JAGIELLONIAN UNIVERSITY IN KRAKOW CENTRE FOR EUROPEAN STUDIES

The Reinvigoration of the West through Outer Space Development

*Or, Tsiolkovsky's Imperative in the 21*st Century

By

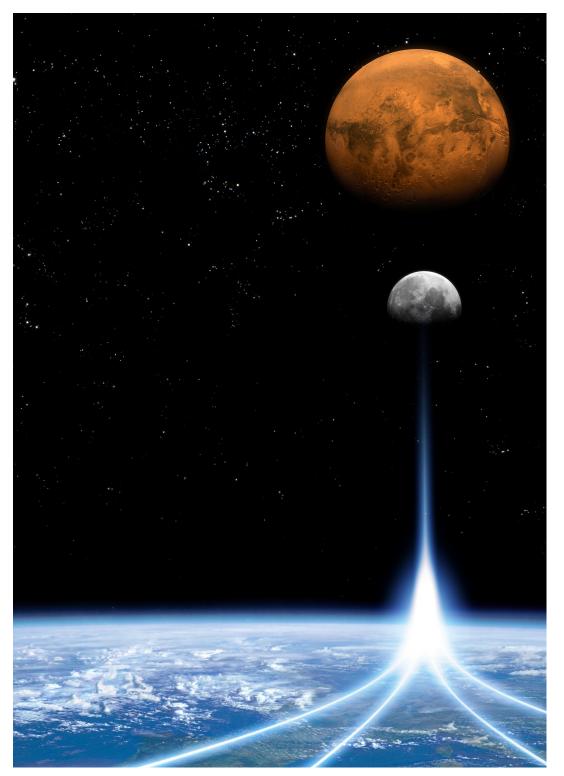
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Masters thesis written under the supervision of Prof. dr hab. Andrzej Nowak

> October 2006 Kraków, Poland





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ACKNOWLEDGEMENTS

In Jan Karski's 1944 *Story of a Secret State*, it is written 'books are weapons, in the war of ideas.' If this paper about ideas contains any significance, it is due to my great good fortune in having Professor Andrzej Nowak as *promotor*. His criticism was invaluable, but more, it was the philosophic atmosphere he created that compelled me (and not only me) to renew a personal search for the value in certain ideas. In his class on Russia and Central Europe down through the centuries, we found out that notions carry real consequences.

I would also like to acknowledge octogenarian George K. Jamison U.S. Navy (Ret.), a storehouse of practical knowledge who holds common sense in such a high regard that it becomes infectious and spreads to the people around him, most importantly, through his primeval wit. George has got the bluest collar of all, but he is a walking, talking reminder of its dignity.

Dziękuję to Col. Maciej Mroczkowski for his help in understanding the impact threat, his bibliographical knowledge about under-treated subjects, his tireless work in promotion of positive Polish-American relations and his dedication to the security of the Euro-Atlantic sphere (and for giving me a lift to the *Warsaw Uprising Museum* in February). Köszönöm to Hungarian astronomer Prof. Ivan Almar, who is currently writing a book in Hungarian about 'space and society.' His surprising interest in my topic had a positive effect at an early stage. I found satisfaction in his fond remembrances of Kraków from 1960, when at the Jagiellonian Observatory, he worked with the venerable Polish astronomer Prof. Kazimierz Kordylewski (1903-81), who not long before, discovered the 'clouds' in space at Earth's trojan-points which are now called 'Kordylewski's Clouds.' Professor Almar warned me especially about care in making sure certain subtopics were not written in a 'superficial' way. I hope the result is at least mildly pleasing to him.

I thank Miss Sylvia Engdahl (ret., Oregon) and Dr. Barbara J. Becker (University of California) for their correspondence. They have devised and taught specialized university courses containing the essential components of what might be called a comprehensive *philosophy of astronomy*, the kind that shatters the tiresome barrier between the stars and heavens (and Int'l Space Station) above, and the everyday dealings of normal people on Earth. Available online (see Bibliography Ch. IV), the material from these classes, laboriously gathered and organized, should be amplified and grafted into curricula universally.

Dziękuję to Callie and Anna for proofreading this: had they not caught the omitted comma on page 103 I shant ever have known it was missing. Thanks to Tygrys, which we drink so we can all be managers someday. Thank you to Agata, who stunned me with the knowledge that Błonia is, in fact, an 'axis of ideology' (I wrongly thought it was a park). Access to your comfortable facilities was as critical to the completion of this paper as your foraging and gathering of edible matter was for our mutual consumption. By affording me a respite from the mundane, I—see, I just finished this, another page, for example.

Let me turn then to pay respects to my sometime roommates: Dawid and Wilhelm, without whose snoring half the ideas in this paper would never have emerged. Thanks to Prof. Zdzisław Mach, Mr. Scott Simpson and the administrative staff, Pan Darek and all the rest of the people inhabiting CESSSR, the Peoples' Republic (Soviet Federated) of CES. Marcus also, what a treat to share the time with such a... thanks Marcus. Sophie, you were the air that sustained us. Bartek, słowo. Ryan, always remember we never lost the championship. And what great trips we all had- Kasia, in Kiev you were my saving grace, I can't thank you enough. At least I got to finally eat real Black Sea caviar. But it must be said, Bulgaria was my favorite. My gosh what fun! Thanks to the bus guys over at Antałek. Friends, Marta..., We'll always have Plovdiv."

They say I should acknowledge family too. Family has been on my mind a lot because I have lost my last grandparent at the time of this writing. He had the same name as me. He went to heaven, lets hope. Suffice it to say that I was and am uplifted, whenever I recall and see them, and others departed, in my mind's eye. Many of the recurring dreams I have had this year took place at Babcia's house in Michigan, as well as levitating over the Kraków of the future, when the rynek is full of crystal water like a fountain, on which people walk as normal... while the Mariacki's façade shines a radiant white (although, it was also very sunny out in the future). This kind of meditation is also a form of inspiration.

None of this or anything else would be possible without the striving of my mom, Helen Bobel, who endlessly toils that I might enjoy the *douceur de vivre*, the sweetness of life. She once told to me that writing an MA thesis is a great bourgeois milestone. Quite so, and as I am about to complete one myself, *amour-propre* compels me to believe that in her eyes, which are the most important, I am now seen as a higher social animal. And alas, who could forget Bobby? Let me take a moment to acknowledge my brother Bobby: with a nod of the head, I hereby acknowledge that he is, in fact, there. And lastly my dad, who planted seeds. DT

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TSIOLKOVSKY'S IMPERATIVE

Not since the 1980s has *outer space* been on the minds of so many policymakers around the world. At that time, attention to this topic was fueled by the pointed decisions surrounding the Reagan Strategic Defense Initiative (or 'Star Wars'), and the continued successes of the Voyager exploratory missions to the outer Solar System. Today's reemerging consideration is related more to the former- a very real fear of the increasing usage of the environment around the Earth for military and security purposes.

Space has always played an integral role in human affairs. We are familiar with the Cold War *Space Race*, but gazing back in time like Dickens' Scrooge reveals the relentlessness of cosmology in forming the superstructural views of all societies, searching for their place 'under the Sun.'

Such a gaze starts in prehistory, as scattered man observed regular patterns in the sky, especially the movement of the Moon, Sun and five 'wanderers' against the backdrop of the fixed stars of the firmament. Cosmology in the oldest lands radiated from the priestly classes, where, charged with religious power, the priests and magi who were able to understand the patterns politicized space to a great extent, often deciding public policy using one or another astrological method.¹ The Classical Greeks codified the zodiac, and developed a much increased understanding of celestial mechanics through geometry.² Ancient, classical and medieval seafarers looked up at outer space to show them the way home.

For a thousand years after the fall of Rome, conceptions of the heavens were based on the continuing notion of the geocentric order, as concieved by the Hellenistic geographer Ptolemy in Alexandria, and endorsed by the Church. By extrapolation, being that it placed humanity as the rulers of the one and only *terra*, that lay at the center of the universe, humanity constituted the most important part of geocentrism. Then in 1543, during the golden age of the Polish Commonwealth, Nicholas Copernicus made his great contribution: *'De revolutionibus orbium coelestium,'* stopping the Sun and moving the Earth. Aside from the astronomical phenomenon, this reordering of the cosmic mechanism caused the epochal social realization that physically at least, humanity was not only not the center of everything, but not the center of anything.³

Mankind fell from a kind of grace, but the celestial orbs continued to turn. Copernicus, Kepler, Galileo and Newton lived and died. Telescope and microscope were invented, the Galilean satellites of Jupiter were discovered in 1610, Saturn's large moon Titan was found by

¹See: Internet Sacred Text Archive: Ancient Egypt, 02/08/06

² See: 'Encyclopedia Britannica Online Edition: Astronomical Map, 02/08/2006

³Or, On the Revolutions of the Celestial Spheres. See: Uniwersytet Mikolaja Kopernika w Toruniu, A

Biography of our Patron, 02/08/06. The Heliocentric Universe was outlined in the book.

Christaan Huygans in 1650, while a new planet, Uranus, was discovered by William Herschel, in $1781.^4$

At the time another new planet, Neptune, was discoverd in the mid-19th Century, a French visionary was writing a new kind of fiction. Jules Verne harnessed that quality of imagination essential in great literature from all periods, and channeled it into a space adventure: *De la Terre* à *la Lune*.⁵ Verne and his successors such as H.G. Wells extended Leonardo da Vinci's dream of 'flight' into 'spaceflight,' inventing modern science-fiction in the process.⁶ They took physical material for it from 19th Century science, but quite the opposite was also true: in the new binary relationship between fantasy and reality, real world science gained immense inspiration from these science fiction *Voyages Extraordinaires*. In this way, Verne and Wells planted the essential seeds which led to the stars.

Not long after *War of the Worlds*, and in the very same year as the Wright Brothers' flight through the North Carolina sky, an epoch-making example of this seeding took place across the world in the Russian Empire. In that year of 1903, Kaluga high school math teacher Konstantin Tsiolkovsky, inspirited by reading Verne, correctly theorized a way to lift off the surface of the Earth and into the cosmos.⁷ These principles of rocketry, as elucidated by Tsiolkovsky, Robert Goddard, Hermann Oberth, Wernher Von Braun and Sergei Korolev, made it possible not only to understand and observe space, but to conquest it.

Tsiolkovsky's father was a Polish nobleman, Edward Ciołkowski, who was exiled in Russia like Joseph Conrad's father, in the 19th Century.⁸ As the inventor of cosmonautics, Tsiolkovsky is to many the father of human space flight.⁹ In 1911, he issued the following statement:

"Earth is the cradle of mankind, but one does not stay in the cradle forever."

This is *Tsiolkovsky's Imperative*. It is the drive to physically explore space, go there, place outposts there and indeed begin the settlement of the entire solar neighborhood. It is the mystical urge to extend the human presence, turning cold space and alien surface into habitatdeath into life. If we merge it with the question as to why space has so imposed on us from the

⁴ See: Hoskin, Michael, *The Cambridge Concise History of Astronomy*, Cambridge: The Cambridge University Press, 1999, pp. 37-55.

⁵ Or, 'From the Earth to the Moon,' 1865- He was also inspired by the Russian 'Cosmists' of the 19th Century. See: Djordjevic, R., 'Russian Cosmism and its Uplifting Effect on the Development of Space Research, University of Belgrade, 1998.'

⁶ Science-fiction luminaries include Verne and Wells, Robert Heinlein, AE Van Vogt, Arthur C. Clarke, Isaac Asimov, Ray Bradbury, Frank Herbert, Stanislaw Lem and Michael Crichton

⁷ See: The Tsiolkovsky Museum, Kaluga, *Tsiolkovsky*, *The Early Years*; the book is Исследование мировых пространств реактивными приборами or, *The Exploration of Cosmic Space by means of Reaction Devices*.

⁸ Specifically, 'szlachta' nobleman- His wife was Russian, and he was the 7th of a troop of 18 born to this fruitful pair

⁹Cosmonautics is a synonym for astronautics, the study of movement through space

very beginning, the answer is revealed: because space is a natural part of our environment: another vastness surrounding us- like ocean and atmosphere. In this respect, a meteor shower and a rain shower are not so different, both functions of a process of nature. The cause of the rise and fall of the tides everyday is no more removed from 'the human world' than is the cloud cover that renders the appearance of a gray sky. Outer space *is* a part of us, just as much as the air we breathe, and the oceans in which we swim.¹⁰

Tsiolkovsky refers to Earth as our cradle, the place we have grown and learnt, comprehending more of the world and beyond, in our time. As a baby child overcomes the deficiencies of immaturity and begins to explore it's 'outer world,' building immunity as it goes, humanity likewise overcomes the barriers of technological and social immaturity as a species, overcoming gravity and vacuum, to explore more of a further 'outer world.'

The reemerging worldwide interest in space today is illustrative of the ongoing power of *Tsiolkovsky's Imperative*. Where rubber meets road in the quest for political funding, betting the chips on 'concern about possible militarization' trumping 'because it is a quest for who we are,' is pretty safe. Both however, figure into the real circumstances calling on governments to respond. In addition, respected writers and scientists claim the 21st Century is in the process of becoming less hospitable for the majority of humanity, instead of more. The stark and dismal consequences of overpopulation and crushing poverty that mire the resource-poor 3rd World are complemented by the cultural decay of the West, where the very vision that leads successful civilizations towards a hopeful future is in a state of atrophy.

A pattern emerges. It is highest time for the European Union and its Member States to look again at space, determining if and how its development brings benefit to life on Earth, and if such benefit warrants significantly increased public expenditure to those ends. Should the European Union take a far greater role in the worldwide renewal of outer space exploration and strategic development? The answer is found by dividing the question into three research strains:

1) The Cosmological and Existential strain questions if there are purely scientific reasons to bring Europe in line with Tsiolkovsky's Imperative of space development. A scenario of biological survival presents itself.

2). *The Social and Intra-Civilizational* strain inquires into the state Western Civilization is in today, and if space development can bring benefit in some way to this social entity, of which the EU is a core part. A scenario of decay and reinvigoration unfolds.

¹⁰ As Carl Sagan famously said human beings are even made of matter exploded from stars of the past, 'star stuff,' since all the heavy elements (bigger than H and HE), including Earth's matter, arrived in the accretion disk from past supernovae explosions. See: Sagan, Carl, *Cosmos*, Random House, 1980, Ch. 4.

3) *The Competitive and Inter-Civilizational* strain asks if leadership in space development is necessary to Europe and the West for purely geopolitical reasons. A scenario of responsibility and diffidence emerges.

Chapter I reviews the research and current thought concerning the first strain, looking at the prevalence of life and lifelessness in the universe and on Earth, in light of Copernicus' dethronement of humanity from center to periphery. The question is whether space agencies worldwide generally and the ESA (European Space Agency) particularly should be redirected in their aim and lavished with considerably more funding at the expense of other vital uses, purely for existential reasons. To find the answer, this chapter presents the Drake Equation, the Fermi Paradox, and the *Rare Earth Hypothesis*, unifying them with an assessment of the survivability of the species in the near and far term. The chapter concludes that a reorientation of European society to space development is beneficial, as most conducive in this case to biological survival.

Chapter II discusses the civilizational world order and examines the state of the West in and of itself, finding it in sufficient decay as to make continued existence in a recognizable form unlikely by the end of the century. Distressingly, just as environmental pressures and population explosion are greatest in those parts of the world least able to bear further strain, civilizational decay and decline are most *pronounced* in those most capable of making a benevolent difference on the widest scale. With this in mind, the chapter proceeds with an analysis of how and why *Tsiolkovsky's Imperative*, executed full force by Europe and the West in a timeframe in which it is still possible, becomes not only the reinvigorator of the civilization, and key to the European Union's problem of dividedness, but its most charitable exponent as well.

