidance," however, the "Latin Cluster" is more "bureaucratic" (House et al., 2004, p. 193).

The "Anglo cluster" is "sincere, enthusiastic, compassionate, self-sacrificial, sensitive, self-effacing, habitual and status conscious" (House et al., 2004, p. 193). The Latin cluster is more centered around "conflict avoidance" (House et al., 2004, p. 193). The Latin cluster and Anglo cluster will experience work life differently. While Anglo people have vision in the Anglo cluster setting, this speaks volumes to the success of Anglo corporations, it is at the antithesis of the Latin cluster leader, who sees the definition of the Anglo word 'vision' as insubordination, if in conflict with the leader. Staying the absolute leader in the Latin cluster is more important than the perceived benefit of positive feedback, accepting constructive criticism from peers, that makes the Anglo cluster globally successful. This contructive criticism will transpire into the dynamics of the team so that interactions will be more personable. While performance orientation in the Anglo cluster is very important, it comes second in the Latin cluster. It has been noted that globalization will not spare any economy, even the strongest, therefore performance orientation should not be taken for granted (Javidan, Dorfman, De Luque, & House, 2006).

Quantum Computing Parallel
to Neuroscience and Culture

To analyze culture, we propose to derive an equation based on the following equation: "$i\hbar \, (\partial\Psi) \, /(\partial t) = -(h^2/2m) \, (\partial^2\Psi/\partial x^2) + V(x)\Psi$" (Lervåg, 2010, p. 20). As a reminder, ψ is an analytic solution for an electron's wave function and this solution is in the form of a probability. The proposed equation 5.3 below with the Dependent Variable vector $|\psi\rangle$ (wave function) balances against the 9 G.L.O.B.E cultural dimensions (Independent Variables): "Uncertainty Avoidance," (Ua) but also "Assertiveness," (As) and in addition "Gender Differentiation" (Gd) with "Performance Orientation" (Po) as well as "In-Group Collectivism" (IgC) but also "Institutional Collectivism" (Ic) as well as "Power Distance" (Pd) and "Future Orientation" (Fo) cultures and finally, humane orientation (Ho) (House et al., 2004, p. 193). This equation applies for the three cultures studied (South Europe, Southeast Asia as well as a Cluster of English-speaking countries called Anglo). Future applications in business could be imagined for future quantum computers. If Eq. 5.3 were derived, $|\psi\rangle$ would be a vector which includes the 9 G.L.O.B.E cultural dimensions in a wave function:

$$|\psi\rangle = |Ua\rangle + |As\rangle + |Gd\rangle + |Po\rangle + |Ho\rangle + |IgC\rangle + |Ic\rangle + |Pd\rangle + |Fo\rangle$$
(5.3)

Technological advances will depend on the future of technology, and in the past it was said that: "the internet age is uncertain with ICANN" which stands for the Internet Corporation for Assigned Names and Numbers "giving up net neutrality" (Casati et al., 2018, p. 205). The ICANN network neutreality discussion is still very relevant today. According to a January 22, 2020 public letter from Bill Woodcock, ICANN is having financial troubles and considering decreasing the level of privacy of .ORG suffixes. ICANN has a very significant role which the the Information Technology community will probably never move away from, even with the advent of Quantum Computers. ICANN controls the domain name system (DNS) and this means that if ICANN were to fail financially, all of the global domain name addresses the ICANN controls, would no longer be automatically linked to their Internet Protocol addresses: a series of numbers impossible to memorize would be the only way to access a webpage. If the internet were seen as a

giga-cerebral-center, full of synapses, culturally speaking on a neurological level, "in the unstable hierarchy setting" there would be a need for, "additional regions" which would be "recruited related to emotional processing (amygdala), social cognition (medial prefrontal cortex), and behavioral readiness," and this would affect the business world directly (Zink et al., 2008, p. 1).

