



“AVOIDING THE EXTREMES OF GLOBAL WARMING” by Antonio Cassella

ABSTRACT. Knowledge of the reality of the power hidden in the alliance of quantum with classical computing<sup>1</sup> may aid Science, Religion, Philosophy, and Art to avoid the extremes of global warming, keep the smile of the young, and reach Progress.<sup>2</sup>

1. INTRODUCTION: ESCAPING THE LAST MILE

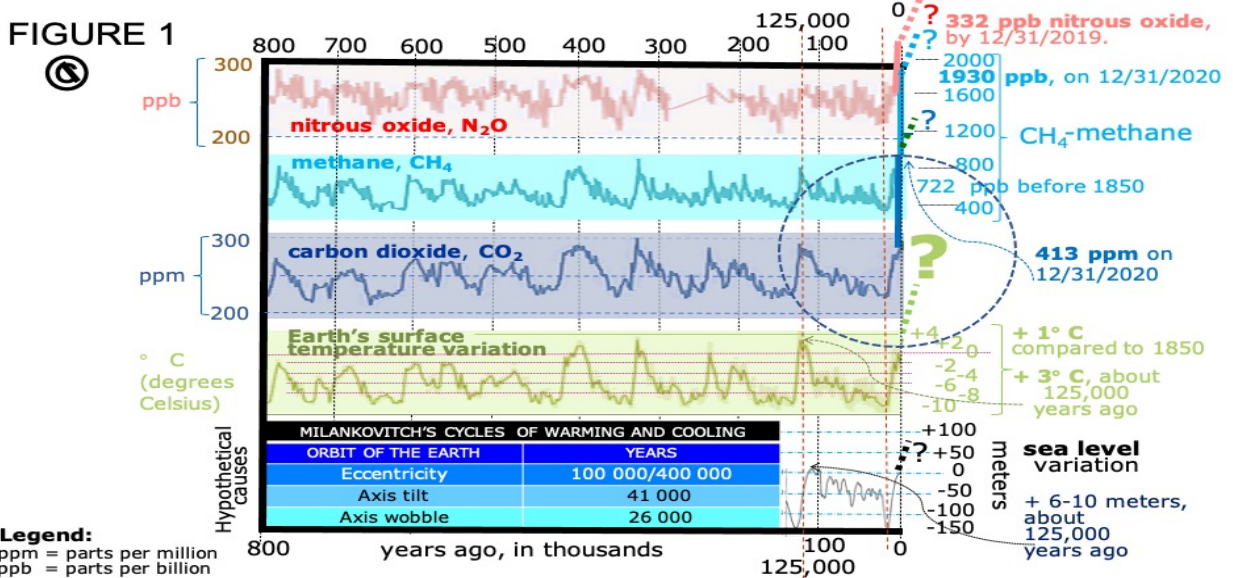


Figure 1 shows that in the last 800,000 years the concentration of three greenhouse-gases (GHG)—carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O)—in Earth’s atmosphere have varied in league with the change of surface temperature.<sup>3</sup> Sea level followed with a slight delay.

**It is not easy to separate causes and effects.** Past climate changes began with a cycle of Milankovitch, especially the eccentricity of the elliptical orbit of the Earth around the Sun. But now our emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O make the cause of the rise of surface temperature on Earth. Hence, if surface temperature followed our GHGs’ emissions, a worsening of climate variations would happen; unless we **thought and hoped about the unthinkable and impossible, before acting.**

A boost of at least 1° C (degree Celsius) has already occurred in the temperature of the lower atmosphere after the spread of the Industrial Revolution from 1850. In order to avoid too severe nonlinear extremes (e.g., hurricanes, tornadoes, droughts, and floods), the IPCC (International Panel on Climate Change) advises us to limit future increases to 0.5° C. Can we?

<sup>1</sup> In any LOGOS HEURISTICS NEWSLETTER published bimonthly by Research Autism LLC and in Antonio Cassella’s printed writings: The autistic invariance kept by the first attention (1), or classical computing, is underlined; the temptation sought by the **second attention** (2) wronged in autism, or quantum computing, is given in **bold**; and the third attention (3) (damaged in schizophrenia), which renovates reality and the self, combines underlining with bold or is shown through an irregular initial Capital.