Chapter III brings back the discussion of the civilizational world order, but instead of focusing directly on the West, it looks at inter-civilizational relations. It weighs the geopolitical climate to determine if it is necessary for the EU (and the West as a whole) to embed itself in the space frontier strictly for reasons of security and military objective. With many other civilizations developing hi-tech aerospace, astronautic and earth observation equipment, many observers are already noticing the militarization of space. This chapter finds that with the collapse of the Cold War bi-polar order, because the world is becoming more terrorized, re-tribalized, and populated with the presence of new industrial powers, investment in Western air and space dominance is required in order to maintain even minimal peace and security. By extension, it argues that a new '2nd Space Race' has begun, and that it must be won by the West in a way that happens to exactly coincide with the *Imperative*; that is to say, peacably. Concluding, it suggests how this can be done in a spirit of cooperation, but not without competition.

Chapter IV accepts the notion that Western policy and its strength are the lynchpins deciding whether the best hopes for humanity's success in the 21^{st} Century are realized, or not. Combining the three areas of research, this chapter analyzes how *Tsiolkovsky's Imperative* can be carried out in a manner satisfactory to each, recognizing they each have their own sets of objectives containing important goals for the prosperity and security of Europe, the West and the globe that we are compelled to share.

This work is derived largely from authoritative sources covering a wide spectrum of topics brought together to demonstrate how its primary thesis is not only subjectively good for the continuation and improvement of the West, but how it is essential. It draws primary inspiration not from political ideology but empirical evidence. Though theoretical, it relies on fully verifiable data and statistics. At times it considers precedent, from the geologic record to the fall of Rome, as prima facie evidence in arguing for the validity of its conclusions.

Conceptually, it is indebted to Samuel Huntington's *Clash of Civilizations* model for understanding geopolitical trends, Allan Bloom's study of educational mores, the analyses of Jacques Barzun, Roger Scruton, Steve Sailer and Theodore Dalrymple on the topic of Western society, Ward and Brownlee's *Rare Earth Hypothesis* as offering a sound explanation of why 'first contact' has not been made, Sir Martin Rees' survey of big problems and Robert D. Kaplan's observations of the re-tribalization of much of the world and the absolute necessity of Western air and space superiority.

Combing the three strains, it will be shown how and why correctly activating and promoting the ESA is vital for the European Union to give itself the sustaining vision it is trying to find. By demonstrating how its powers of organization are beneficial in a very public way, by fulfilling a vision publicly accepted as a 'greater good,' the EU can demonstrate itself to half-abillion people in its Member States within the context of their own national interests, while at the same time, revealing itself once again within the Western World, and again within its global role, as the political inheritor of Athens, Rome, Aix-la-Chapelle and the Westphalian Order. This thesis question and the answer supplied are long overdue, as it is becoming less 'if we can change policy to achieve the best' and more 'if we can change it to avoid the worst.'

There is one way to do both.

"Two possibilities exist: Either we are alone in the Universe or we are not. Both are equally terrifying."

-Arthur C. Clarke

CHAPTER I EXISTENCE AND OBLIVION

There is a dizziness that comes over someone trying to experience the totality of the universe through use of the imagination. Part of that dizziness comes from the preposterous sizes involved, another part comes from realizing we are moving very fast in five directions at once. Assuming a 'sitting still' position, one is:

- 1. Turning with the Earth around its axis at a speed of $1,670 \text{ km/hr}^{11}$
- 2. Orbiting the Sun with the Earth at a speed of $107,000 \text{ km/hr}^{12}$
- 3. Orbiting the galactic core with the Sun, at a speed of $810,000 \text{ km/hr}^{13}$
- 4. Moving with the galaxy within its 'Local Group' at a speed of 144,000 km/hr¹⁴
- 5. Moving with the entire 'Local Group' through the universe at 1,332,000 km/hr¹⁵

Similarly, uninhibited reflection concerning time requires abandoning the human scale in favor of the geologic, within the frame of the cosmic. According to the most widely accepted theory of how Homo sapiens originated, we evolved along with the other living things down through the ages from a universal common ancestor, begat from ancestors which were begat from lifelessness in the ooze of the early Earth, around 3,500,000,000 years ago. All the species of life ever known to us have lived on this planet. There is no evidence of life anywhere else, as of yet. When Copernicus removed humanity from the center however, the question of 'the other' began to be asked, namely, if there are other kinds of life out in space.

¹¹ At the equator- velocity gets progressively less as one moves towards the poles, See: Ohio State University, Department of Astronomy, *Movements of the Earth*, 03/08/06.

¹² *Ibid*. With respect to the Sun.

¹³ Ib id.

¹⁴ Moving towards the center of our local group of 30 galaxies, the group itself as an island. See: Wilson, Robert, A., *The Cosmic Microwave Background Radiation*, Nobel Lecture, 1978, pp. 18.

¹⁵ With respect to the cosmic background radiation, relatively uniform throughout the visible universe, or put another way, 'as the universe expands.' The absolute speed is actually faster, but the speed within the local group goes 'against' the absolute speed of the entire group, *Ibid*. For practical purposes, the speed of tectonic plate movement, around 2 cm/yr, has been omitted. To all of these may be added the speed of the human being relative to the earth, whether on foot, in tram, car, train, plane or otherwise.

1.1 IS THERE ANYBODY OUT THERE?

Beginning in the 17th Century and continuing through the 19th, most educated people assumed the stars were suns surrounded by other planets, inhabited, as it were.¹⁷ People did not laugh at speculation of this kind, in fact, it was a commonplace idea, many assuming, 'God would not have created the stars merely for people on this one small planet to look at.¹⁸ This assumption brought an exciting flux to earthly matters, placing them within a greater context, but fell out of academic favor in the Interwar Period. A great many, however, continued with the conjecture that even nearby planets hosted life. Venus was widely imagined to be a tropical Earth, perhaps with dinosaurs, and Mars, crisscrossed as it was with 'canals,' was thought to harbor Martians to the extent that the War of the Worlds scare of 30 October, 1938, was possible in an industrialized country. The canals were eventually found (by the spacecraft Mariner-4 in 1965) to be ancient river valleys, formed by running water in times gone by.¹⁹

By the mid 20th Century, Frank Drake, now with the University of California, concocted the most accepted mathematical formula for the probable number of inhabited worlds with intelligent life able to communicate using at least radio astronomy. He confined the parameters to the Milky Way Galaxy alone, and found very many. Briefly, the equation is as follows:

 $N = R^* \times f_p \times n_e \times f_l \times f_i \times f_c \times L$

Meaning: N, or the *number* of extraterrestrial civilizations with whom we can communicate = the *rate* of galactic star formation x the fraction with *planets* x the number of *life-friendly planets* \mathbf{x} the fraction which grow life \mathbf{x} the fraction which evolve intelligent life \mathbf{x} the fraction with at least radio astronomy \mathbf{x} the average lifetime of such a civilization possessing this power.²⁰

The original Drake Equation from the 1960s, revealed N = 10,000 or so alien civilizations fully capable of radio astronomy or better, within our galaxy. Today, with over 200 extrasolar planets confirmed found and a multitude of new ones waiting to be located with more sensitive instruments, Drake speculated the number to be much higher in 2004.²¹ Carl Sagan

¹⁶ With apologies to Pink Floyd

¹⁷ See: Engdahl, Sylvia, The Planet-Girded Suns: Man's View of Other Solar Systems, Atheneum, 1974, p.2-8. ¹⁸ Ib id

¹⁹ The Opportunity Rover has found very strong evidence Mars was a wet planet. See: NASA, *The Mars* Exploration Rover Mission.

²⁰ Drake, Frank, "The ET Equation Recalculated," Wired Magazine, 12.12.2004

 $^{^{21}}$ Ib id

optimistically considered it to be in the millions, given that most are able to survive their 'nuclear adolescence,' a situation currently plaguing our own disgruntled affairs.²²

The fact remains however, that right now N = 1, not 10,000, 50,000, 'millions,' or any other value, not even 2. If 10,000 or more fully capable civilizations share with us this galactic island, some must be more technologically advanced than human beings- after all, earthlings have only had radio astronomy since 1937. We have not, so to speak, 'emerged from our cradle,' but others must have. Many scientists believe the light speed barrier explains lack of visitation, as Einstein's Special Theory of Relativity argues it cannot be broken. If true, we may never meet others, except if they happen to live nearby, such as in the neighboring Alpha Centauri system.²³ Direct visitation aside, the matter of no signals is troubling. In our brief time we ourselves have sent signals to nearby star clusters within the galaxy, and at least four of our probes are speeding out of the Solar System, bearing messages from Earth universally recognizable using mathematical symbols. Many radio telescopes have been listening for a sign of life.

Nuclear physicist Enrico Fermi was an acute observer of reality. He noticed a paradox based exactly on the large numbers involved (two hundred fifty billion stars in our own galaxy and 70,000,000,000,000,000,000 in the observable universe) against the fact that right now, N=1. These gargantuan numbers should yield more, he argued, as the odds against a multiplicity of civilizations are simply extraordinary. In essence, the question becomes, 'if there should be so many sentient civilizations sharing the Milky Way, and a far greater number outside of it, where are they?'²⁴ The Fermi Paradox also considers age and time, noting that because the Milky Way is 13.6 billion years old (the universe itself is 13.7), a *lot* of time has elapsed for 'interstellar civilizations' to have sprang into being, spreading around relatively nearby to us. Yet, N=1.²⁵

Many reasons can be devised as to why, most prominently the light speed barrier but also communication difficulties in relation to time and distance or aliens simply not wanting to be seen. Also, the fact is that a 'galactic civilization' would have had to visit our Sun in the time *it* has existed, which is 4.6 billion years, only 1/3 of the time the galaxy itself has. If a 'galactic civilization' had come and gone before the Sun formed, there would be no relics in our neighborhood.

²² See: Sagan, Cosmos, Ch. 12.

²³ This nearest star (4.3 Light Years away) is most interesting. No planets have been detected but may in the coming years. It contains three stars, the two major ones like our Sun, twirling around each other, and both with their own habitable zones (places good for Earth-like planet formation) while the third star, a red dwarf, orbits the other two a long distance away and had very little effect on the system as a whole. See: NASA, *Alpha Centauri: The Closest Star System*, NASA Online, 04/08/06.

²⁴ Craig, Andrew, 'Astronomers Count the Stars, 'BBC News, 22 July 2003.

²⁵ European Southern Observatory, Press Release, 17 August, 2004

Seen another way, the paradox underscores something exceptionally important for humanity: it may exist because we *are* alone. If sentient life really is a unique or exceedingly rare event, us existing against such odds means a great deal, even going so far as to restore humanity's pre-Copernican extraordinariness. In a religious dimension, it may be argued that God created us, and only us, uniquely.²⁶ In a purely secular dimension, we would have to be considered the result of a great cosmic accident.

²⁶ The church's position has culminated in John Paul II's *Message to the Pontifical Academy of Sciences in 1996*: "New findings lead us toward the recognition of evolution as more than an hypothesis," adding, "Theories about evolution which regard the spirit as emerging from the forces of living matter, or as a simple epiphenomenona of that matter, are incompatible with the truth about man." Faith and scientific findings about the physical appearance of human beings are not in conflict- but God is solely responsible for our spiritual nature. According to Pope Benedict XVI, "We cannot say 'creation or evolution' inasmuch as these two things respond to two different realities. The story of the dust of the Earth and the breath of God does not in fact explain how human persons came to be, but rather what they are."

1.2 A CONSPICUOUS LACK OF INTELLIGENCE

An idea articulated in 2000 by Peter Ward and David Brownlee, called the *Rare Earth Hypothesis*, establishes a powerful argument for the vindication of intelligent life's rarity, helping to explain the Paradox and N=1.²⁷ The authors analyze the bizarreness of the Earth's situation from largely observable data, but trace in the history of the Earth what may be a unique kind of developmental circumstance, simply not replicated elsewhere in the same way. They argue that geographically, most parts of galaxies are inimical to life, through a combination of lack of metals on the outside and too much radiation near the core, where most of the stars are. Within concentrations of stars anywhere, meanwhile, too many of them blow up in supernova explosions or even gamma-ray bursts, destroying the conditions of life by irradiating atmospheres. Conversely, sparse areas with not enough supernova remnants create metal-poor regions of space, and no metals means no terrestrial planets like the Earth.²⁸ In only a few oases then, located in small 'galactic habitable zones,' can life arise and be given the time necessary to develop into an intelligent form. Only 5-10% of the stars in the Milky Way are in this habitable oasis zone, one of which is the Sun.²⁹

These figures alone would lower significantly most variables used in the Drake Equation, but there are more layers of special circumstance surrounding our existence. The Sun's position in the celestial order says nothing about, for instance, its composition. While textbooks say the Sun is a 'regular, middle aged, medium intensity star,' Ward and Brownlee find it not so 'regular' at all- noticing only 5% of stars are like it, and not all located in habitable zones. These rare stars feature the medium size necessary for life: Red Giant stars radiate too much and burn out their supply of fuel quickly, while dwarf stars smaller than the Sun tidally lock one side of planets in their small habitable zones, much like the Moon is locked with one side facing the Earth all the time. The forever hot and cold resulting is not conducive to oceans and life.³⁰

Our Solar System's dominant planet is Jupiter. *Rare Earth* assigns a special role to Jupiter, arguing that having a giant planet like it in the neighborhood is essential for life because it 'clears' the star system of comets, asteroids, meteoroids and debris, lowering the number of impacts on terrestrial planets. However, enough impacts must occur, they argue, in the early phases of formation, to bring water. Our oceans for example, were brought as ice on the many

²⁷ See: Ward and Brownlee, *Rare Earth: Why Complex Life is Uncommon in the Universe*, New York: Springer-Verlag, 2000.

²⁸ See: Lineweaver, Charles and Finner, Yeshe, "The Galactic Habitable Zone and the Age Distribution of Complex Life in the Milky Way," *Science*, 1995, number 303: 59-62. A Gamma-Ray Burst is a mysterious event that occurs when two collapsed stars collide.

²⁹ Ward and Brownlee, p. 32. With the 5% figure coming from a 2001 study by Guillermo Gonzalez at the University of Washington Dept. of Astronomy.

³⁰ Ward and Browlee, p. 47

comets that impacted Earth.³¹ These same gas giants meanwhile, can be a curse for the terrestrial worlds if their orbits are irregular, causing gravitational instability. Jupiter is both far enough away and stable enough to have helped cleared the system while remaining unthreatening to the orbits of Mars, Earth, Venus and Mercury. At the same time, the Asteroid Belt beyond Mars, perhaps our sister planet that never was, was precluded from accretion by Jupiter's gravity.³²

Rare Earth moves on to consider the Earth's position itself, lying as it does just inside the 'solar habitable zone' interior ring, while Mars orbits at its outer. Earth's size, mass and gravity are factors.³³ Water is a factor; and yet it boils and freezes so easily (100 degrees Celsius is an extremely small temperature window).³⁴

None of these 'lucky' variables like stellar and planetary positioning, size and consistency, explains why other 'earths' around stars like the Sun (5% of the galaxy), or even Mars when it was warmer in the past, do not likewise evolve intelligent life. Though perhaps rare, planets like the Earth surely exist- but something else has to happen within the parameters of an ideal place in space, and here Ward and Brownlee reiterate the image of a scene so shocking, it almost seems like a miracle. Though almost any random sample of people aside from astronomers themselves will likely be unfamiliar with the following theory, the standard and most widely accepted explanation for the origin of our own Moon is that it began as another terrestrial planet, which, in an cataclysm that took place not long after Earth's accretion, actually collided with Earth itself.³⁵ It did not strike directly at the equator (destroying both worlds) or skim the polar area, but struck somewhere in the mid-latitudes. In this collision, Earth was almost destroyed but held together while the impactor was incinerated, its heavier remains falling into the Earth and its lighter material entering a stable orbit as a ring. After coalescing rather quickly, this reconstituted body became not only our Moon, but also a further condition for later intelligent life.³⁶

The 'Giant Impact Theory' explains a lot about the Moon and the Earth, such as the reason Earth is so dense and metal rich, and why it is significantly tilted, giving us the seasons. As for the Moon, *Rare Earth* says its tidal pull originated plate tectonics here, which brings up magma and granite rock through convection, just as it moves the water of the oceans. The

³¹ It is thought that water was brought to Earth from comets and meteoroids during the Late Heavy Bombardment phase during the Hadean Eon (See Appendix-1).