Casati (2020) studied computer algorithms versus human protocols and showed parallels between quantum computers, human organizations culture and business. The experiments "demonstrating that Rhesus monkeys represent the numbers 1-9 on an ordinal scale" are proof of bio-informatics parallels demonstrating that there are innate cultural and business abilities in living organisms other than Human Beings (Rocha, da Rocha, Massad, & Pereira, 2005, p. 11). Human beings are therefore not the only species with a knowledge of the quantitative managment of everyday life and culture. It can be extrapolated from "Neuroscience" that demonstrating the existence of, "inherited or innate cognitive modules for language, arithmetic, biology, physics, and music" can have a direct impact on business and cultural norms, not to mention quantum computing applications (Rocha et al., 2005, p. 2). In a very real cultural and business sense, "this knowledge is expected to dramatically influence the way we approach modern education in the strongly competitive technological society of the present day" (Rocha et al., 2005, p. 2). It has been shown through experimentation that for better business and cultural outcomes, "the larger the brain the greater its owner's capacity to adapt and survive," which explains why humans, no matter the culture, have an advantage over animals and computers (Rocha et al., 2005, p. 9). Rocha et al. (2005) created an original study, which could mean that "Mathematicians could discover an entirely new field, not only for applications," but also bring in a "new wave of discoveries about brain function" (Rocha et al., 2005, p. 1). Evidently, there will be a need for "quantum computation" and this "will profit from understanding that quantum information processing is a technique discovered by natural selection some millions of year ago" which has brought us the culture and business world we live in today (Rocha et al., 2005, p. 3). If this path of research persists, it will make a "strong case for the hope of creating artificial quantum computers in the near future" advancing culture and business (Rocha et al., 2005, p. 3). The natural conclusion to this train of thought is that there will be an "understanding of the brain

as a quantum processing intelligent system" helping advance business and culture perogatives (Rocha et al., 2005, p. 3).

In the future, this "evolutionary strategy to avoid computational breakdown is proposed here wherein the brain employs quantum computation" and building quantum computers according to Rocha et al. (2005) is clearly part of neuroscience research, which will serve culture and businesses (Rocha et al., 2005, p. 3). Interestingly, there are "properties of quantum systems" as demonstrated by Rocha et al. (2005), which are in a "microstate superposition and entanglement" and due to the conclusions of this research, has a direct application to culture and business computations (Rocha et al., 2005, p. 80). Essentially, the state of "superposition is the coexistence of different microstate values of the same particle at the same time" which is similar to different cultures and businesses coexisting and yet striving to communicate, but sometimes failing, in other words "superposed states are reduced to a single state called decoherence" or failing to agree (Rocha et al., 2005, p. 80). Furthermore, the state of "entanglement is a strong microstate correlation between spatially separated particles" and it is similar to two people in separate cultures studying a business problem from two different points of view and yet have an implicit agreement (Rocha et al., 2005, pp. 80–81). It has been posited in the literature that "entangled particles behave as a single entity, despite their distributed spatial locations"—again this is the same as two people in separate cultures in the same business, this being similar to the term superposition—multitasking and entanglement, two colleagues working with social distancing, as one (Rocha et al., 2005, p. 81). For a qubit, the superposition of "$|0>$" and "$|1>$" or the simultaneous existence in both states of "$|0>$" and "$|1>$" is actually possible (Rocha et al., 2005, p. 81). This is why "quantum computation is a research area devoted to experimentally manipulating the superposition and entanglement," as well as tunneling (like going in a tunnel through multiple hills of data) to annealing (finding the global minimum) and finding "algorithms that could be implemented in such quantum systems" (Rocha et al., 2005, p. 81).

Thinking in terms of first principles, building a quantum computer, with the prime design to allow the user to know where a particle is theoretically, using probabilities, in space at a definite time, and to extract information from this observation would be a giant step for mankind. Theoretical computer science using neuroscientific, cultural dimensions and the "Schrödinger equation" because it could "allow to determine

energy levels of quantum mechanical systems based on wave functions" to then give "the probability of finding the particle at a certain position" would help advance cultural understanding (Amanullah et al., 2017, p. 2). This equation will be discussed further on.

Quantum Algorithm Equation

The goal of this chapter is to discuss the theory, not the application of inserting cultural dimensions into the following Schrödinger algorithm matrices, variables, and constants. Cultural dimensions according to the GLOBE study are: "Uncertainty Avoidance," but also "Assertiveness," and in addition "Gender Differentiation" with "Performance Orientation" as well as "Humane Orientation" and "In-Group Collectivism" also "Institutional Collectivism" as well as "Power Distance" and finally "Future Orientation" (House et al., 2004, p. 193). This would require powerful computing, which is the limitation of this chapter because these computers do not exist yet, however, the theoretical algorithms are in the inset above explaining Eqs. 5.1 and 5.2.