<sup>2</sup> Our newsletters about applications of the Third Attention are offered without cost at [researchautism.com](http://researchautism.com), a website protected by GoDaddy.com. This issue is included in the Creative Commons License as (example of citation): Cassella, A. (2021). Avoiding the extremes of global warming. *Logos heuristics newsletter*, 2(1), 1-8.

<sup>3</sup> The temperature variation is based on Antarctic ice cores in a NASA graph by Robert Simmons and data by Jouzel et al. (2007), published by NASA in 2010. Carbon dioxide, methane, and nitrous oxide variations from 800,000 BCE (Before the Common Era) to 2015 CE (Common Era) by United States EPA (Environmental Protection Agency), published in the EPA website in August 2016. The latter too are based on multiple data from Antarctic ice cores. Sea levels were taken from a curve published by NOAA and modified by the author for the last 22,000 years.



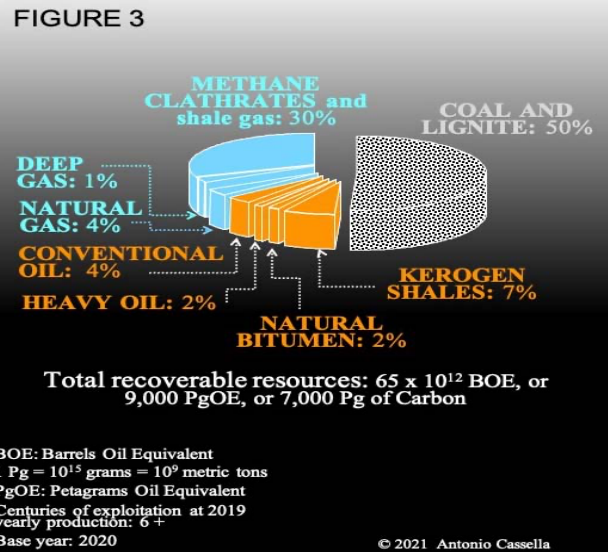
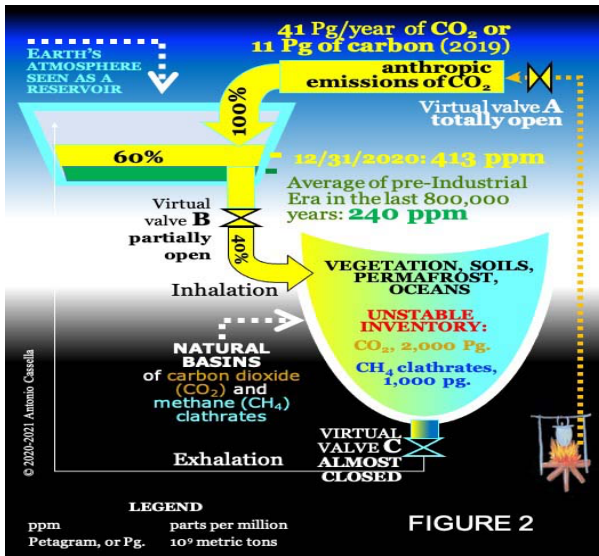
I present here two premises:

- a) The **nonlinearity** outlined by the IPCC (2007, 2014, 2018, 2019) satisfies a rule of thumb centered in the **square of the variation of Earth's surface temperature since 1850**; and
- b) sustainable Progress rests on widespread knowledge of the reality of the **alliance of quantum with classical computing**.