³² Ward and Brownlee, 238

³³ Ward and Brownlee, 36

³⁴ Even though Earth has far less greenhouse effect than Venus, according to Rare Earth, it raises the temperature by 40 degrees Celsius from what it should be.

³⁵ 34,000,000 years after, a 'blink of an eye' on these scales. Ward and Brownlee, p. 314. One is tempted to draw a comparison between Ouranos and Gaia, only Ouranos would be the Moon, not the sky. In any event, could it be that the Moon and the Earth mated physically and brought forth intelligent life? ³⁶ *Ibid*

crunching and forming of continents and continental shelves created good places for life to develop. Another mystery it solves is the fact of the very strong magnetic field coming from the Earth, which is lacking on Mars, Venus and Mercury, thanks to Earth's super dense, metal-rich core. The Moon's heavy elements would have been the first to gravitate into the inferno Earth, and the resulting magnetosphere protects the biosphere from solar wind, radiation, UV, and other harm.

One thing immediately surprising about life on Earth is how quickly simple forms came into being (after 750 million years or, only 100 million after solidification of the crust). It was much faster for 'nothing' to become 'something' in comparison with how long it took that simple unicellular life to become complex and multi-cellular (a full 3,200 million years later).³⁷ This second gap forms the basis of *Rare Earth*'s argument that intelligent life is amazingly more infrequent than simple life (See Appendix-1).

Special factors in Earth's history, many involving disasters such as full glaciation when the entire planet was iced over, fluctuating levels of oxygen and carbon dioxide in the atmosphere, plate tectonics and the impact of space objects, are seen to have 'sped up' evolution of intelligent life by destroying what came before.³⁸

After considering all of these unique circumstances, *Rare Earth* seems a bit heavy on 'perfection.' With the examples of hot Venus and cold Mars so near, perhaps we do think of Earth as 'the perfect place,' or 'just right,' by nature. After all, evolution makes it clear that we grew up to fit in our surroundings, and thus it makes sense that we are biased in favor of them, but *Rare Earth* disregards even this, claiming the matter is in fact, not relative at all. While the argument can be made that had we evolved on Mars, we would no doubt be calling Mars 'the perfect place,' *Rare Earth* says the point is moot because intelligent life simply would not ever have formed on Mars, or even a slightly different Earth. Take out even one variable, plate tectonics, stellar positioning or super-metallic core, and all is lost. The next section turns to the implications of this loneliness and the danger inherent in it, before discussing the appropriate response and responsibility of the European Union.

³⁷ See: Dawkins, Richard, *The Ancestor's Tale: A Pilgrimage to the Dawn of Life*, Houghton Mifflin, 2004, pp. 579. Earth is 4.567 million; life is 3.800 million, multi-cellular life 600 million years old.
³⁸ See: Dawkins, 170. Among astronomical events influencing intelligent life on Earth, the most famous is that which forms the Cretaceous / Tertiary or 'K/T' Boundary, when an object collided with Earth eliminating all dinosaurs but allowing some mammals to survive, diverge and adapt to new niches. Dinosaurs were great and diverse beasts, but not intelligent life capable of radio astronomy. They ruled for over 160 million years stagnantly, without developing sentience, the ability to use tools or fire, let alone critical analysis. Mammals in their time developed into hominids and Homo sapiens, who after 250 thousand years as a species, developed space flight. Arguably, if there were no asteroid impact, dinosaurs would still rule, and would not have developed radio astronomy, as the previous monsters living before them also failed to do, before their own mass extinction.

1.3 EVALUATING THE DANGER FROM COSMIC SPACE

We live in an age of wonders. At the same time it is an age mercifully bereft of the kinds of extreme events common by the historical standards of the planet.³⁹ If the loneliness of life as illustrated by the *Rare Earth Hypothesis* legislates a further look at that life's history of travail while on this planet, asking 21st Century Europe to further its reach into the outer space environment, at considerable public investment, demands it.

Since its inception, living matter on Earth has had a bumpy ride, coming terrifyingly close to being sterilized more than once. Recalling that non-microscopic organisms have only been around for the last 600 million years, life's window as a significant form is revealed as conceptually short. This part of geologic time is called the Phanerozoic Eon ('eon of visible life'). It consists of three eras: Paleozoic, Mesozoic and Cenozoic (See Appendix-1). The eras betray the fact that overarching events and changes must divide them, most apparent is nothing less than the wholesale replacement of one dominant form of life by another. The amphibians of the Paleozoic gave way to the reptiles of the Mesozoic, which gave way to the mammals of the Cenozoic.

The Paleozoic Era ('early life') saw many iterations, known as the Cambrian, Ordovician, Silurian, Devonian, Carboniferous and Permian periods. Through these, many forms of advanced multi-cellular life had come to pass, many kinds of Earthly environments warm and cold, came and went. Extinctions occurred, but the widely diversified prehistoric monsters that survived seemed to be doing well until the end of the Permian Period (250 million years ago), when something went wrong:

Abundant and varied fauna and flora bear every mark of success [at the end of the

Permian], both in the ocean depths and on the emergent land. Yet almost all at once, 250

million years ago, a catastrophe caused 90% of all species to vanish forever.40

The remaining 10%, while not extinct, were decimated in absolute numbers. Perhaps 99% of living matter was obliterated by this event, at the 'P/T (Permian-Triassic) Boundary.⁴¹ The mass extinction was enormous. It eventually led to the dinosaur age by erasing almost everything that came before, but when we ponder the ultimate fate of the dinosaurs, and the fact

⁴⁰ Courtillot, pp. 89.

³⁹ See: Courtillot, Vincent, *Evolutionary Catastrophes: The Science of Mass Extinction*, Cambridge Univ. Press, 2002, pp. 34. By the end of the first eon (the Hadean, 4,567 - 3,800 million years ago), a phase called 'Late Heavy Bombardment,' had run its course, bringing the water of the oceans to Earth while Jupiter continued 'cleaning up' Solar System debris. Geologic time began with the crusting over of the inferno (3,100 million years ago), with life arising soon afterward.

 $^{^{41}}$ Ib id.

that other periods began or ended with major disruptions of biological life, the terrible pattern comes into focus, and we must look again at our relationship to space.⁴²

Space may be a part of our environment as much as the atmosphere or the world ocean, but no species until ours has been able to recognize this. Just as we live in air, we live in space. It has been argued here that space events like meteor showers are as 'natural' as rain showers. Indeed, events affecting the biosphere originating in the exosphere are a 'part of nature' as much as those originating in the atmosphere, hydrosphere or lithosphere. For example, hurricanes decimating lonely islands and great cities, freak volcano eruptions and tsunamis, of the kind that happened to Pompeii in 79 AD or Indonesia and Thailand in 2004, should not be thought of as different than impact events falling on Earth from space, as space is just as much a part of our natural world as any.

What has constituted the extinctions caused by astronomical circumstances is best understood when examining the end of the dinosaur age, the Cretaceous-Tertiary or 'K/T Boundary' event.⁴³ For a long time the cause was unknown, and then in 1980, Nobel Prize winning physicist Luis Alvarez found that high doses of iridium (rare on Earth, common in meteors) was replete throughout fossils and rocks from the end of the Cretaceous, hypothesizing that a great space impact must be the cause.⁴⁴ Ten years later in Chicxulub, Mexico, a massive crater was found bearing the date 65 million BC.

The object, which hit the Yucatan Peninsula, was a comet or asteroid 10km in diameter. Volcanology Professor Bill McGuire of University College London explains what happened when the object hit:

It created a fireball that vaporized the ocean... shock waves blasted upwards, tearing the atmosphere apart and expelling over 100 trillion tons of molten rock into space, later to fall across the globe. Almost immediately, an area bigger than Europe would have been flattened and scoured of virtually all life, while massive earthquakes shook the planet. 'Hypercanes' would have ripped the landscape apart, joining forces with huge tsunamis to batter coastlines. Even worse was to follow. As the rock blasted into space began to rain down across the entire planet, so the heat generated by [their] re-entry irradiated the surface, roasting animals alive as effectively as an oven grill, laying waste to the world's

⁴² See: Courtillot, pp. 10, 172. The first mass extinction occurred at the Cambrian-Ordovician junction (488 million years ago); its cause is not fully understood, but it eliminated many trilobite and brachiopod species. The Ordovician also ended with a mass extinction (444 million years ago) that obliterated many of the same families affected in the previous one, and began the Silurian. The Silurian ended peaceably but the Devonian ended (360 million years ago) with an extinction claiming 70% of all species, followed by the terrible P/T Boundary extinction (251 million years ago). The Mesozoic continued the pattern, the Triassic ending and the Jurassic beginning with an extinction eliminating all large amphibians and many older style dinosaurs forever (200 million years ago).

 $^{^{43}}$ K/T is standard for Cretaceous / Tertiary boundary, or else, when the Mesozoic became the Cenozoic Era.

⁴⁴ See: Department of Planetary Sciences, Understanding the Chicxulub Impact Event

forests and grasslands and turning fully a quarter of all living material to ashes. Even more was to come. In the following weeks, smoke and dust in the atmosphere blotted out the Sun and brought temperatures plunging as much as 15 degrees Celsius. In the growing gloom and bitter cold the surviving plant life wilted and died while those herbivorous dinosaurs that remained, slowly starved. Life in the oceans fared little better as poisons from the huge quantities of sulfur injected into the atmosphere poured in, wiping out three-quarters of marine life. After years of freezing conditions, the gloom would have lifted only to reveal a terrible Sun blazing through the tatters of an ozone layer torn apart.⁴⁵

That was 65 million years ago. As the most recent investigations suggest the Mexico crater is only one of at least four others (located in Canada, Brazil, Ukraine, and at the bottom of the North Sea), all dating from the same time, it seems clear the comet or asteroid broke apart before impact, then proceeded along the lines McGuire describes, ending the Mesozoic Era.

If the K/T Boundary extinction was caused by a space impact, what of the even greater extinction at the Permian-Triassic or 'P/T Boundary,' which ended the Paleozoic? The P/T Boundary Event had no well-defined cause and was much more baffling until recently, when in June 2006, under the ice of Antarctica, scientists using NASA satellites discovered a crater hidden there the size of Hungary. It was caused by an object perhaps 50km wide, which would have caused a similar maelstrom when it hit. Though further research is forthcoming, it should not be a surprise if the timeframe of this impact is revealed as squarely at the P/T Boundary, 251 million years ago.⁴⁶

Whether the 'Wilkes-Land Crater' turns up guilty as the destroyer of 99% of late Paleozoic life, or not, soothsayers, the bashful and those detached from reality will still see great extinction events as things that happened in the distant past, not as a present, constant, threat.⁴⁷ But there is no better case of ignoring Spanish essayist George Santayana's warning, '*Those who cannot remember the past are condemned to repeat it*,' as the chances are exactly 100% that the Earth will be devastatingly struck not once, but many, many more times in the future.⁴⁸

The issue was temporarily raised to public consciousness in 1993-94, when a comet, Shoemaker-Levy 9, was found to be on a direct course to impact Jupiter. With the Hubble Space Telescope and others all around the world trained on it, the comet split into many pieces before

⁴⁵ See: McGuire, Bill, *The End of the World*, University of Oxford Press, 2002, p. 161. Actually 65.5 million years ago.

⁴⁶ See: BBC News, *Big Crater seen beneath Ice Sheet*, 3 June 2006- There are also impacts from around 250 million years ago in Australia's continental shelf, leading some to speculate that just like the K/T Boundary, the P/T object broke up before striking Earth.

⁴⁷ This is the so-called 'Wilkes Land Crater,' found to have occurred between 100 and 500mya. BBC News, *Big Crater seen beneath Ice Sheet*, 3 June 2006.

⁴⁸ McGuire, p.109

jolting our neighbor, with the largest (2km) fragment striking with the force of 8 billion atomic bombs, 'scarring the giant planet's atmosphere for months' (see Appendix-2).⁴⁹

Hollywood responded to the shock, launching blockbuster feature films based on the notion that a Shoemaker-Levy 9 type comet was coming for Earth, instead of Jupiter. *Deep Impact* (1998) saw humanity in shambles as a team of Americans and a Russian went out into space to nuke the comet in a new ship 'made in secret' allegedly of advanced technology. *Armageddon* (1998) saw a team of roughneck oil drillers drafted into NASA, utilizing their skills to burrow into the comet, also to nuke it, getting there in two hi-tech ships that, again, do not really exist. This film grossed 500 million dollars, none of the money going to combat the actual possibility of an impact event. The lesser-known *Asteroid* came out in 1997, featuring humanity's on-Earth response, which did not amount to much.⁵⁰ National Geographic meanwhile, also in 1997, produced a popular documentary film called, again, *Asteroid*. Public concern encouragingly spread to the US Congress, which mandated that NASA locate all near-Earth objects over 1 km in diameter by 2008. Since 1998, interest has fallen in the public sphere, but the threat remains as real as ever (see Appendix-2).

A bizarre psychology has developed in modern times with regards to the impact threat. Large-scale 'extinction-level events' are dismissed due to their rarity, as we believe ourselves insulated from the threat by time. Conversely, the atmosphere physically insulates us from the small impacts actually happening everyday. As far as middle-range objects go that both occur relatively frequently and can cause major damage, their threat is ignored, because statistically 75% of these disappear under the surface of the world's oceans, while those that do hit land tend to strike desolate areas like Siberia, Canada, Arabia and Australia. This latter phenomenon is only describable as mere dumb luck.⁵¹

Terminologically, a 'meteoroid' is an incoming object less than 50m in diameter, while an 'asteroid' is one over 50m. As the terms are a matter of size, comets originating in the outer Solar System and coming in periodically are included based on their size, usually 'asteroids'.

Small meteoroids between the size of a pea and a tennis ball hit the Earth on an average of every 5 minutes. They do no damage and burn up as 'shooting stars.' Soccer ball and boulder-sized objects hit an average of once a month, also burning up, but larger meteoroids the size of cars and houses have a chance of actually striking ground or sea, and do on average three

⁴⁹ McGuire, 26

⁵⁰ See: Tamm, David, J. "Movies about Space and Time Travel," City of Hudson Arts, 2006.