When analyzing "amplitudes" represented by "a" and "b" the "measurement on the system a|1> + b|0> results" into a "Qubit making a probabilistic decision" with the output "$|a|^2$," leaving the result of the "Qubit" as "|0>" leading to the "complementary probability $|b|^2$" equal to the output "|1>" (Rocha et al., 2005, p. 81). The term a|0> + b|1> was previously proposed by Peter Shor, an author mentioned earlier, in 2000 in his manuscript *Quantum Information Theory: Results and Open Problems*. This could be translated to a cultural dilemma an impossible business problem, such as where to spend monetary resources, on natural disasters or food shortages, and this means choosing the lesser of two evils: The solution is an "NP-Hard problem," an unsolvable problem which needs the assistance of a quantum computer (Casati, 2020, p. 124). Until we do have usable quantum computers, the existing parallel branch of supercomputers use stratification to account for confounding variables (the most common error is a Type 1 error where the null hypothesis is not accepted even though it should have been validated). With quantum computers it will be possible to tackle the most difficult business and culture problems of our time.

Throughout the literature, "most experimental results obtained with quantum computing are limited to a few particles" which is equivalent to a small "number of Qubits" and studying these Qubits could help

further research on the neurological pathways of business and cultural challenges as seen above (Rocha et al., 2005, p. 81). If experimental science were to ever mimic "brain function" this would surely look like the "operations of a QC" (quantum computer) and help with understanding culture and business leaders (Rocha et al., 2005, p. 81). It has been argued that machines could perform task we would not expect them to, but what these tasks are, we are still unaware of, however the performance of these tasks would advance our understanding of global cultural intelligence, without giving up human control, like for example what happened with corporate personhood, as we will see later on (Nilsson, 1971). The Turing test has led to many breakthroughs trying to see how machines process data and this is why "high-fidelity gate operations on Qubits is critical for quantum information processing" otherwise without high-fidelity, approximating the position of a particle is difficult, meaning understanding culture and business reliably with a fully functional future quantum computer is also compromised (Abdelhafez et al., 2020, p. 1). In addition, there is "a host of research over the last decades" that "has pursued optimal strategies to realize Qubit gates" (Abdelhafez et al., 2020, p. 1). This has led to an "open system with less computational cost" while using "stochastic gradient descent," which in other words mean an initially random approach improved with further approximations (Abdelhafez et al., 2020, p. 7). There is always a question of "fidelity of quantum coding and about representing entangled quantum states" and there is indeed a lack of data overlap, hence non-verifiability that the quantum calculation is reproducible (Schumacher, 1995, p. 2738). In science, data reproducibility is one of the cornerstones to understanding business as well as cultural problems and scenarios.

Some scientists are using Information Science for information partnerships such as the Center for Health Information Partnership (CHIP) to better our culture, and our society, as well as, our business needs, but not in the sense of Maslow's Hierarchy of needs, more so in an altruistic sense. An otherwise necessary lesson to apply would be to not idolize self-actualization, Maslow's highest ranking need, which can be a cultural risk in a business centric world. Consumerism comes from idolization. Idolizing self-actualization is illustrated in the image of Orson Welles' Rosebud: a vain businessman, who may have mastered consumerism, but not culture, accumulated hundreds of billions but still yearns for the memory of a sled. Charles Foster Kane sold this sled so well to himself

that the fabric that makes him human, our culture, has all but disappeared. It is better to focus on cultural norms such as: hope, charity, fortitude, justice, prudence, temperance and to have faith in a brighter future than to gaslight others.

Robots live by Asimov's three laws of robotics, but it would be a stretch to call them law abiding citizens. By becoming the best like Huawei, Baidu, Alibaba, Tencent, Xiaomi, for example, corporation are becoming magnanimous and humans will end up without realizing it, inside a butterfly effect pattern of consumerism.

AI as a service (AIaaS) and Quantum as a service (QaaS) are currently very real options, possible future paths offering computer facilities as an on demand service, but should not spill into excesses such as a Pygmalion-Leader-with-a-Personal-Brand (PLwaPB) who like employees who follow the Employee's Personal-Brand-as-a-Service (EPBaaS) ideals. What this means is that Pygmalion, who fell in love with his own creation, could be compared to a manager who very easily hires (falls in love with) a specific type of employee who is mostly good at selling their 'brand.' Brands are heavily dependent on technology. The computing capacity of quantum computers exceeds conventional CPUs by many millions of instructions per second (MIPS). In our society, it has become important to evaluate leadership like a person in Plato's cave: you cannot see the 'whole picture' of anyone. We can only see the shadows on the wall. We can only see business units and miss the cultural aspect. Empirical evidence collected by employees on management suggests we only see the shadows because cultural dealings are shrouded in obscurity and obfuscated from view. Algorithms can reinforce thought processes, like what we think we understand in the shadows of Plato's cave, that which we assumed to be correct. If thought processes are positive, then algorithms will feed back positive culture and if thought processes have a negative origin, they will feed back an unpleasant culture. A Demagogues' thoughts are most often negative business culture ideas. These ideas appeal to our worst instincts and are anti-democracy (demos means "people" and kratos means "power"). Conspiracy theories are going mainstream thanks to the internet and this is due to the lack of discrimination current business algorithms have. Information filtering algorithms are currently written by humans, but if information filtering algorithms were written by quantum computers, the output would be a different culture, not necessarily a better one. It is difficult to know what "filters" quantum computers have within them at the most basic quantum level of global business culture.