The first hypothesis implies that a surface temperature increase of 0.5° C will augment by 1.5 x 1.5 = 2.25 the strength of hurricanes, whereas a global warming like the Paleocene-Eocene Thermal Maximum (PETM) (+6 to +8° C) of 56 million years ago (Mya) would bring a worsening of 36-64 times of climate upheavals. And the second hypothesis seeks to preclude a PETM-like phenomenon followed by a repetition of the Permian-Triassic Hyperthermal (PTHT) of 252 Mya. The PTHT, in which the variation of surface temperature reached +14° C (14 x 14 = 196), killed 4/5 of Earth's species. *The upcoming Anthropocene hyperthermal may add the extinction of humans.*

## 2. BACKGROUND: WHAT WE KNOW ABOUT EXCEPTIONAL CARBON INTRUSIONS

After defining 1 Petagram (Pg) as 1 x 10<sup>9</sup> metric tons, I assess at 25 Pg of carbon dioxide (CO<sub>2</sub>) the yearly contamination of Earth's atmosphere (60% of incoming CO<sub>2</sub>, 41 Pg, Figure 2) in 2020.



The atmosphere holds about 800 Pg of Carbon in the CO<sub>2</sub> and methane that joins water vapor and other greenhouse gases (GHG) in retaining some of the heat provided by the sun. All in all, GHGs preclude a cold lower atmosphere (-18° C), while favoring the photosynthesis of plants and the life of animals, fungi, and other organisms. Rocks on Earth (mostly shales and limestones) contain a pool of 100 million Pg of carbon<sup>4</sup>; 7,000 Pg (Figure 3) tallies the fossil energy resources (coal, oil, and gas) contained in geological deposits; and I posit also that 2,000 Pg of carbon dioxide and 1000 Pg of methane clathrates rest in natural basins (e.g., permafrost and oceans) in an unstable condition.

Oceans exchange some CO<sub>2</sub> with the atmosphere, while their bottoms keep 38,000 Pg of carbon (UNH). We do not know whence comes the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O gained by the atmosphere, when its temperature rises naturally (Figure 1), although permafrost is a suspect. But what matters is that we are giving back to the atmosphere in two centuries the carbon that took million years to fill geological traps. Before 1850, the atmosphere contained less GHGs than today, because 200 years ago our per-capita energy consumption and global mass were still modest.

<sup>4</sup> Data collected on 31/12/2020 from the website *Globe Carbon Cycle* of the University of New Hampshire (UNH).



World population has grown from 10 thousand individuals, after the Toba volcano erupted 75,000 years ago, to almost 8 billion in 2020. Also our use of energy has swollen. Energy per-capita was 0.5 BOEPY (barrels of oil equivalent per year) (Malanima, 2014) in the Age of Food that started six million years ago, when hominins outsmarted the best hyenas; 1.14 barrels in the Age of Fire, stolen by Prometheus since 1 million years ago; and 1.3 barrels in the Agriculture Age, since 8,000 BCE (Before the Common Era). *A per-capita consumption of 13 BOEPY in 2019 shows that each of us guzzles ten times the energy used by an ancient Levantine farmer; and collectively, about 100,000 times more fossil fuels than 10,000 years ago, when sea level was 25 meters lower than today.*

Carbonic acid is polluting our oceans; food and water supplies will wane; and many nonhuman free species have died in the current sixth extinction. Will the young of any species have a future?

Due to the faster rate of pollution of the atmosphere with carbon dioxide in modern times, Babila et al. (2018) hypothesize that *the acidification of Earth's oceans at the end of the 21<sup>st</sup> century will be more severe than the one that occurred in the past Paleocene-Eocene Thermal Maximum, or PETM.* Foster et al. (2018) value our knowledge about the extreme effects of accelerated intrusions of carbon into Earth's atmosphere: i.e., the surface temperature increase, ocean acidification, acid rain, ice-free poles, reduction of polar albedos, ocean anoxia and euxinia (lack-of-oxygen, and abundance-of-hydrogen-sulfide), higher sea levels, increased erosion, and mass extinctions.

Svensen et al. (2018) wrote that 252 million years ago, magma coming from the Siberian Traps large igneous province crossed fissures and deposits rich in carbon, which reached the atmosphere at the end of the Paleozoic Era. *The hyperthermal between the late Permian and the Triassic periods (PTHT) caused Earth's third and most severe mass extinction.* Although they admitted our blindness about unknowns that cannot be modeled by science, Augland et al. (2019) confirmed the role of the repeated eruption of the Siberian Traps in inducing the bleak reality of the PTHT.