⁵¹ A sense of the true rate of impacts has been sought in Central and Eastern Europe by Col. M. Mroczkowski and his colleagues. See: Mroczkowski, Col. Maciej, Jach, K., and P. Wolański "Czislennoje modielirowanije procesow stolknoweni bolszich asteroidow s Zemlej" (Numeryczne modelowanie procesów zderzeń wielkich asteroidów z Ziemią, eng. Numerical modeling of processes of large asteroids impacts onto the Earth), International Conference: I–e Wsechsojuznoje Sowieszczanije po temie "Asteroidnaja opasnost", 10.11.1991, Sankt Petersburg, Russia.

or four times per year, sometimes leaving craters and causing local damage. As far as asteroids go, even the smallest (50m diameter), would destroy a regular sized city should it, and its shock wave, impact one, while a 100m asteroid would incinerate and irradiate a large city such as Washington or Brussels, along with everyone in it. Smaller asteroids seem to strike every hundred years or so, the last arriving in 1908 as the so-called 'Tunguska Event.' Thought to be an incoming comet approximately 60m in diameter (making it a small asteroid in size), the 'event' flattened over 2,000 square kilometers of the Russian Empire east of the Ural Mountains.⁵²

In 1947, an impact by a smaller object, a meteoroid, left a 26m crater in the mountains of the Soviet Union's Primorsky Krai (Maritime Province). As recently as 2002, yet another meteoroid struck the Russian Federation, this time in the Irkutsk Oblast. With no casualties, the latter two were quickly forgotten.⁵³ McGuire, however, tracing the time zones, points out that had the Tunguska Event happened four hours later, St. Petersburg would have been its 'ground zero' instead of western Siberia.⁵⁴ A short time later and it could have flattened Helsinki, Stockholm or Oslo, in which case the subject would be treated today with the seriousness it deserves, less the city hit.

Larger asteroids (in the 100m range, bigger than the Tunguska Event) are thankfully less frequent.⁵⁵ These are arriving every 1,000 years or so, while very large 500m asteroids are even less common but wreck havoc on areas the size of countries. On a global scale, the real trouble starts at 1km. This size is known as the 'critical threshold' for asteroids, where the collision has worldwide consequences amounting to serious and rapid changes in the entire ecology.⁵⁶ Through the 1998 congressional mandate, NASA has already located 80% of the 1,000 or so 1km near-Earth objects- a search expanded in 2005 to find all objects down to 140m by 2020.⁵⁷ Unfortunately, this does not end the danger.

The asteroid or comet which was the primary dinosaur killer was around 10km.⁵⁸ Comets are especially dangerous because of their higher speed than regular asteroids (around 70km/second), and the completely unpredictable nature of their orbits. A large one bringing an

⁵² McGuire, Bill, 67, and Tunguska Event Museum, "About Tunguska," 06/08/06.

⁵³ Also forgotten are the 1965 Revelstoke, Canada, 1993 Dubbo, Australia, 2000 Whitehorse, Canada and 2003 Park Forest, Illinois meteoroids. More recently in 2006, a meteoroid struck northern Norway in the mountains. All these events were very small compared to the Tunguska Event, and most are 'airbursts' leaving nothing on the ground except a blast area. See: University of Calgary, *Canadian Meteorite Catalog*, 09/08/06.

⁵⁴ McGuire, 165-167

⁵⁵ Ibid. Also, the monks of Canterbury Cathedral in England witnessed a great impact event on the Moon in the year 1178, perhaps one of the thousand year strikes, luckily the Moon got it instead of Earth. ⁵⁶ McGuire, 75.

⁵⁷ See: NASA, Near-Earth Object Program, 10/09/06.

⁵⁸ McGuire, 172.

extinction level event most probably will only come with a six months warning time, unstoppable with current strategy and equipment.⁵⁹ To this grim scenario are added various observations on 'cycles' of extinction events, attempting to place a pattern on their occurrence. Various theories are put forth, such as periodic disturbance of the 'Oort Cloud' by the Sun's galactic transit, sending groups of large comets careening into the inner Solar System. Many of these projections place the Earth squarely at the beginning of an 'active' period.⁶⁰

Europe has a responsibility to step into its proper place in the cosmic order. Without the advanced technology and ships of Hollywood imaginings, any hope of planetary defense is in vain. Pursuing *Tsiolkovsky's Imperative* carries with it an ever-increasing ability to protect the planet. Tsiolkovsky himself called Earth our cradle, a place to overcome and grow out of, while Sir Martin Rees, Astronomer Royal of the United Kingdom, considers the same. Compare the idea of the 'cradle' with the allusion he makes to a continuous progression made by historic life, from sea, to land, to space:

The first aquatic creatures crawled onto dry land in the Silurian era... they may have been unprepossessing brutes, but had they been clobbered, the evolution of land-based fauna would have been jeopardized... This [spreading off the Earth] would be as epochal an evolutionary transition as that which led to land-based life.⁶¹

A literal reading of the Bible says this creation we live in was prepared exactly for us. Copernicus began a new worldview that, while not negating the extraordinariness of our specific creation, opened the door for speculation that many others could exist as well. *Rare Earth* vindicated our rarity due to the paucity of suitable worlds for intelligent life to grow up on. It makes no assumption as to a higher power or lack of, and while not going so far as to say Earth is the *only* possible arena for intelligent life, argues 'earths' almost never happen. Either way, our best data says N=1, which carries with it a startling warning: if we are the only ones, pointed care must be taken in how we live out the 21st Century. Aside from the saving power of a higher authority, humanity is left to defend itself alone, gliding through the heavens in the ephemeral biosphere of a gleaming blue cosmic orb.

⁵⁹ McGuire, 159

⁶⁰ European Space Agency, Space Science: Comet Pioneer Jan Hendrick Oort. 08/08/06.

⁶¹ Rees, Sir Martin, Our Final Hour, Basic Books, 2003, pp.181-183.

1.4 JUDGEMENT DAY AND OUR FINAL HOUR

The events treated above have been shown to carry the same message: that humanity has survived against the odds, but that this survival is tenuous; that nature is merciless; that it is only a matter of time before the next Tunguska Event happens somewhere other than Tunguska. Yet, investing in space development for the protection of the Earth is only the most obvious benefit from the reorientation- the next chapter will outline its effects on education, the middle classes, social order and moral constitution of the individual. This section, meanwhile, takes a closer look at the dynamics of modern science and human survivability.

In 1980, Carl Sagan famously said that humanity must overcome a 'technological (nuclear) adolescence,' meaning that 'our moment' is critical in the survival continuum of any hypothetical technological species. According to the top minds of our day, that adolescence is not over- it did not pass with the Cold War. Sir Martin Rees, president of the Royal Society, as well as Stephen Hawking and many others are in fact *adding* things to Sagan's list. The runaway effects of bio and nano-technology, as well as the erosion of the ecosphere and the possible unleashing of the ultimate terrorist attack (something that kills off all or most people), are within the realm of 21st Century possibility.⁶² Learned societies are taking the threats seriously as well. The Polish Academy of Arts and Sciences in Kraków, for example, has among its ranks a new Commission dedicated to the study of *'Threats to Civilization'* (see Appendix-3).⁶³

Luckily, the same reorientation to *Tsiolkovsky's Imperative* that brings increased space development to guard against nature brings possession of the highest technologies to officialdom, where they may be controlled to an extent, and used for benign, defensive and diffident purposes.⁶⁴ Though many negative charges can and should be leveled against our large modern federal structures (US, EU, NATO, Russian Federation, UN), especially the kind of dystopianism outlined in the next chapter, they are still the organizations most likely and best suited to possessing space power, as executed through modern agencies and increasingly,

⁶² See: Rees, Martin, Our Final Hour, Basic Books, 2003, pp. 55-57.

⁶³ Polska Akademia Umiejętności, *Handbook: Statement of Purpose*, 2004. In its statement of purpose, the Commission reminds us, 'For most people, threats to civilization are associated first and foremost with the improper utilization of the results of scientific research, and with the growth of technology and industrial activities that are harmful to the environment. However, threats to the future of humanity also lurk in climatic changes, population growth and the appearance of new diseases... Ethical evaluations are not applicable to the results of scientific research, for which the sole evocative criterion is scientific truth. The evil dwells within ourselves, and this is what causes research results to be used to the detriment of humanity.'

⁶⁴ Present circumstances notwithstanding

militaries.⁶⁵ As well, they are the only entities with the coordinating capability, through their ability to amass vast human and material resources, to execute planetary defense.

In addition, an intangible positive outcome is had when things recognized as 'in the public good' are officially encouraged. Even if it is a faux encouragement, or else, 'the tribute baseness pays to culture,' it provides a structure for people and groups to act within, as well as positive public recognition of endeavors students may aspire to. To wit, another existential benefit in reorienting European and Western society to space is the spin-off codification of science into the bureaucracy, giving the many Academies of Science around Europe their much-deserved greater say in public policy, imbedding them in institutions and law.⁶⁶ The more informed bureaucracy that results, helps gain public confidence, and helps avoid the kind of fear (in regard to science and technology) expressed in the favorite NRA slogan, 'If guns are outlawed, only outlaws will have guns.⁵⁶⁷

Being left with the structures and political realities of a relatively unified United States government and a European Union of agglomerated national-states, the task for both is to academically and publicly evaluate whether the threats presented herein are real enough to warrant major changes from the bottom-up. While most people do not know how to think about them and are completely skeptical about this unwelcome informational intrusion into their lives, a pattern emerges that high-achieving people in the hard sciences hold a near consensus in favor of the reorienting to space... at the expense of almost everything else. The way to avoid extinction they say, *the only way*, is to expand into space and become a multi-planet species, a concern outweighing all others. According to the late Carl Sagan:

Every surviving civilization is obliged to become spacefaring- not because of exploratory or romantic zeal, but for the most practical reason imaginable, staying alive. If we were up

⁶⁵ See: Harvard-Smithsonian Center for Astrophysics, *The SpaceGuard Foundation*, 10/09/06. Though in the increasingly interesting privatization of space technologies, this may change somewhat, the governments are still the bodies responsible for overall regulation and direction of space activities, which will not change.

⁶⁶ See: Weiner, Sharon, *Controlling the Proliferation of Nuclear Knowledge from the former Soviet Union*, 10/09/06. If American, European and even Russian bureaucracies and their contractors are where the best scientists find the best work, the endemic and growing problems of proliferation are curtailed. The simple evidence of Russian scientists after the fall of the USSR serves to remind that an official place is the best place. As much as the public in the US always had a healthy skepticism of structures like the FBI, CIA, NSA, the Pentagon in general and the National Reconnaissance Office in particular during Cold War times, it was also felt by the majority that in the end, these agencies would be directed to do what was best for the protection and vital interests of the American nation. Most of this 'soft confidence,' won back from the Vietnam period by the Reagan Administration, has been lost once again. ⁶⁷ NRA stands for 'National Rifle Association,' a US gun-owners group headed by Charlton Heston,

dedicated to preserving the 2^{nd} Amendment right to bear arms.

there among the planets, if there were self-sufficient human communities on many worlds, our species would be insulated from catastrophe.⁶⁸

Sir Martin Rees makes the same claim:

Humankind will remain vulnerable so long as it stays confined here on Earth. Is it worth, in the spirit of Pascal's Wager, insuring against not just natural disasters but the probably much larger and growing risk of human induced catastrophes?^{θ}

Famed astrophysicist Stephen Hawking, holder of Isaac Newton's Lucasian Chair at Cambridge, reiterated at a 2006 conference in Hong Kong:

It is important for the human race to spread out into space for the survival of the species. Life on Earth is at the ever-increasing risk of being wiped out by a disaster, such as sudden global warming, nuclear war, a genetically engineered virus or other dangers we have not yet thought of.⁷⁰

As for public officials, NASA Administrator Michael Griffin and a select few US congressmen are in the unique position. They not only occupy seats of power in government, but believe with every fiber of their being that humanity's destiny is to settle in outer space- a notion that is only flabbergasting until one begins to actually consider it, and its alternatives.

According to Griffin, the Solar System shall be colonized, and if all goes well, more humans will eventually be living off the Earth than on it.⁷¹ After citing the Moon, Mars, Jupiter's Galilean satellites, asteroids, and, especially, orbital colonies for humanity to settle on, Griffin demolishes the relativist paradigm, which takes an anti-space settlement stance in the name of a variety of faddish shibboleths:

Colonization refers to large ecologically self-sufficient habitats in space itself. Space is an environment rich in energy and resources. It is a new environmental niche, meaning, as adapted to by Homo sapiens, enables the species to transcend the 'limits of growth,' which exist when the planet Earth is viewed as a closed system. In space colonization, orbiting habitats will be built from extraterrestrial materials and will become the sites of polluting industries, which will ultimately be removed from Earth's biosphere. Cultural evolution tells us that "progress" means the capability of a species to colonize unpopulated niches. The species as a whole, not specific cultures, initiates space colonization. Uni-linear vs. multi-linear evolution is irrelevant here. In theories of

⁶⁸ Sagan, Carl, *Pale Blue Dot*, Random House, 1994 as quoted in Huang, Michael, 'Spaceflight or Extinction.' 09/10/06.

⁶⁹ Rees, 170.

⁷⁰ See: Hui, Sylvia, *Hawking says Humans must Colonize Space*, 08/12/06. To this end, Hawking outlined the necessary steps, completely doable in the current political environment, of a *permanent* base on the moon by 2025, one on Mars by 2045, and space settlements in orbit without need for support from Earth by 2100. He reechoes Tsiolkovsky's Imperative a century after its birth.

⁷¹ Griffin, Michael, Extending the Human Presence into the Solar System, 08/12/06.

cultural evolution, focus is on comparisons between cultures, and these suffer from lack of criteria by which to judge advancement of the species as an entity.⁷²

Confronted with the inevitable question about the social value of investment in space as opposed to spending the money on programs solving 'earthly' problems, Griffin's minimalist reply is noteworthy:

The amount we spend on space exploration is $7/10^{th}$ of 1% of the budget. If you paid \$8,000 in taxes, \$55 goes to space.' Thus, when critics demand to know why more is not being done to solve problems 'on Earth,' the fact is that over 99% of the federal budget is doing that. Furthermore, investing in space actually is investing in Earthly problems.⁷³

It is vital to note that all the proponents from Asimov to Zubrin understand that removing polluting industries to space and collecting energy from the Sun, so as to end dependence on fossil fuels and thereby at least the human-induced part of global warming, are main objectives of the entire endeavor. Indeed, nobody really believes all global problems will be solved, ever, with the limited and non-renewable resources of Earth alone.

Because of structural differences, the European Space Agency has no commanding position to be held by someone of Griffin's capabilities (the Director-General's chair has less potency). But this entire chapter has unfolded the premise that for all the important concerns of the enlarged EU, a very powerful and very critical one is space science. While the 7th Research Framework Programme (2007-2013) lists 'Space and Security' as a separate heading for the first time, and this may help drive the EU and ESA to combine and design a comprehensive, goal-oriented European policy, holding individual and agency to account while deriving returns worth more than the sum of investment, it is not nearly enough.

Philosophically, Europe and the entire Western world must choose to reorient society to the true environment in a most specific way. We must begin to proceed *as if* there were no life elsewhere in the galaxy, *as if* we will never meet any aliens, *as if* N=1 is the true figure. We must proceed *as if* the higher powers that be have a non-intervention policy, something like Enlightenment deism's 'God the Clockmaker,' challenging us to survive on our own, through the exercise of freewill to change the cosmos, in a non-deterministic universe.⁷⁴

Most importantly of all, humanity must go on *as if* Judgment Day were real, because it absolutely is. It is a real and true-to-life event that at some point near or far, will arrive. In the Biblical account, Judgment Day sees the temporal world ended by Armageddon, the human soul

⁷² Ib id

⁷³ Ib id

⁷⁴ God as a clockmaker, or, 'watchmaker,' means, that like a watchmaker in a little gingerbread house the Swiss Alps, God creates the universe and its physical laws, the gears, gizmos and pulleys in the watch, winds the whole thing up and lets it go on its own. See: Dawkins, Richard *The Blind Watchmaker*. New York: Norton, Company, 1986.

judged by nature's God. The other possible Judgment Day, speculated herein, sees humanity judged fit for existence not by nature's God, but by nature *itself*, a much less sympathetic figure.