A live quantum computer will probably exist one day, but a parallel branch at Argonne's National Laboratory, Wu et al. (2019), is using a Theta supercomputer, which could be useful as a double-blind test to see if a quantum computer in the future is reliable or needs recalibration. It can be posited that is possible to "leverage data compression to reduce memory requirements, trading computation time and fidelity for memory space" and hopefully understand culture and business better (Wu et al., 2019, p. 1). While "experiments show that" the one proposed "approach reduces the memory requirement" when reproducing the "61-Qubit Grover's search algorithm from 32 ExaBytes to 768 TeraBytes of memory" which was experimented "on Argonne's Theta supercomputer using 4,096 nodes" it shows that it is possible to "increase the simulation size" (Wu et al., 2019, p. 12). We end up with "the size of the quantum state in the simulation of 2n + 4 Bytes" for information business and culture, where n stands for number of Bytes (Wu et al., 2019, p. 1). The authors posit that to "predict each data point as accurately as possible based on its neighborhood in spatial or temporal dimension" we need an "algorithm" and this will most likely help, but not solve the understanding of business culture (Wu et al., 2019, p. 3).

Quantum Algorithms, a Bridge to Culture

Looking at the following mathematical equation, it becomes possible to visualize that the GLOBE data in House et al. (2004) representing Global Culture could be synthesized by a quantum computer. This data could be inputted into the equation "$i\hbar \, (\partial\Psi) \, /(\partial t) = - \, (h^2/2m) \, (\partial^2\Psi/\partial x^2) + V(x) \, \Psi$" using a quantum computer (Lervåg, 2010, p. 20). This would lead to previously unknown probabilities of finding a particle in a certain region in space which would help better understand different dimensions in cultures, but also novel equations such as: $|\psi\rangle = |Ua\rangle + |As\rangle + |Gd\rangle + |Po\rangle + |Ho\rangle + |IgC\rangle + |Ic\rangle + |Pd\rangle + |Fo\rangle$ Eq. 5.3, seen earlier. The results could first be tested for reliability and validity, making sure that the sample is representative. The limitations of the proposed study are to only analyze South Europe, Southeast Asia, and a Cluster of English-speaking countries called Anglo. If we used the available cultural dimensions in the above sections on South Europe, Southeast Asia, Anglo and insert these items into an algorithm it would be possible to further analyze the interdependencies between these cultural dimensions. The following

dimensions are the ones under consideration: different cultural dimensions such as "Uncertainty Avoidance," but also "Assertiveness," and in addition "Gender Differentiation" with "Performance Orientation" as well as "Humane Orientation" and "In-Group Collectivism" also "Institutional Collectivism" as well as "Power Distance" and finally "Future Orientation" (House et al., 2004, p. 193).

Teilhard, posited, that nothing was determined and nothing was material, that instead of matter, there is conscience (Schäfer, 2005, p. 20). Teilhard was also studied in depth by Casati-Prud'Homoz and Casati-Brochier (2013). For Teilhard, matter and spirit are not separate. The inference of the soul: Teilhard's Noosphere. The word "noosphere" meaning to be dominated by conscience (Schäfer, 2005, p. 20).

DISCUSSION

Business culture is divided between the north and the south, the east and west, the fortunate and the less fortunate. The successful are the individuals who are not emotionally involved with their goals, but instead enjoy the process.

There are Myer Briggs personality types which represent dichotomies between 4 pairs of descriptors that range from externally driven to internally driven personalities. These differences in personality types mitigate any chance of intellectual property redundancies and create exponential opportunities for novel research giving every individual their claim to fame. The only necessary talents one needs to have are cultural diversity, personality diversity, and pedagogical modules that allow for continuous learning up and including becoming a business quantum computer super-user over the QaaS (Quantum as a Service). In some instances, instead of culture mitigating the bridges to knowledge, ambient culture exacerbates these bridges until they collapse. This progressist culture of quantum computer super users is in contrast to a reactionary viewpoint, leading some to weltschmerz (equating to a feeling of Spleen). Being a full-fledged progressist or a reactionary both come at a high cost, the best position being a moderate, neither rejecting our culture, nor our future technological opportunities. Cultures according to nine dimensions of seen in the is chapter are important to incorporate into future quantum computers. As we will see in this chapter, there is a difference between making a living and living for making a good/service.