Benton (2018) researched the killing mechanism of the PTME (Permian-Triassic Mass Extinction), in which most Earth's species vanished. He stressed that in the oceans, warming from above and anoxia from below were caused by intrusions into the atmosphere of carbon dioxide, followed by methane intrusions from crystal hydrates. He also pointed out that hypoxia (deficiency of oxygen) reaching the tissues of living beings and hypercapnia (or too much carbon dioxide in the blood) may have combined with the euxinia caused by the *rise of hydrogen sulfide from the seas.*

In the Pangea's landmass that extended from pole to pole in the PTHT, extinction might have responded to a high surface temperature (40° C), draughts, wildfires, acid rain, and alterations of the ozone shield (Kump, Pavlov, and Arthur, 2005; Ward, 2006). Kump (2018) added that recovery after the PTHT was hampered during million years by a weak carbonate-silicate weathering feedback.

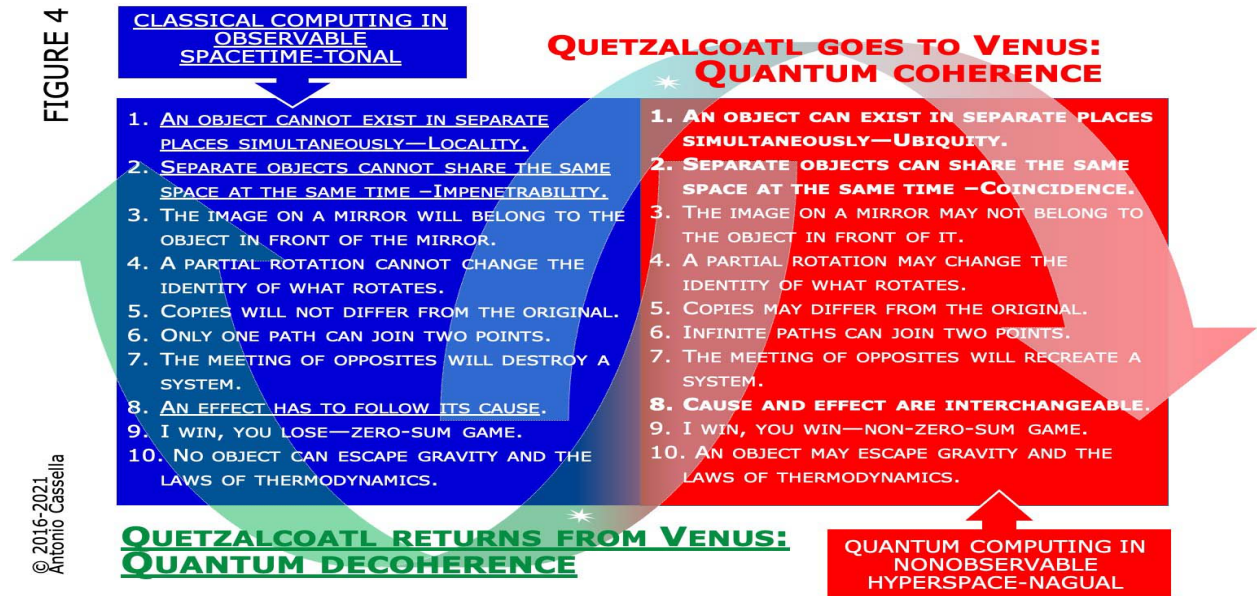
The causes of the third and largest extinction on Earth may be **multiple**, as in Agatha Christie's novel, *Murder in the Orient Express*, or the 23 stabs that bled Julius Caesar to death in the Roman Senate on March 15, 44 BCE. The ongoing sixth extinction of nonhuman species and the looming global warming, however, have a unique cause: **human ambition**, or **hubris**. *The actual anthropogenic eruption of carbon dioxide, methane, and nitrous oxide may cause, at the turn of the 21<sup>st</sup> century or before, a repeat of the PETM and the PTHT.* Science can help—e.g., by aiming at fuel cells that would release energy and sequester carbon (CCS) (Bove et al., 2020). Still, eluding a new PETM and PTHT cannot be left to science alone. We may also deepen our knowledge of the alliance (3) of **quantum** (2) and classical (1) computing (Cassella, 1997, 2000, 2002, 2015, 2018b) enclosed in the Mesoamerican myth of the demigod Quetzalcoatl.