Protecting ourselves from the latter Judgment Day by conquering space, far from a 'Tower of Babel' offense, is exactly its opposite. Instead of being a pompous disregarding of the intended order, it is the very fulfillment of that order. It is Jacob wrestling the angel: the coming of age of the children of God as created in his image. Let it be confidently said that nothing pleases a parent more than seeing children evolve and thrive within a moral regime constructed according to the timeless spirit of love for life and neighbor, as expressed through the victory of culture over baseness, or, when reason triumphs over force: *Plus Ratio Quam Vis*.

Viewed with a hard realism then, only concerted effort and investment in space infrastructure and development, through a reorientation of postmodern societies, can gear humanity up to confront 'our final hour.' On many Viking gravestones in Scandinavia, one can find Christian symbols on one side and images of Wotan and Thor on the other, a funny practice Kenneth Clark called 'Hedging one's bets.'⁷⁵ As well, this way of understanding the mission of the West employs the same philosophy, as in the old adage: "hope for the best but prepare for the worst." Luckily, preparing for the worst actually carries the great good fortune of being the best means of furthering our common humanity. As Chapter II will show, it is the key, so to speak, of many social dreams.

⁷⁵ Clark, Kenneth, '*Civilisation*,' Harper & Row, 1969, pp. 18. Wotan is the name he used (German) for Odin

CHAPTER | CONCLUSION

Placed before us are the purely scientific and existential reasons to pursue *Tsiolkovsky's Imperative*. In this arena, a special responsibility falls on that part of our orb calling itself 'Europe.' As home to many great and ancient nations of people who have self-organized and entered into union together, Europe now wields a special power. Along with Russia and America, it has a limited but growing ability to influence the destiny of human life not just relative to itself ala tribe, nation and globe, but against the absolute powers of raw nature. Our stand of self-defense against this goliath is really the rebellion of a humankind redolent of new Enlightenment. To procecute it, ESA must elevate *Tsiolkovsky's Imperative* as this 'new Enlightenment,' which like a great religion, intensifies existence and can energize us in a race against time.

In outlining the fact that people are made of 'star stuff' and pinpointing our unity in that, this chapter has shown that we are all on the same boat, but have spent all of history and prehistory fighting each other through the medium of nature's literal domination over our minds, on an Easter Island, writ large. Like the great awakening when prehistoric man learned he could use tools to manipulate nature, the basis of sentience, the end of the chapter asks if we shall raise our level of interaction with nature once again by embracing the new Enlightenment, before providing the corollary: 'we have to.' A sobering confirmation of the immediacy of this issue is the fact that climate change is now considered a fact of life, and while the debate about it centers on how much is caused by human activity and how much by natural processes, development and deployment of future technologies are our best means of combating it.

In the end, *Tsiolkovsky's Imperative* is a life insurance policy for our race and must be purchased by its wealthiest demographic: 1st World nations. No one else is going to do it, and it is for the benefit of all- a great equalizer of humanity and all life on Earth, from bluest whale to humblest microbe. Environmental and animal groups must come to recognize it as preserving the ultimate right of both animal and vegetable: the right to be alive.⁷⁶ Of course, there will never be an ideal condition. The chaos versus cosmos Plato spoke of in regards to East and West, translates now as the chaos of life in the aggregate, battling the very order needed for that life to continue. This, then, is the call of the new Enlightenment. Settling the Solar System is the

⁷⁶ Ecologically, while human beings may survive the next decades in the absence of an extinction event, one thing is clear: sustainability at the current levels of growth and consumption are impossible. Malthus' problem is revisited on the global scale now: The World Wildlife Federation in 2002 report cited statistics- overexploitation of Earth's resources is destroying the entire ecosystem, from total forest cover shrinking by 12% since 1970 to oceanic biodiversity shrinking by 33%. Exotic biodiversity such as tigers and rhinos have fallen to 5% of their 1900 level, elephants by over half, as reported by Townsend, Mark in the Guardian, '*Earth will Expire by 2050*?' 7 July 2002.

ultimate social goal, radical and conservative at the same time, calmly evolutionary and excitingly revolutionary, but the end result is existential; therefore, it is priceless.

Chapter II paves the way to understanding why because of social reasons, the kind of civilizational action necessary for an endeavor as grand as space settlement is becoming increasingly difficult, and soon may be impossible. Left with a closing window of opportunity then, the time must be now. Europe and the West must endorse and adopt *Tsiolkovsky's Imperative*, to increase the chances of survival for the only life we know. To avert N=0.

"Science and art belong to the whole world, and before them vanish the barriers of nationality."

-Johann Wolfgang von Goethe

<u>CHAPTER II</u> THE CIVILIZATIONAL FRAMEWORK

Students of world history find civilization in the singular brought into being by Neolithic tribal groups located variously in the river valleys of Mesopotamia, Egypt, India and China. Harvard's Samuel Huntington tells us that 'civilizations' in the plural, as they have diverged in history from these wellsprings, matter more than any other geo-spatial features in the post-Cold War world.⁷⁷ While experts do not agree on the number of civilizations that have existed historically, it is agreed that civilizations are cultural entities which contain one or more states responsible for the workaday things within their territories, such as maintaining order, establishing justice, collecting taxes, fighting wars and making treaties.⁷⁸

It is also generally agreed that there are eight world civilizations today.⁷⁹ Some from among these eight, like a country with a primate city comprising an undisputed power center, have core states that act as an anchor. The Sinic, Japanese, Hindu and Orthodox entities have core states dominating them, while the Islamic, Latin American and African do not. Since Huntington's writing appeared, it is fair to say that the EU has joined the US as twin core state of Western civilization.⁸⁰

In our global world, civilizations embody the broadest cultural identities, and thus comprise the most meaningful divisions of humanity.⁸¹ Western Civilization for example, is far flung, but its values and mores are more common within itself than when compared with other civilizations. How they diverge is the way in which they are unique, though examples of diffusion and concurrent use of technologies, methods and systems abound. Some argue that because Western Civilization has evolved a special set of circumstances for itself, it is a kind of, or all-encompassing correct path to, universal civilization. If true, it is a single river of flow, which the others either are tributary to or completely lost from.⁸²

⁷⁷ Huntington, Samuel, *The Clash of Civilizations*, New York: Simon & Schuster, 1996, pp. 40-48.

 ⁷⁸ *Ibid.* The number of historical civilizations being 16 and perhaps an additional 8 (Quigley), 21 later amended to 23 (Toynbee), 8 major ones (Spengler), for example.
 ⁷⁹ Huntington, pp. 21. The Sinic (Chinese), Hindu (Indian) and Japanese civilizations are located fully in

²⁷ Huntington, pp. 21. The Sinic (Chinese), Hindu (Indian) and Japanese civilizations are located fully in Asia, while the Islamic civilization is transcontinental and largely connected, stretching from Indonesia through Central Asia and the Middle East, finally across North Africa. From its European core, Western Civilization is also transcontinental but disconnected, transplanting itself in North America and the 'lands down under.' Debatable outposts of the West, excepting small islands, are Israel and South Africa. Orthodox Civilization is based on Russia, while Latin America from Mexico to Argentina, and sub-Saharan Africa, though not as cohesive as the others; remain more alike within themselves than with the other actors.

⁸⁰ Interestingly, a tension between the two gives the West a certain dichotomy, not replicated in others. To an extent, Islamic division of Shia and Sunni is analogous, with Iran as core Sh'ia state.

⁸¹ Huntington, pp. 43

⁸² Ib id

Unpopular as it may be to claim one civilization 'standing apart' from the others (despite insistence that each and every one is unique in itself), most Western historians have, until recently, assumed this to be true. They traced the origins of the West to 'civilization' in the singular and its movement through Mesopotamian and Levantine, Aegean, Greco-Roman, and Germanic iterations. In the far west and east the Celtic and Slavic lands completed the Western circle by the Middle Ages, called Christendom, sealed in by the Islamic World to the south and near east, the Mongols to the far east. A champion of the West as singular civilization is Kenneth Clark, who concluded while observing the II de la Cite in Paris in 1968, 'I can't define civilization, at least not yet, but I know it when I see it.'⁸³

Clark was under no illusion about equality of life amid the world's great cultural patterns. In this old fashioned view, the West's uniqueness is manifest: it is the *only* civilization. All other cultural patterns are 'close or far,' 'part but not quite,' 'semi-civilized yet semi-barbaric.'⁸⁴ No multi-lineal cultural evolution; a unilateral linear route with its *telos* in many of the trappings the West has developed over time: representative democracy, constitutional rule of law, political and social freedom, the national-state, traditional arts and inquiry. The Chinese have what is a vibrant and unique culture within itself, but it is an oriental way, not suited to be universal.

What comes about is the nature vs. nurture argument in reverse: 'nature' conservatives who ordinarily say differences in peoples' race, religion, ethnicity and history are palpable and 'nurture' liberals who swear there is no biological or social difference between Zulus, Laotians, Apaches, Arabs and Swedes, invert their arguments.

Neoconservatives generalize the 'Western way' (democratic capitalism), as universal; that given the opportunity everyone can 'be nurtured' and would even choose to be civilized in this way, if only they could be made to understand the benefits of the political propositions which girder Western people to their governments. Immigrants in the West also can rapidly assimilate thanks to these propositions, becoming fully Western, and welcoming them is a good way to grow economically (and economy, its size and growth rate, is the most important thing).

The liberal understands the West differently, as the product of a specifically Christian, European, white cultural development, and though it may tenuously suit those newly multicultural societies where descendents of the original group still predominate, it does not suit the others, which have their own 'natural' ways. Evangelization by the 'West' in the neoconservative way means imperialism, the repugnance of which takes precedence in the liberal mind over any value it may have as a 'civilizing' force. It also explains why liberals are

⁸³ Clark, pp. 3. Who then added, '...and I'm looking at it now.'

⁸⁴ *Ibid*, pp. 344

against Western 'melting pot' style assimilation of immigrants, instead favoring 'salad bowl' multiculturalism, which encourages retention of all forms of cultural diversity, to the benefit of the entire society.

It is again different among traditional conservatives, most of whom see Western ways as the most civilized yet devised, but only suitable for societies who engender them organically, as happened when Roman law and Christian virtue mingled across Europe. These traditionalists believe extra-civilizational immigrants in the West should be limited, assimilated, and deported if found to be illegal, even at the risk of corporate and economic angst. To them, culture is more important that economy. They are also against hard power imposition of Western ways ala Iraq in other parts of the world, due to belief in small government and fiscal constraint, inwardlooking orientation and frankly, a conviction that most places are socio-culturally incapable of maintaining hard-gained Western life patterns without constant, expensive, oversight.

The possibility of the West as a universal civilization assumes that all of humankind eventually, through cultural evolution, will somehow socially recognize and agree to institute the benefits of the Magna Carta and US Constitution, the same notions of human rights and ways, and will apply them to their civilization, which will disappear to the degree the new order is applied. Is women's suffrage a Western or a universal pattern anyone can participate in without being 'Westernized' to that extent? Is the totality of invention and discovery invented or pioneered by the West, from electric light to the horseless carriage, a universal trapping of humanity like fire seems to be, or 'Western' technology copied by others?

As much as we would like to think they are universal, this kind of question oversimplifies. To assume a universal civilization is possible assumes a bio-cultural unity of mankind, which has not been demonstrated thus far in history. Ticking on an electric light is much different than changing one's belief about the benefits of the Caste System. Driving a Cadillac car has proven much easier to do than allowing a woman to drive one. These examples and many others cause cultural confusion in the wider world, especially in uncertainty about vacillation between tradition and modernity- an encourager of fundamentalism.

Arguing each branch of the human family has the same wants and hopes to be fulfilled by a universal civilization, which overarches specific ones around the world, may be premature.⁸⁵ It assumes a 'best destiny' of sorts, which may well be true in the end, but is clearly not realistic today. Multiple destinies for different peoples, within the civilizational framework, who simply apply to themselves some of the universal discoveries, methods and inventions made by the West, is, empirically speaking, the way of the 21st Century.

⁸⁵ Rand, Ayn, "Socialism equals Racism," speech 1976.

Quo Vadis, Europa?

Two questions that are very serious are those seeking to determine first why the West has been so successful, and second how to regain that posture to ensure it remains a continuing part of the world cultural landscape. Part I of this chapter examines the reasons for its traditional success, while Part II demonstrates its grave situation of civilizational decay as engendered especially by the following three trends: modern education, 'progressive' political policy and unidirectional, extra-civilizational mass immigration. It determines that beholden to the effort of renewal is the question of how to re-harness the obvious basic attraction of the West to both invigorate its own population to self-correction, and deliver the opportunity to socially construct like institutions organically within other civilizations. Part III answers to this problem by showing how, through orientation to Tsiolkovsky's Imperative and becoming champion of outer space exploration and development, the EU provides for itself the healing social consequences that come with reworking the European identity within the true framework of reality. Finally, it concludes by demonstrating how on an even higher plane, the same action consecrates the EU in the wider world arena as an exemplar, meaning it once again assumes leadership and responsibility for the best destiny of humankind, as it did in times past, as the place where the mingling of an ancient culture with universal science, once energized the world.

2.1 THE WISDOM OF THE WEST⁸⁶

In general, The 'Tao of the West' was begat by a series of unique processes in Europe and America, left residual traces around the world after the imperial withdrawal, and today struggles in vain to convince others that replicating its institutions is, self-evidently, a good idea. Internally, it hosts a battle (or what some have labeled a *culture war*) for its modern identity.⁸⁷

This civilization traces its roots religiously to Levantine monotheism and politically to a thousand years of Greco-Roman life and culture. Today's entity reconstituted in its current form in the latter half of the 1st Millennium.⁸⁸ During this time, after bearing the collapse of Imperial Rome, Christendom was neither the most influential nor the most vital of civilizations. The growing Islamic World, China and a decaying Orthodox Byzantium were wealthier and progressed a great deal materially and learnedly, overshadowing under-populated and downtrodden Europe. However, it was amid the wintry harshness of medieval temporal reality that Europeans built the churches and cathedrals adorning their cities and villages to this day, whose presence helps us to reflect on that force which made Europe a kingdom of the spirit. Underneath cathedral spire and tower bell, within the feudal order, craftsmanship in bookmaking, stonework and other trades were fostered that have since hardly been matched.

In thinking about this European spirit, John Paul II recalled:

It was evangelization which formed Europe, giving birth to the civilization of its peoples and cultures. As the faith spread through the continent, it favored the formation of individual European peoples, sowing the seeds of cultures different in character, but linked together by the patrimony of common values derived from the Gospel. In this way the pluralism of national cultures developed upon a platform of values shared throughout the continent... After the magnificent progress of evangelization, came the Christian universalism of the Middle Ages.⁸⁹

In the event, as the Orthodox East and Roman West added to their ranks the remote central, eastern and northern reaches of Europe in the 10th and 11th Centuries, the continent was unified

⁸⁶ With apologies to Bertrand Russell

⁸⁷ Pat Buchanan coined the term 'Culture War' in a 1992 speech at the Republican National Convention (in which he ran against G.W. Bush). The West is trying in two ways to accomplish the replication of its institutions in world-at-large, but both methods are failing. On the one hand, it struggles to be attractive enough to have its institutions replicated. This feminized West is proving attractive enough only to exploit, however, not enough to compliment by a radically changing of political philosophy. The other method currently employed physically destroys existing orders ala Afghanistan and Iraq, bringing 1st World institutional frameworks to specific places in the 3rd World, thus far presenting ongoing challenge. Also, 'Culture War' has its primordial roots in German 'Kulturkampf,' applied especially in the Prussianization of Poznania during the late 19th and early 20th Centuries, when old Polish tradition was suppressed.

⁸⁸ Huntington, Samuel, pp. 52

⁸⁹ Pope John Paul II, Memory and Identity, Rizzoli, 2005, pp. 104.

under the cross. Rome, as ecclesia, steadily merged rediscovered classical components into a progressing high medievalism, and in the 14^{th} Century, the Italian Renaissance emerged. Following that emergence, came the rise of the state to provide order, and within this off-changing collection of states, came five hundred years of a singular human flourishing that constitutes what proponents argue anoints the West as (*a* or *the*) universal civilization.