The Anglo and Latin European cluster, and to some extent Southern Asia, are particularly known for living for making (in other words living for work), albeit, even though Latin Europeans try to enjoy their joie de vivre. Living for work can lead to extreme behaviors, such as shrewdness, vanity, and at end of life, a situation similar to Orson Welles' Citizen Kane with his Rosebud (meaningless success, which is ironic). Usually, McGuffins are reserved for the silver screen, but in our world culture, of Hollywood rhetorical hyperbole, of ever accelerating news cycles, our culture's Rosebud is to attain perfection, never to be attained. Plutocrats invariably have their own leitmotif that propel them to fame, to a defining moment, and in the end entrapping them in disillusionment. Some large corporations act as illiberals, with our personal information, but are also creating liberal market opportunities for future quantum computers (e.g., the current misuse of personal information by misguided individuals will trigger an interest in Dirac's Bra-ket notation—this will simultaneously create new computer scientist positions and allow quantum computer coding to go mainstream). Altruism is the only antidote to the actions of misguided individuals.

Much like a computer, it is important to understand that altruism is programmable across cultures. It is important to look at Southern Asia, Anglo, and Latin European Clusters individually, but also collectively, as a single human tribe. Marketers have found a way to unite the world around fast food, movies, but let us unite around altruism.

We need to load a new cultural operating system into our lives, accepting a new way of understanding culture and each other, with altruism, whether it be the Southern Asia, Anglo, or Latin European, even going as deep as subcultural understanding where moral judgment resides. If Culture measurements are managed by quantum computers in the future, then this will be reminiscent of George Orwell's 1984. With current knowledge, technology, social media, internet, etc., it is possible to not only have cultural analysis, but also individual analysis, just like Schrödinger's equation calculates the probability of finding a particle in region in space. Through the analyses of the position of one particle using Eq. 5.3 cultural measurements customized to an individual will become possible. Which type of surveillance we are willing to accept is the question. Orwellian surveillance is one option, military surveillance is another, corporate surveillance is another, but the

best surveillance is self-surveillance and more importantly better communication between people as proposed by Teilhard, i.e., Noosphere: to be dominated by conscience. Our minds should be dominated by the conscience of perfect imperfections instead of focusing on airbrushed movie stars. We live in an alternative facts society, where the truth about the state of global affairs is concealed by a conceited plutocracy. In the future, legacy computers have a good chance of being replace ruthlessly by quantum computers, however, humans do not replace other humans indentically, and ancestors are never forgotten. The current cancel culture is an imitation of how a computer would act, removing someone from their lives, but it will soon go out of fashion to ostracise someone in this way. Humane leaders who perceive collective cultural heritage and give employees permission to fully live their emotional intelligence will thrive, according to Casati (2020), instead of being malignant narcissists. The mythology of the modern Pygmalion-Leader-with-a-Personal-Brand (PLwaPB) who idolize their Employee's Personal-Brand-as-a-Service (EPBaaS) should be revolte. In our dystopian post-truth society, a modern leaders' last concern is eschatology and instead focus on widening the Overton window as much as possible by forcing through the PLwaPB and EPBaaS vision. Much like corporate personhood, a quantum computer does not have a defined lifespan, therefore no heart and soul. Neither corporate personhood, not quantum computers fear amorallity, maximizing profits, within the confines of legality at best, and the extremes of psychopathy at worst, the likes of which we have only seen with Enron Inc. This is evocative of Shoshana Zuboff's dystopia, The Age of Surveillance Capitalism, which suggests that if human pursuits were spied on by corporations, the observation of these behaviors could be a profitable proposition. Quantum computers are an unknown to us. It would be wise of us to understand a quantum computer's decisions process, i.e. what they filter and what they express. A company called Human Synergistics ® has in some ways already invented the individual's qubit and soon QuByte of information, but with future quantum computers, an individual's *Life Styles Inventory* (LSI)™ could be infinitely more comprehensive. In terms of human expression, it is up to the individual to decide to recognize each other's common interests, to make an impact, to cross our quantum Rubicon towards a world made of a culture of justice and love, not just business as usual, not just homeostasis.

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