A sinning Quetzalcoatl **went** to Venus as a **lying devil** (which autistics cannot easily **do**); but **repentance** will cause his **return** from Venus to seek a new shared truth (which schizophrenics cannot easily **do**). Quetzalcoatl's **going journey** with the **morning star** and his **return** with the **evening star** makes a metaphor for Progress. Will our grandchildren fall into the trap unleashed by scientific progress coupled with social regress? Or can our Vision (within the Third Attention) and our Will save them (within the Third Point of every **repented** person, culture, and country)?



### 3. DISCUSSION: THE PRINCIPLES OF THE LOGOS HEURISTICS

The insane temptation of changing Earth's vital atmosphere into the poisonous one around Venus (90% CO<sub>2</sub> and 500° C near the surface) by burning the carbon trapped in shales is unfeasible. Indeed, freeing 1/5 of the carbon contained in the resources of fossil fuels (7,000 Pg in Figure 3) will raise atmospheric CO<sub>2</sub> from 0.041% to more than 0.1% (or 1,000 ppm) in the 21<sup>st</sup> century. That effect would suffice to torture our grandchildren before leading them to a premature death.



Classical computing tells us in Figure 4 (eighth principle on the left) that in spacetime an effect must follow its cause. Hence, we feel lost when we cannot give a cause to a particular effect. In the imagination created by quantum **hyperspace** (Caramazza, 1994), the **hope** to establish a new classical sequence allows us to step into the **coherence phase** of quantum computing, *if we decide to face a critical problem*. In **facing a problem**, we need to **side with both** a cause and its effect in hyperspace (Figure 4, 8<sup>th</sup> principle on the right), which stresses the **infinite speed** attached to Ubiquity (the first principle on the right).

My first newsletter outlined the first two sets of principles. The second letter here leans on the 8<sup>th</sup> set (Figure 4) to show that an expansion to ten sets is possible. (I arrived at 20 sets before realizing that the first two sets include all others.) After all, the **infinity** that results from **siding with both** a cause and its effect within Ubiquity has to embrace **nothingness** (Coincidence, or the second principle on the right) before we **cross hyperspace** with spacetime (Cassella, 2019b) through **decoherence**. Unmedicated schizophrenics cannot open the door of **nothingness**; thus, they cannot **return**. Yet, we need more than antipsychotics to **return** before our grandchildren regret our madness.

#### THE MADNESS OF SEEKING THE GROWTH OF ECONOMY AND POPULATION

In hyperspace, **siding with natural positive and negative feedbacks at once** may help us **posit hypotheses that could be investigated** about the cause of past global warmings and their effects. Figure 1 suggests that in the last 800,000 years an initial boost of heat, induced by changes in Earth's rotation around the Sun, caused surface temperature and the atmospheric content of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O to go up. Sea level followed.

For example, in the last episode of climate change about 125,000 years ago, after an initial rise of temperature, the melting of Greenland glaciers and the partial melting of Antarctic ice caused the