A. National-State Secrets

In its political form, the Westphalian *statist* order emerged in the 17th Century as Western nations cohered into states and developed an international system.⁹⁰ As national-states became the primary actors in their own affairs, they began sharing more in common with each other: competition and violence to be sure, but also related dynasties of ruling families, multilingual courtiers educated in the new universities, common culture with national flair, and a much increased trade between nations (even through periods of dominion by one over the other and vice-versa).⁹¹

Socially and bureaucratically, the Reformation's divisive effect helped make the West more dynamic beginning in the 16th Century, as it occurred concurrently with the great age of exploration. Jacques Barzun credits this macro-level event, all the vicissitudes of the Reformation, as part and parcel of an essential chaos that abetted the separation of the religious from the political.⁹² Likewise, Kenneth Clark speculates the West was in some danger of being politically and socially petrified, and that the Reformation precluded this; while recognizing it as, through the decapitated Marian statues in Bavarian pilgrimage churches, an ordeal by fire.⁹³

After the terrible immediate consequences of the 17th Century Wars of Religion, from the resulting system appearing in Protestant countries sprang some of the cultural pillars which would come to define Western freedom: legal presence under the law, contractual guarantees, and nuclear family ties. Steve Sailer, president of the Human Biodiversity Institute, explains:

We observe that extended family, clan and tribe all but disappeared somewhere along the way. Contrary to meaning less caring about relatives and friends, it made possible the squaring of the circle of combining individual freedom with cooperation on an enormous scale. The results of nationalism included enormous military power, domestic (but not always international) peace, wealth, cultural glories, and at least the possibility of self-rule and personal liberty. But much had to be sacrificed or subordinated in the process of building nation-states, such as many of the old tribal identities. Individuals lost their clan status and became subjects, and later citizens, under the law.⁹⁴

As these values organically took hold, they led to that all-important development which gave 'the state' a literal life of its own, as a personality. According to Roger Scruton:

There is a political process generating corporate agency, collective responsibility and moral personality in the [Western] state. Like a firm or church, the nation-state is not merely a collection of individuals; it is a moral and legal person which acts on its own behalf and is

⁹⁰ Huntington, pp. 52

⁹¹ Ib id

⁹² Barzun, Jacques, From Dawn to Decadence, Harper Collins, 2000, pp. 22-29.

⁹³ Clark, pp. 155-162.

⁹⁴ Sailer, Steve, "Americans First," *The American Conservative*, Feb. 13, 2006.

liable for what it does. The nation-state can therefore be praised and blamed, hated and

loved... but it is answerable to its citizens, and its decisions can be imputed by them.95

Looking at the re-tribalized reality in today's 3rd World, the difference becomes stark. Identity construction outside of the West (and increasingly in it) is tribal and ethnic in nature, and this is exactly the situation in which, 'group self-propagation rather than the welfare of the individual member is the highest priority.'⁹⁶ This holds true for of most of the ethnic groups of the 3rd World, where the lives of the individuals are subordinated to the group and there is very little one can do about it.⁹⁷ In the West, this historical constant has generally been replaced through nationalism, with individual freedom emerging for the citizenry, a concept which itself is a political designation with a famed 2,500-year-old Greek model as its source.⁹⁸ Citizenship was *invented*. Thus the political breakthrough of the Western tradition manifests itself in the notion that its lands are places where citizens are treated equally under the law, as citizens of one nation, and not as members of a clan or tribe.

Scruton takes this concept further, reminding us that citizenship depends on loyalties of a pre-political kind, rooted in the sense of a common home of the trans-generational society that resides there.⁹⁹ One need only go so far as a Polish cemetery at dusk on All Soul's Day (1 November), to see an example of this.

As for the novel new family unit, it developed as the extended family network, normal everywhere, shrank to nuclear size. Left to be self-determined, nuclear families could pursue their own desires more freely, but why? The victory here was a result of the growth of overall trust in society (impossible without government proclivity or power) to enforce universal codes and constitutional justice. Social trust became re-founded on the knowledge that contracts were real, would be heeded, and if not, would be enforced by the power of the government, which was an equalizer and more powerful than any 'element' within society.

With this understanding, multitudes of binding agreements and associations could and did form in the West, as well as bureaucracies to oversee, lawyers to redress grievance, police trained to uphold the law, property rights, and overall respect for the written word. Sir William Blackstone's *Rights of Englishmen* famously outlined many of these extremely important ideas, and it is English Common Law and parliamentary tradition that is, of course, the progenitor of this facet of life today.¹⁰⁰

⁹⁵ Scruton, Roger, The West and the Rest, ESI Publications, 2002, pp. 134.

⁹⁶ As an example, Sailer refers to the Biblical Samaritans

⁹⁷ Billington, James, H., Russia: In Search of Itself, Woodrow Wilson Center Press, 2004, pp.107.

⁹⁸ Namely, the Greek the city-states, that had their zenith in the early 5th Century BC.

⁹⁹ Scruton, pp. 60.

¹⁰⁰ Roberts, Paul Craig, "How Protection of the Law was Lost," Speech, 2003. Blackstone's book is 'Commentaries on the Rights of Englishmen.'

In many other places, unrelated people cannot be trusted and there is no guarantee contracts will be honored. People need their own private mafias, extended families and friends, to keep them safe. But there is, as mafia veterans testify, not much personal freedom in that kind of subordinate lifestyle.¹⁰¹

Institutions, disparaged from a right distrusting big government and a left distrusting entrenched hierarchy, sometimes go neglected as we forget how basic they are for a society to operate based on principles governed by law. Thanks to superiority in organization, the West evolved institutions within the national-state system to serve the citizens of that state.

Economics had their say during the Enlightenment era, as the fledgling macroeconomic order begun in the high Middle Ages via Florentine banks and post-Crusades trade goods, expanded widely. As the high seas were conquered, the great imperial trading networks run by the Portuguese, Spanish, English, Dutch and French, became an international system which rode the waves also, of the *Code Napoleon* and the Industrial Revolution. As Locke's contracts became binding and Smith's capital grew in its flow, industrial power made corporate organization and invention beneficial, earmarking the corporation as a critical factor in Western life.

The corrupt corporation rivals 'pompous Victorian' as universal cliché, but clearly, the British Empire in the 19th and the American Republic in the 20th Century were dominant because sound order allowed commercial and industrial enterprise to be standardized. Along with this investment came property rights and even more need for solid contractual guarantee.¹⁰² From a business and economic standpoint, Sailer explains how Western military dominance, from the Age of Exploration to NATO, was ensured thanks to this mercantile order:

Trust in government to fairly enforce contracts between unrelated individuals catapulted those societies to unheard of degrees of wealth for ever larger percentages of their citizens. Over time, vast corporations of cooperative strangers emerged, able to accomplish voluntarily feats that slave-driving pharaohs couldn't dream of. And governments could tax the wealth they generated to buy weaponry in staggering amounts.¹⁰³

The subject of weapons reminds us that it is militarily that Western unilateral expansion from the 1450s to the 1950s was ensured.¹⁰⁴ 'The West (physically) won the world not because of the superiority of its ideals or values or religion, but its superiority in applying organized

¹⁰¹ Sailer, Steve, "Americans First," The American Conservative, Feb. 13, 2006.

¹⁰² One major problem with the commercial situation in the 3rd World is that there are no guarantees of anything. Peruvian economist de Soto argues that 3rd World poor sit on huge amounts of assets but lack the airtight ownership required by banks to borrow against it: 'American free-marketeers tend to assume that property rights are natural and thus threatened only by government intervention, but only government bureaucracies can create and maintain efficient and reliable mechanisms for defining ownership.' See: Sailer, Steve, *de Soto's Plan for the Poor*, United Press International, 02/05/02.

¹⁰³ See: Sailer, Steve, "Citizenism," vdare.com, 20/11/2005.

¹⁰⁴ Or, from Henry the Navigator to the end of the European imperium.

violence.¹⁰⁵ In 1453 the powerful Islamic world slew Byzantium- but modernity soon made Christendom invincible. Spanish gold conquered and mined in the Americas allowed that country, along with Portugal, to sustain itself as a major power at the opening of the Western ascendance, while this helped to spur competition for colonies in the overall. In turn, colonizing powers became wealthier and able to afford better armies and navies. As what Huntington called 'the wars of princes and kings' became superseded by the 'wars of the peoples,' which were superseded later by the 'wars of ideologies,' military power remained the West's most prominent foreign policymaker.¹⁰⁶

In short then, the Western Westpahlian order delivered communities held together by a political process, that were, according to Scruton, bonded by the rights and duties of the citizen as defined by that process. A particular territory became *home*: the safe, law-governed and protected place that is *ours*, translating itself into a vision of the 'enchanted homeland,' from which (speaking now of Scruton's native England) arose the call to loyalty, bravado and conception of the good- that built an empire.¹⁰⁷

¹⁰⁵ Huntington, 36.

¹⁰⁶ The 'Wars of Kings' ended with the French Revolution, which inaugurated the 'Wars of Peoples' era, which ended with WWI. Interwar ideologies fascism and communism fought each other and liberal democracy in WWII, while communism and liberal democracy ideologically chilled the Cold War era, and today we have the civilizational framework stewing the 21st Century. See: Huntington, Samuel, "The *Clash of Civilizations," Foreign Affairs*, 1993.

¹⁰⁷ Scruton, 25.

B. Culture and Accomplishment

Luckily for our psychology, there is still more to Western life than politics, economics and militarism. Just as important historically in understanding this civilization is coming to terms with the phenomenon, not well explained, of its artistic, cultural and inventive energy over the past five centuries. This singular energy blazed through seemingly every field of human activity, to an extent that when confronted, brings even the vehement detractor to blush.

Famed statistician Charles Murray's "Human Accomplishment" objectively rates, through multiple combined measures, 4,000 of the most important figures worldwide since Classical Greece and what they did across 21 fields of human activity. In analyzing the results, Sailer finds that 97% of the significant figures and events in the sciences, the only subject to which the entire world can be held accountable equally, turned out to be Western.¹⁰⁸ Answering to the charge of Euro-centric bias, he finds none, concluding the opposite in fact is true: 'Of the 36 science reference books [Murray] drew upon, twenty-eight were published after 1980, by which time historians were desperately searching for non-Westerners to praise.¹⁰⁹

The arts are a bit more scattered because categories are somewhat separated by civilization, but a similar situation appears anyway, as it is found that Western artists and thinkers from Michelangelo and Machiavelli on down represent the vast majority of the corpus of artistic accomplishment. Murray, whose 'keen interest in oriental cultures' led him to create entirely separate categories for their cultural artifacts to maximize their results against the West, reveals in the end why Europe was so 'extravagantly productive in wonderful ideas and inventions':

It involves a confluence of factors. The availability of money was not a trivial thing. Florence had rich merchants with discretionary income who were trying to beat out their neighbors in terms of works of art. That helps also in subsidizing scientific work. You had cities and universities developing. You had models. If you have a Michelangelo and a Leonardo in one generation you are much likelier to have important artists in the next. However, that leaves open the question of why you had the first generation. You had Western individualism, distinctive compared to the rest of the world.¹¹⁰

The question of nature and nurture returns again, as we must ask, for the purposes of aiding the dire situation in the modern world, which resulted in the monolithic occidental achievement. A special combination of 'both' seems to fulfill Occham's Razor well. If we assume it was only nature (biological), than the descendents of those primeval Indo-European forest tribes could have done it

¹⁰⁸ See: Sailer, Steve, "Q & A with Charles Murray on Human Accomplishment," *UPI International*, 16 October 2003.

¹⁰⁹ *Ibid.* The sciences being Astronomy, Biology, Chemistry, Earth Science, Mathematics, Medicine, Physics and Technology.

¹¹⁰ See: Murray, Charles, Human Accomplishment, Harper-Collins, 2003.

anywhere, which is unlikely. If we assume it was only nurture (social, cultural), any group in their place who inhabited European lands and developed similar patterns would have done the same, again unlikely. The biological view gets the President of Harvard in trouble and writers excommunicated.¹¹¹ Asking if there is something intrinsic to the people of Western Civilization to account for any of this, is not a fashionable question either. Nor an easy one. For instance, recalling that in *Guns, Germs and Steel*, Jared Diamond maintains Western dominance is attributable to accidental environmental factors, location being primary;¹¹² Sailer postulates that this same "environment gap" would have had to produce different people over the long term.¹¹³ While Diamond insists on the nurture of nature, Sailer questions the nature of the nurture.

The social and cultural view harks back to Social Darwinism and the idea of cultural evolution, which also gets writers excommunicated. But to the degree in which it really is nurture, which social pattern is most responsible for spurring such sustained creative action? Occham's Razor applied again says the mysterious reason most of history's significant figures came from Christendom was... Christianity.¹¹⁴ Murray tells us why this is so:

It was a theology that empowered the individual acting as an individual as no other philosophy or religion had ever done before. The potentially revolutionary message was realized more completely in one part of Christendom, the Catholic West, than in the Orthodox East. The crucial difference was that Roman Catholicism developed a philosophical and artistic humanism typified, and to a great degree engendered, by Thomas Aquinas (1226-1274). Aquinas made the case, eventually adopted by the Church, that human intelligence is a gift from God, and that to apply human intelligence to understanding the world is not an affront to God but is pleasing to him.¹¹⁵

To call this artistic and cultural explosion a conscious 'dominance' or 'superiority' over other civilizations rings hollow because the advance took place apart from, or in relation to, any sense of a wider globalism, despite the colonial system. Had the Earth beyond Europe simply disappeared, empire competition would have gone with it, economic consequences would be had, but art, music, architecture and values would have gone on. Scientist would discover, artist would create, inventor would invent. Leonardo would still have done all three. Yet, if it was Europe that disappeared, a

¹¹¹ See: Summers, Lawrence, Letter from President Summers on Women and Science, 19/01/2005.

 ¹¹² Jared Diamond, Guns, Germs, and Steel: The Fates of Human Societies. W.W. Norton, March 1997.
 ¹¹³ Sailer, Steve, The Clash of Continents (Why Nations Conquer), National Review, 19/05/1997.

¹¹⁴ Sailer. Q & A with Charles Murray on Human Accomplishment. UPI International, 06/10/2003.

¹¹⁵ Murray, Charles, *Putting Genius in its Place*, Peace Corps Online, 19/02/2004. Expanding this thought, Murray recalled, "The theology said that each individual regardless of his station in life is invited into a personal relationship with God and - this is where Aquinas was absolutely critical - since intelligence and human abilities are a gift from God, when we unravel the mysteries of the universe and create beautiful things, this is pleasing to God. This theology was no small part of the awakening, the energy, the confidence that went into the European miracle."

good case can be made that most other places on Earth would seem today as in an alternate universe.

It is exactly the colonial order Europe wrought using the technics developed during this five century period that Huntington claims today's inter-civilizational relations irreducibly rest on: "Intermittent or limited multi-directional encounters among civilizations gave way to the sustained, overpowering, unidirectional impact of the West on all other civilizations."¹¹⁶ In fact, Huntington divides the *Clash of Civilizations* into micro and macro levels. The micro scale consists of skirmishes, such as Islam vs. the West, Islam vs. the Orthodox, Islam vs. the Hindu or Islam vs. the Sinic. The macro-scale on the other hand, pairs simply the 'West against the Rest.' Huntington foretells the major clashes of the near future will be caused by some combination of "Western arrogance, Islamic intolerance and Sinic assertiveness."¹¹⁷

The overall cultural and colonial shock of Western ascendancy is best understood with the statistics from the early 20th Century, when its control, direct and indirect, extended to 84% of the world's surface, with only the Russian Empire, Japan and Ethiopia not subordinated in some way.¹¹⁸ Even in these places, there were influences- while Russia may not have been dominated politically, culturally its 19th Century elite was Europeanized to a certain extent, reflected in culture and language. Most spoke French with each other, reserving Russian for servants and peasants.¹¹⁹ As for Japan, its ascendant civilization modernized by adapting Western models, and Ethiopia, though interesting, was marginal as it was exceptional.