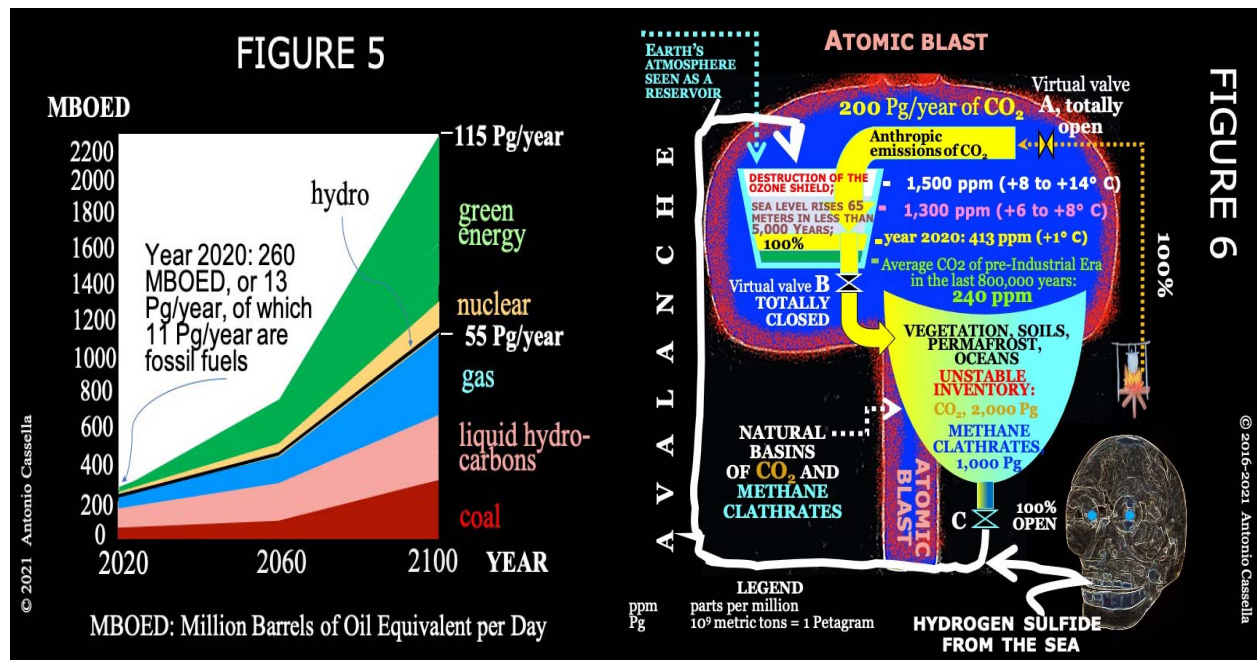


level of the sea to rise by 6-10 meters above present values. Some consolation can be gained by realizing that it may take 5,000 years to melt the Antarctic glaciers and rise sea level by 65 meters.

On one hand, the temperature rise from added insolation (the initial cause) increased the content of CO<sub>2</sub> in the atmosphere (the effect), which caused a further rise of the temperature, the melting of methane-clathrate crystals in shallow seas, more water vapor, and a higher temperature (e.g., +3° C in Figure 1). Since methane lasts less than CO<sub>2</sub> in the atmosphere, *once the source of methane reached a tipping point*, its strength would go down, reducing temperature and the content of carbon dioxide and other GHGs. On the other hand, the melting of Earth's permafrost, the disruption of oceanic currents, or orbital changes of the Earth could have caused the rise and fall of CO<sub>2</sub> and CH<sub>4</sub>. Natural crises developed rapidly; and recovery was very slow. This scheme has not changed.

Within anthropogenic causes of global warming, disruptions hide around the corner. After all, everyone wants a bigger car, more electricity, a climate-responsive apartment, a better dinner, and a longer life. Since one billion people drink contaminated water and get barely a starchy breakfast, one may hypothesize that a high and prolonged global economic growth, in the like of the one that China experienced since the death of Mao Zedong, would cure the ills of poverty (Cassella, 2018b).

Figures 5 and 6 show, however, that the aim to remove poverty by a high economic growth would be counterproductive, even if energy efficiency doubled and carbon-free energy went from 15 to 50%.



A high and prolonged economic growth (Figure 5) would cause a PHTT-like avalanche (Figure 6). At the same time, the spread of nuclear weaponry, terrorism, and the exacerbation of human hubris would increase the risk of a nuclear conflagration, in which the power of one million Hiroshima bombs, concentrated in fewer thermonuclear weapons, would destroy most cities on Earth.

We know that we should shortcut global warming, the use of weapons of mass destruction, poverty, cognitive degeneration, social regression, and terrorism. We can defend us and nonhuman species better by understanding the alliance of classical with quantum computing shown in Figure 4.

Unfortunately, math and scientific models do not suffice to easily convince humans full of hubris to reduce their production of offspring and an economic growth based on the burning of fossil fuels, the excrement of the devil. Most diabolical leaders, their corrupt buddies, and even their slaves could read any Sacred Text or Work of Art. But their hubris forces them to read without reading. And they cannot easily learn, since no school teaches yet the wonders and dangers of quantum computing.