Thus, when imperialism renewed in the 19th Century, it was the 'West and the Rest' with the West ruling the rest. To believe other civilizations to be worthy of the name was ridiculous. The difference in power, the apparent magnitude of progress and culture was simply too great. From the mouth of the horse, to see how the only civilization understood itself as exactly that, we need only turn to the forward of the Encyclopædia Britannica, 11th Edition.¹²⁰

Written four years before the shattering cataclysm of WWI, at the zenith of old world power and the *Pax Britannica*, it termed itself as having 'the sum of human knowledge,' codified within its pages:

The Britannica is the sum of human knowledge - all that mankind has thought, done or achieved, all of the past experience of humanity that has survived the trial of time and the ordeal of service and is preserved as the useful knowledge of today. Of the human race and its endowment, of persons, places, histories, languages, literature, arts, sciences, religions,

¹¹⁶ Huntington, pp. 71

¹¹⁷ Huntington, pp. 83

¹¹⁸ Huntington, pp. 51

¹¹⁹ Billington, pp. 10

¹²⁰ By common consent, this is the second most famous encyclopedia ever published, after the original, of Denis Diderot and Jean le Rond d'Alembert, published in France between 1751-1780.

philosophies, laws, industries, and of the things and ideas connected with these, all is included that is relevant and everything explained that is explainable. In brief, to borrow an illustration from the engineer, the contents of the Eleventh Edition constitute a cross section of the trunk of the tree of knowledge.¹²¹

Looking again at 'of the human race and its endowment' and 'trunk of the tree of knowledge.' We understand them to mean confidently one civilization and one river of progress, the right track, the one on which Fulton's steamship steams, the one spoken of by Aristotle in the 7^{th} *Book of Politics*, which contrasts the oriental Persian East.

¹²¹ Chisholm, Hugh, *The Encyclopædia Britannica* 11th Edition, Volume I, Cambridge University Press, 1910

2.2 THE WESTERN MALAISE

There is a story about a young boy who, cutting class, winds up in an old bookshop where the owner gives him a special book, which he begins reading. Within its pages he finds an imaginary land that is also strangely real. A child-like empress rules benignly over the realm, called *Fantasia*, an anomalous place with many creatures living together in relative harmony. There is, however, a force creeping into the land- it is called the *Nothing*. Upon meeting the Empress, the creatures find her sick, because the Nothing is destroying her little by little, as the core of the civilization. Her hope rests in a Grecian style hero-warrior, but this champion loses his friends along the way to consult an oracle on the grave situation. Stranded without hope and hunted by a stalking enemy, he is rescued by a flying creature only to be confronted by the oracle with a trial to show his 'true self.' This self inexplicably turns out as the image of the real boy who is reading the book at that moment.

The real boy is understandably afraid to continue reading now, because he himself, a reader, is involved somehow in the annihilation of Fantasia. As the Nothing strengthens, it reveals what it actually is: the force of hopelessness and despair, meaninglessness, a 'creeping death.' It is discovered that Fantasia is in fact the world of real human imagination and dreams. The Nothing in the book-world grows with the destruction of the capacity of imagination in the actual human world. The story ends with the intervention of the boy-reader, as he learns it is up to him to 'save the world.'

Through this story we can generalize that humanity can be empowered by the possibility of the return of hope, if energized by a newfound willpower that can come to stand as the requisite counter-force against an oncoming dark age. We witness the sobering and important overcome the anomic and frivolous.

Die Unendliche Geschichte (The Neverending Story), is the name of this German tale from 1979.¹²² At the beginning of the story the boy did not know even of the existence of the entire world of our image-projection, that what we do can matter in hidden ways. Through learning of it, he was introduced to something full of beauty, which was torn away just as it became coherent. Later, he discovers the true test, the one metaphorically being taken by the avatar in the story, was his own.

This chapter is about vision. Specifically, about that vision which drives civilizations towards successful and prosperous futures. We look at the Euro-Atlantic sphere and find it in decay, in danger of losing a great deal more, and the primary reason being not so much mortal physical threat, but in the obliteration of its sustaining vision.

¹²² Ende, Michael, *The Neverending Story*, London: Penguin, 1984

A century after the Encyclopedia Britannica contained the 'sum of human knowledge,' there has come to pass a drastic philosophical change in that civilization which considered itself universal one hundred years ago.¹²³ Still measured as great and admirable by some, its image is soiled after what is seen with hindsight as malicious and arrogant colonization by some of its subsidiaries, and instances of heinous usage of its technics both within itself and in the wider world. As great empires physically go through phases of decline and decay before attrition begins and collapse occurs, civilizations may well rise and fall on similar principles culturally.¹²⁴ Lord Clark wrote that lack of confidence, more than anything else, is what kills a civilization. "We can destroy ourselves by cynicism and disillusion, just as effectively as by bombs."¹²⁵

Turning to Europe's permutations for a sense of how decline takes place, it is possible to look to previous endings for clues about today. With the broad stroke of a long duration historian, Norman Davies shows us that European civilization has occurred in three cycles. The first, *European I*, was the seafaring and surprisingly artistic and peaceful Bronze Age civilization located in the Aegean Sea. It was finished, or at least crippled catastrophically, by the volcanic eruption of the Island of Thera around 1630 BC. *European II* revived as the Classical Age of Greece and Rome, lasting over a thousand years and ending with Rome's imperial collapse, while *European III* is the current civilizational cycle, beginning in the Middle Ages and in its 'Late' phase now.¹²⁶ Reflecting on *European II* and *II*, he reminds us somewhat cryptically that the watchers of what is now *Late European III* wonder whether they will see its end met by catastrophe, invasion by some new barbarians, terminal decline, or some combination thereof.¹²⁷ Davies' catastrophe possibility certainly recalls the 'Judgment Day' scenario discussed in Chapter I, while terminal decline and "invasion by some new barbarians' justifies another look.

¹²³ The leftovers of this universality remain in the young. When Western folk are young, most grow up unconsciously with the tacit understanding that history is progressing, or at least is supposed to be a progression. They believe great positive technological strides have and are moving humanity forward towards ever better times, mirroring in some way their natural growth to adulthood. This optimism generally wins over doom saying. James Billington, US Librarian of Congress, explains that it was in the early 19th Century in the University of Berlin serious thinkers like Hegel proponed history to be 'metaphysical with physical consequences,' propelled by *geist*, meaning both mind and spirit. Victorian style civilizational confidence may well have permeated life without this intellectual development, but what the Hegelian School did was codify historical optimism philosophically. We can forgive children for believing history to be a progression; they are but young. Billington reminding us about Hegel however, forces a degree of consternation, as we must reconcile with the fact that serious adults used to believe it as well. See: Billington, pp. 9

 ¹²⁴ Motyl, Alexander, *Imperial Ends*, Columbia University Press, 2001, pp. 3-16
 ¹²⁵ Clark, 5

 ¹²⁶ Davies, Norman, *Europe*, A History, Oxford University Press, pp. 94
 ¹²⁷ *Ibid*.

In the case of terminal decline, it is worth recognizing that for a civilization to be, it must represent a tangible expression of communal understanding, shared by the members of the community.¹²⁸ This is underpinned by the ability to communicate throughout with common language and manners, based on tradition and law, which allows people to converse together and make coherent decisions in their own benefit and that of each other. Religions have been the keystones of civilizations more than any other facet of life, precisely because their traditions have formed core principles that have most successfully been worked into basic sets of values for the major communities of the world.¹²⁹ When this shared set of values is cracked by citizens valuating selfishness above communal understanding or by institutions that work against it, terminal decline is in evidence.

When Carl Sagan said, "an extraordinary claim requires extraordinary evidence," he was talking about UFOs, in which case, a singular proof would be needed to convince a reasonable person of the truth of an extraordinary event.¹³⁰ This is the opposite case, in which an ordinary claim about something everyone sees becomes extraordinary. One manifestation of decay, of course, is the refusal and later the inability of confronting the decay itself. Yet, the fact of Western decay is not and cannot be completely ignored because writers of high caliber and credential do not ignore it.¹³¹ One can look at the social indicators reasonably, in an unreligious way without being irreligious, dispassionately without forsaking any special private interest, and see the same statistics and trends.

The main agent of terminal decline is the *Western Malaise*, or, the manifested uneasiness in its core population that comes through devaluation of its main spiritual and moral order, removed through institutional fiat and educational lapse. This is especially troubling now, as at the same time, the world round is becoming more chaotic instead of more orderly, in what is increasingly a case of *The Last Man*, denatured and anomic, versus *The First Man*, naturally struggling for scarce resources on a global scale.¹³² It is the widespread inchoate feeling of stagnation and uncertainty on whether there really is a good or bad, anything worthy of belief or not, universal rights and wrongs... what amounts to an ambiguous vacuity, engineered by policy and ignorance, facilitating a civilization-wide loss of animation. Finally, it constitutes the spiritual and moral void that used to be filled by communal understanding as informed

¹²⁸ Atkinson, Philip, A Theory of Civilisation, A Study of our Decline, 2000

¹²⁹ Ibid

¹³⁰ Sagan, pp. 177-189

¹³¹ Some are established authorities like Jacques Barzun, Samuel Huntington, Roger Scruton and Robert D. Kaplan, and some have uniquely contributed to the discussion such as Steve Sailer and Theodore Dalrymple.

¹³² The 'Last Man' comes from Nietzsche and 'First Man' is adapted from and modeled on Hobbes' 'Natural Man.'

especially by the secularized but living values and virtues of Christianity tied to belief in constitutional order.¹³³

After terminal decline and catastrophe, Davies' other possible cause for the ultimate end of *European III* was 'invasion by some new barbarians.' This is a reference, of course, to the fall of Rome after being overrun by Germanic and Asiatic 'barbarian tribes' in the 5th Century, and the sacking and conquest of Constantinople in the 15th. The modern exponent of this concept comes not against the background of conflict ala 'an invasion force,' as much as of depravity, desperation and economic opportunity: the post-1965 mass uni-directional, extra-civilizational immigration into the Western world.

Due to the destruction of educational order, erosion of the middle class through the well intentioned but abysmal policy changes begun in the 1960s, and the non-assimilation of intercivilizational immigrants, the level of Balkanization taking place in Western societies in palpably increasing. The following subchapters illustrate how these policies have interwoven themselves into the social fabric, coming together to sear a hole, in the Western soul.

¹³³ A central agent manifested in this phenomenon is of course political correctness (as it is known in its PC form), which suppresses truth and civil vitality, allowing and encouraging special interest groups to behave in a manner they know is detrimental to modern communal understanding. For the general population, this part of the malaise causes mass irresolution, while for perpetrators, it causes in some cases complete ignorance, and in others, the rankest intellectual dishonesty: having been liberated from the Cave of Plato's *Republic*, going back inside on purpose.

A. Terminal Decline: Education

What Jacques Barzun has termed 'our present decadence' has manifested itself differently in each country and, within a country, differently amongst various population cohorts. The 1960s saw most of the social and institutional policies put in place that would accomplish the decay, and they have been reinforced and added to since that time. As for the post-communist countries now firmly within the Western fold, the experience is different but their new geopolitical orientation subjects them to the same trends, less apparent at first and delayed, but manifested nonetheless.

The function of Western schools is to educate sentient minors for around 35 hours per week for 40 weeks out of the year. During this time they are to be given the tools to understand the world around them through literacy in language, math and science, while socialized in the core principles of their state and how they and their state fit into the wider world of temporal reality. If the 'nurture' proponents are correct, we may assume that education is the single greatest opportunity, besides universal good-parenting, available for making society more apt to better itself through its human components. Yet if true, we must also recognize that in its current form, it is the single greatest disappointment.

Of all the macro policies and institutions in place accomplishing Western decay, modem public education is the leader, to the point where continual decline is not only accepted, but expected. No one imagines US schools, for instance, will produce better students or citizens, on average, five years from now. Contrarily, we expect they will be on a whole less-educated after graduation or sporting a higher dropout rate for manipulated statistical compensation, which is also a form of decay. The public education systems of the US and the UK are the furthest along this line of erosion, because as a matter of general policy, they have most utterly embraced a slew of Orwellian-style dogmas.¹³⁴ Officials, believing themselves as altruistic, recognize continual policy failure not as failure, but as a mandate for intensified implementation.¹³⁵ An additional problem: the US and UK specifically have powers of export of their institutional styles, and therefore are representative not only of what is, but what is becoming, on a broader scale.

Like plaque aids in the promotion of cavities most in those who do not brush robustly or properly, the crisis in academic education hurts especially students not attending 'model' public or private schools. These, the vast majority of students, are afflicted with what NAACP's Julian

¹³⁴ Sowell has employed the term 'anointed' to mean officials who believe themselves such legislators of public policy, that they need not have the approval or consultation of that public they policy for. Any comparison with advocates of expanded space development's benefit to this selfsame public is purely coincidental.

¹³⁵ Dalrymple, Theodore, "A Gallop Down the Road to Serfdom," The Times, 16 Feb 2006.

Bond recently termed "the hard realties of low expectations."¹³⁶ These are codified in what Thomas Sowell calls, "Avant-Garde policies," leaving a situation where students who need to receive the 'Great Tradition' the most, who will not be exposed to it anywhere except in school, find it withheld, to the detriment of both individual and society.¹³⁷ When schools withhold Western culture from students with greater social capital, it is dereliction. When it is withheld from the underclass, it is something more: a swindling of the very essence of social meaning, resulting in a mass that is value-less.

Philosophically, accompanying the removal of anything specifically promoting civics, communitarian ethics, duty or social morality, is the rabid criticism of each of these from anointed policymakers and individual teachers. The result is that for over a generation, students have rarely been exposed to anything like a civic education. They are, however, exposed to its opposite.

Aleksandr Solzhenitsyn said that in order to destroy a people, one must first sever their roots.¹³⁸ Indeed, one of the main goals of current centralized education is to purposefully eliminate knowledge of, respect for, admiration for, and confidence in, Western Civilization. Sowell tells us history classes now teach twisted ideological themes instead of plain history. Counting relatives as former slaves in the American South, he is especially concerned at the proclivity of American schools today in teaching about George Washington and Thomas Jefferson, for example, not as founding fathers, but as the owners of slaves:

Of all the tragic facts about the history of slavery, the most astonishing to an American today is that, although slavery was a worldwide institution for thousands of years, nowhere in the world was it a controversial issue prior to the 18th century... and then only in Western Civilization. People of every race and color were enslaved -- and enslaved others. White people were still being bought and sold as slaves in the Ottoman Empire decades after American blacks were freed.¹³⁹

Sowell's point is that today, only 18th and early 19th Century American leaders are singled out for ridicule, for what was (and in many places still is), a universal practice.

That it was in American and the West that human slavery became termed a 'peculiar institution' and ultimately abolished, and that this transformation should be made to stand as a powerful example to follow for modern slaveholders around the world, is completely glossed over. Sowell claims that overcoming the history of slavery is something Americans and Europeans should be proud of, instead of buying into the current system of foisting the full guilt of slavery past and present on its presence on American southern plantations between 1619 and

¹³⁶ Bond, Julian, Interview with Julian Bond, The Colbert Report, 20/07/2006.

¹³⁷ Sowell, Thomas, "Education Then and Now," Jewish World Review, 12/01/2006.