## THE GOING OF AMBITION AND THE RETURN OF JUSTICE IN A SCHOOL

That said, 98% of us are cognitively fit to **appreciate** the **power** of quantum computing in nature and the mind through one particular example. In the TV episode “Mr. Monk goes back to school,” Adrian Monk (a temporarily retired police detective) is frightened by the **intelligence** of a male science teacher who killed a pregnant female English teacher (his secret lover). Monk believes that the science teacher threw her from the top of a clock tower, although he was at the moment supervising the SAT exam of a group of students in a specific classroom. Monk knows that in classical reality no one can act in two places at the same time (the principle of Locality at the left in Figure 4); and the suspected assassin shows Monk that a serpent in a glass container would see but could not snatch a mouse in a nearby container, for it could not cross either the first or the second glass wall (a limitation born of the Impenetrability inherent in the second principle at the left in Figure 4).

However, his intuition of Ubiquity and Coincidence in **quantum computing**, together with the **meeting** of spacetime and hyperspace in his mind, leads Monk to **raise a problem** and **find a solution** when he faces a worthy opponent in front of the clock tower. Right then Monk **understands** that the assassin had placed his mangled victim on the advancing horizontal long needle of the tower’s clock, which gave him the time to return to his classroom before her body slid and fell on his car parked under the clock. Once the meeting of **infinity** with **nothingness** in Monk’s mind **solves** the **problematic crime**, the detective thanks his puzzled opponent, who asks a witness about who had won the virtual match. Both Monk and his worthy opponent **won simultaneously** (9<sup>th</sup> principle at right in Figure 4) when **creativity** replaced **violence**. Monk’s **honest quantum mind** and the **deviousness** of the unworthy killer reflect the Creative Intuition of the writer of Monk’s stories.

Unlike the **criminal creativity** in the mind of the science teacher, the **union** of **quantum** and **classical** computing in the mind of Monk can **solve** arduous **problems** and overcome successfully challenging incidents. In *Mr. Monk goes back to school*, **infinity** and **nothingness** court each other as they do in the expanding circular wave caused by an earthquake or by a stone thrown into the surface of a calm lake. In any circle, an **infinite number** of finite, identical radii court the **nothingness** of a common center.

A circular wave, then, reflects the **power** of Greek Pi by the square of any radius. Similarly, *Earth’s climatic upheavals respond hypothetically to the square of the change of its surface temperature*. Within a feverish Earth, for example, the rise of 1 degree Celsius in surface temperature increases nonlinearly the humidity of the air that feeds the monsoon and extreme floods in India, China, and Bangladesh. In 2000, the **power** of a circular wave destroyed the fuel tank of a Concorde taking off from Paris. But the circular wave of quantum computing can also **do good!** E.g., in “Mr. Monk meets his Dad,” a **repented old man** teaches his son (Monk) how to ride a bike. Monk’s sinning and egotistic father had **gone away**, yet his heart, repentance, and grace allowed him to **return**.

The **circle** that inscribes the base of Giza’s **pyramids** suggests that pharaohs knew (Cassella, 2018a) that **infinity in coherence** can **return** to a better classical reality through the **nothingness** of **decoherence**. The fact that in four pyramids of the fourth Egyptian dynasty (Khufu, Djedefre, Khafre, and Menkaure) the quotient of the perimeter of the base over the height results in the number **6.28** sustains my hypothesis (Cassella 2018a, 2019a) that **Greek Pi** (3.14 etc.) and **Euler’s identity** ( $e^{i\pi} + 1 = 0$ ) reflect **quantum coherence**; for example, in the **self-centered ambition** of the science teacher that tries to humiliate Monk in *Mr. Monk goes back to school*. Fortunately, **Greek Tau** (twice Greek Pi, or 6.28 etc.) and the **Tau Identity** ( $e^{2i\pi} - 1 = 0$ ) can be linked to the **top** of a pyramid, Monk’s **love for justice**, Laozi’s **wu-wei**, **water**, and the stories given to Moses by **Gabriel**.

There is no **justice** in forcing the young to breath an air warmer than the one breathed by **Moses**. That Egyptian Prince **learned** in the ancient “**House of Thot**” that the **Crook** of classical computing (Moses’s **Thummim** and Zechariah’s **Hoalim**) can **cross** the **Flail** of quantum computing (Moses’s **Urim** and Zechariah’s **No’am**) in any **enlightened leader**. An enlightened Moses devised the teachings that King Solomon passed to the Queen of Sheba, whose Sages discussed them with the ancestors of Laozi and with the Olmecs. The Olmecs, Maya, and Aztecs valued a **going Quetzalcoatl-Nagual** (the science teacher in *Mr. Monk goes back to school*) and a **returning**



**Quetzalcoatl-Eagle** (Monk or his father). Unlike autistics, modern **tyrants** are fit to **understand** that Moses's classical crystal Thummim-Crook and his **quantum crystal Urim-Flail** were sewed for a divine reason at the **height of the heart** (a metaphor for "goodness") in the ephod that Aaron kept in the **Ark of the Covenant**.

A same **self** sustained a **deceiving Jacob** in Canaan, a **dreaming Jacob** in Bethel, and a courageous **Israel** in Penuel. Jacob's Vision of the **meeting** of **classical** and **quantum** computing within the Third Attention rose with **Gabriel** in Bethel; and the Third Point of an Israel's Willing to **flood others with goodness** was blessed through his fight with the Archangel **Michael** in Penuel. As with Quetzalcoatl's return, **Jacob's hubris** nourished **Israel's enlightenment** (Cassella, 2018b).

Similarly, enlightened factions—as could be the USA and Russia—may **save each other** and the Earth. The need for the **mutual enlightenment** of former **enemies** makes the **hidden meaning** of Leonardo da Vinci's *Fight for the Standard* (the central piece of his mural *Battle of Anghiari*), hidden 7.035 meters below the center of Giorgio's Vasari's *Battle of Marciano* in the Hall of the 500, at Florence's Palazzo Vecchio (Cassella, 2018c). (Curious readers may see the two-parts documentary I placed in Youtube's collection and in the website [researchautism.com](http://researchautism.com) by exploring the hyperlinks <https://youtu.be/PZUe3ELyYyg> and <https://youtu.be/et8l3ExEazU>.)

#### 4. CONCLUSION: FREEING OUR GRANDCHILDREN AND THE FIGHT FOR THE STANDARD

If we **think** and **decide** with our **heart**, the surface temperature of Earth will follow the bearing advised by the IPCC. **Reading** the **alliance** (3) of **quantum** (2) with **classical** (1) computing in any Sacred Text, Work of Philosophy, Science, or Art, within the Third Attention (3), will lead our leaders to **boost green fuels to 85%, halt population and economic growth, and remove the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O that we have thrown into the atmosphere.**

In my first newsletter, I proposed that we could **use for the better** the nuclear capacity that fear and ambition **developed for the worse** during the cold war. As with the double diffraction that allowed Leif Erikson in 1000 CE to **find the right bearing** to his Vinland (today's Canada) through an Icelandic **crystal**, an alliance between the USA and Russia could change into Progress the inertia of the oncoming environmental and nuclear avalanches. Another *International Space Station*, a metaphor of the agreement among key nations, would result from **uncovering** three Egyptian monuments to Osiris/Orion in a plateau south of Cairo (Cassella, 2018a). The final step would come from freeing **Leonardo da Vinci's Fight for the Standard**.

The hidden location of the *Fight for the Standard* would follow the bearing shown by the separation of calcium-carbonate from calcium-sulfate plaster, at the right of the lower frame of Giorgio Vasari's *Battle of Marciano* (Cassella, 2018c), in the Hall of the 500 of Florence's Palazzo Vecchio. **Freeing** the *Fight for the Standard* would help us leave our **hubris** behind, pass from John Milton's "**Paradise lost**" to his "**Paradise regained**"; and **Lucifer/Iblis**, to escape **Satan**.

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