¹³⁸ Solzhenitsyn, Aleksandr, A Letter to the Soviet Leaders, Harper & Row, 1974

¹³⁹ Sowell, Thomas, "Twisted History," Townhall.com, 17/12/2003

1863. Far from ignoring injustice, Sowell simply believes the whole truth, taught correctly, would contribute to ordinary students' understanding of freedom and what the Western tradition really is.¹⁴⁰

Of course, this is suppressed in the schools in favor of ideological mantras on the 'eternal intolerance inherent in Western culture.' Since the 1960s, we have seen these mantras filter from the university to high schools and down to the primary schools, becoming, according to Victor Davis Hanson "like the tired slogans in Animal Farm."¹⁴¹

One of the mores in today's popular culture has caused a major problem in the schools, causing them to decay not only in what students learn but how they are learning it: negation of the concept of authority. Roger Scruton terms this mentality the "culture of repudiation."¹⁴² The resulting degenerated environment turns the classroom into first and foremost a holding pen, which combines very well with defanged disciplinary power and the overrated status of faux self-esteem to make enforcement and behavior control the main task of a modern teacher. Teaching becomes a form of babysitting, which by definition infantilizes. Many times, parental antipathy to order unites with their child's imagined right to deconstruct it, creating insolubility. All of these constitute factors refocusing school activities away from education.

Schools do not let students pray, but they do let them prey. Sailer finds that bad schools are bad primarily because their students are bad, and not contrariwise: "the fundamental problem with today's schools is the sheer number of bad students."¹⁴³ Sowell adds that a 'twin disaster' is at work: decay of the classroom and decay of the student in the classroom:

While educators are quick to seize upon the defects of students, parents and society, as if that automatically vindicates the schools, the fact is that if our public schools had perfect students, perfect parents, and a perfect society, these schools would still be failing because of the three R's that they do not teach—and the politically correct propaganda that they teach instead.¹⁴⁴

Most teacher colleges endorse the idea that anything resembling pattern, enforced standard, rule or sense of order harks back to at least parochial oppression (they expelled Einstein), but usually

¹⁴⁰ This could be called '*timecism*': the imposing of ones own prejudices on selected historical figures without holding any others to the same standard. Timecism is derived from word 'timecist,' coined by the American cartoon series *South Park*, in reference to a dislike of 'goobacks' coming from the future to take the present day peoples' jobs.

 ¹⁴¹ Hanson, Victor Davis, "The Civic Education America Needs," *City Journal*, Summer 2002
 ¹⁴² Scruton, pp. 67.

¹⁴³ Sailer, Steve, Bad Schools, Immigration and the Great Middle-Class Massacre, Vdare.com, 28/09/2003.

¹⁴⁴ Sowell, Thomas, A Review of Peter Brimelow's 'The Worm in the Apple,' Vdare.com, 27/02/2003.

coming back to the more pertinent example: 1930's Germany. The motto of the teachers' college is, 'if it isn't Lord of the Flies it's a Nuremberg Rally.'145

This is the triumph of what "Sex in History" author G. Rattray Taylor termed "matrist" mores.¹⁴⁶ A teacher no longer is to "command respect" but to "facilitate and entertain," as revealed in a recent poll cited by Sowell showing that 92% of college education professors believe teachers are "facilitators of learning who enable students to learn on their own" rather than "conveyors of knowledge who enlighten students with what they know." The same poll showed less than half of the professors answering "discipline is absolutely essential in the classroom."147

One of the most telling statistics is the year-by-year lowering of the percentage of US students scoring well on standardized tests as their K-12 careers 'progress.' American students trail further behind international students as they move through the American school system. This fact should perhaps be the one most reflected on by the US Department of Education today. Instead, the administration hierarchies in Western countries' education ministries reflect something else entirely: blatant corruption.

The most grotesque measures are taken to mask the degeneration of student ability, while simultaneously, officials trumpet the embrasure of toughened standards and the need for spiraling increases in spending to cover their enforcement. This has only helped keep disadvantaged students disadvantaged while the administrative bodies engage devious methods to cover short-term bureaucratic goals for publicity, instead of taking corrective measures, within a system that will indeed strip them of their position, should they try.¹⁴⁸ This sort of administrative illusionism has, in regards to student aptitude in standardized testing, been devastatingly exposed by 'The Zorro of Statisticians' who exposes the much-heralded 'lowering' of the white-black test score gaps in Texas and North Carolina as statistical equivalents of Potemkin villages.¹⁴⁹

¹⁴⁵ Hence films like *The Wave*, which chronicles a social studies teacher 'Nazify' his students by establishing a specific classroom order in which the order itself is made into something the students looked forward to, and obeyed. After being sufficiently ordered, the teacher gave them a 'Heil Hitler!' type salute and other military-like gestures and decorations. After more time passed and the kids became extremely well behaved and mannerly in class (and outside), he got them to repeat slogans and finally invited them all to an after school presentation, in which they gathered into the auditorium to hear their new leader... who, surprise, turned out to be Adolf Hitler, larger than life on the auditorium screen, screaming at a Nazi rally. The film shows how slippery the slope is from being orderly in class to fighting over whom gets to be the first to please the leader by pulling the Zyklon-B lever at Treblinka. ¹⁴⁶ Taylor, G.Rattray, Sex in History as referred to by Atkinson, Philip, 'A Study of our Decline: Theory of

Civilisation,' 2000.

¹⁴⁷ Sowell, Thomas, *Dogma Versus Reality*, Townhall.com, 19/01/2005.09/10/06.

¹⁴⁸ This is a kind of Ketman, after Milosz, Czeslaw's *The Captive Mind*, Secker and Warburg, 1953. ¹⁴⁹ 'Zorro of Statisticians' is a name given by Sailer to 'La Griffe Du Lion,' who discovered and

anonymously published that to satisfy the federal 'No Child Left Behind' Act, these states closed the gap 53

Another example comes from California, where increasingly poor scores on national tests caused by an influx of extra-civilizational immigrants and an exodus of middle class natives, prompted the state to change the conditions of the test to suit "what is being taught in California classrooms." Thus, the purpose of the test itself becomes blurred before fading into history: to see if students are measuring up to actual standards.¹⁵⁰ As long as the results of dishonest practices like this are a propaganda success, and are not subjected to political and media scrutiny, the practices remain. The San Francisco Chronicle's contribution to decay in education was the fictional headline, "California School Rankings Improve," with reference to the above.¹⁵¹ These administrative victories are American defeats.

British exams have been dumbed-down (to reflect the values of Tony Blair's 'Cool Britannia') openly and intentionally in the biggest independent study of standards there, covering 300,000 individual exams. The study found that students who would have failed the 'end of high school' A-Level Math test in 1985 received 'C's' in 2005.¹⁵² Administrators who have made political capital out of 'improving scores' obviously continually contribute to the misperception that nothing is wrong and that things are actually getting better, when the opposite is true. This is not a sign of progress, but a masking of civilizational decay.

From the perspective of teachers, it remains a challenge to reach a student population that has grown up understanding that reality consists of popular culture *über alles*.¹⁵³ Allan Bloom has argued that school must be a place apart from the outside world, as it has a responsibility to offer students a grasp of the universals and a possibility of what they might make of themselves, as opposed to mimicking the ordinary pop-culture they live with everywhere else.¹⁵⁴ But educational philosophy today takes the opposite stance. Far from being 'a world apart,' which can challenge or demand the student change and meet a certain level, schools bend to the supposed level and everyday life of the student. But what exactly is that?

To illustrate the psychology by which middle and high school students construct meaning today, Bloom asks us to imagine a thirteen-year-old American boy trying to do his math homework while watching MTV:

by playing with the level of 'proficiency' and 'passing.' See: La Griffe du Lion, *Closing the Racial Learning Gap*, 01/2004. 09/09/06.

¹⁵⁰ Sowell, Thomas, Spinning Education, Townhall.com, 29/10/2003

¹⁵¹ Ibid, from the San Francisco Chronicle, California School Rankings Improve, 25/10/2003

¹⁵² Pearson, Allison, A-Levels? Just Tick the Boxes, Daily Mail 6 June 2006.

¹⁵³ When questioned about standardized tests, teachers generally complain about having to 'teach to the test' but this is most likely less a gut reaction against accountability and more reaction against the futility of teaching today's students in modern classroom conditions- and having the performance of ill performing students blamed on them, along with exposure of the obvious grade inflation discrepancies it would underscore.

¹⁵⁴ Bloom, Allan, *The Closing of the American Mind*, Basic Books, 1987, pp. 72-76.

He enjoys the liberties hard won over the centuries by the alliance of philosophic genius and political heroism... He is provided with comfort and leisure by the most productive economy ever known to mankind; science has penetrated the secrets of nature in order to provide him with the marvelous, lifelike electronic sound and image reproduction he is enjoying. And in what does this progress culminate? A pubescent child whose body throbs with orgasmic rhythms; whose feelings are made articulate by hymns to the joys of onanism or the killing of parents; whose ambition is to win fame and wealth in imitating the drag-queen who makes the music. In short, life is made into a nonstop, commercially prepackaged masturbational fantasy.¹⁵⁵

Bloom correctly shows that there is 'no other countervailing nourishment for the youth spirit,' and that 'society's best young and their best energies are being wasted in historic proportions,'¹⁵⁶ but writing in 1987, the analysis is dated: killing parents has been replaced first by killing police officers, then street rivals, and finally just for fun. 'Drag-queens,' Bloom's characterization of 'long hair bands' like Poison, Queen, Van Halen and so on, have given way to '*The Last Music*,' pop, hip-hop and electronic music, in their various incarnations. 'Commercially prepackaged fantasy,' however, remains the name of the astoundingly profitable game. It is the job of the school to provide a respite from this.

The consequence for society at large of the rise of popular culture as the only source for today's youth identity, accompanied by scholastic malfunction, is the well known refrain 'loss of innocence.' While it is true to the extent that, original sin aside, babies grow into infants and toddlers and into school-aged children with a degree of innocence; this innocence is abolished by mass culture at an earlier age than before. Dalrymple has observed that pop music is specifically designed to keep minds distracted, by filling and emptying them at the same time. In its deeper form, the omnipresence of industrial pop-music in society is found to be reminiscent of, and unavoidable as, "the political propaganda of a totalitarian regime."¹⁵⁷

Many of the ideological designs behind modern education's decay are directly caused by the supremacy of the multicultural worldview.¹⁵⁸ As well, being that the educational bureaucracy is a system ingrained with powerful self-defense mechanisms, including power to terminate careers, teacher-unions, workplace sanction against non-conforming teachers, anti-discipline measures made into law, and others, it will likely not change for the better on its own. The fact is that it must be seized and changed both from above by executive order and from

¹⁵⁵ Bloom, pp. 75

¹⁵⁶ Bloom, pp. 76

¹⁵⁷ Dalrymple, Theodore, "Blast the Boom Box," National Review, 28/08/2004

¹⁵⁸ A belief in liberty as license for the school-aged has removed them from the traditional hierarchydepriving them of the notion of believable structure. Students at one time marveled at the 'rebellion' or 'coming-of-age' hi-jinx in school-based pop-culture films from the 1950's-1980's, but those films are less funny in light of the fact that every single social pathology in decades past are revealed now to have been in their infancy.

below by popular will, fueled by a reinvigorated recollection of what the student can and should be. Since this is not presently happening, the response of the establishment to criticism remains the same as ever: more money is needed. Yet money is grossly overrated in its effect on student performance. Black American students in Cambridge, Massachusetts schools lavishly funded with \$17,000 per student per year often score poorer than black students from much 'poorer' Massachusetts communities, some getting less than half of the money per student.¹⁵⁹ Sowell in fact equates 'investing' in public education with "pouring money into a bottomless pit."¹⁶⁰ With these figures in mind, it is fair to ponder what the public is getting out of the taxes directly withdrawn from their pockets, bank accounts, and standards-of-living, to pay for public education. What are the schools, charged with the removal of ignorance from youth, really doing?

History was never perfect, it is said, but we can judge great ages from dark ones. The purpose of highlighting these trends is to show that the decay of public education is actively promoting the decline of the West by abetting in the fostering of negative traits in its people individually, and on an enormous scale. The danger the situation points to is the victory of a kind of bureaucratic totalitarianism, resulting from regimentation adopted in dismal countermeasure to population explosion, rendering a system very difficult to change.¹⁶¹ It is not a lack of money, nor a lack of resources, but a lack of enforceable resolve from the persons inhabiting the positions wielding the influence to reform it, permeated by an establishment armed with the righteous indignation that only comes from knowing one is doing something for a higher truth, in this case, nothing.

 ¹⁵⁹ Sowell, Thomas, "School Performances," *Townhall.com*, 24/09/2004; 16/09/06
 ¹⁶⁰ Ibid

¹⁶¹ Clark, pp. 103

B. Terminal Decline: Erosion of the Middle Class

Like when communist planners hijacked Modernist architecture and brutalized it, the remnants of a defamed modernism were steadily reworked into post-modernity after WWII.¹⁶² The Christian imprint, while continuing to guide secular founding documents and law, has been increasingly removed from the majority of the citizenry that those documents govern. The traditional values of the family especially, as heart of Western middle class stability and prosperity, have been amputated under the postmodern surgical knife. Meanwhile, the oft-cited vicious circle of social reproduction, from which many of our erstwhile universities claim there is no escape, has only proven partly true: in the economically advanced US and UK, we have not only seen a continual numerical growth of the underclass through immigration and natural increase, but the reverse acculturation of the middle classes. Many individuals are breaking the cycle of social reproduction and voluntarily adopting the social norms and values of the underclass, contributing to civilizational decay.¹⁶³ This is a root cause of Balkanization (of public sympathies) and represents a real loss of communal understanding from Europe to North America. It is the main reason we find the *telos* of value-relative post-modernity in the engineering of a society that winds up being post-Western.

One of the most salient features of the 'Free World' in the 20th Century was the evolution away from a pyramid-shaped social class hierarchy. From Pharaoh to the modern dictator of a banana republic, the pyramid structure has been nearly universal- a very few at the top, a class of nobles or affiliated wealthy, and a great mass of peasants and townsfolk of varying stature below, farming, doing handiwork or other subsistence trade. The horizontal ovular shape of the American and some other Western social structures was a serious change reflecting the success of the economic and political systems that governed them. Today we see this shape, the Western social success story, morphing into a more bottom-heavy, proletarian blob while at the same time greater percentages of wealth are owned by the elites, stretching it again into a triangle.

Certainly, the place from where this shift in wealth and percentage is being ripped, constricting it more and more every year, is the middle class. From Sailer's observation about middle class parental spending being connected primarily to a house in a good school district, to couples having fewer and fewer kids because they are unaffordable, the middle class is becoming poorer and shrinking demographically.¹⁶⁴ In his analysis of middle class constraints,

¹⁶² Tamm, David J., "Home Address? A Foray into the Socio-psychological Effects of life in the Workers-Palaces," A paper submitted to Dr. Andrzej Szczerski, 23/01/2006.

¹⁶³ Dalrymple, Theodore, Life at the Bottom, Ivan R. Dee, 2001, pp. 44

¹⁶⁴ In America, the cost of a mortgage, car insurance and payments, baby food and supplies, babysitting (as both parents increasingly must work) and other expenses create the baby crunch as much as women in the workforce. Far from women working being a value judgment, non-action on the governmental level in supporting women in maternity leave and return to work has sufficed to put even more pressure on middle

Sailer re-discovered the old general concept most useful in understanding this relationship, *Affordable Family Formation*, pioneered by Benjamin Franklin.¹⁶⁵ Franklin wrote:

For People increase in Proportion to the Number of Marriages, and that is greater in Proportion to the Ease and Convenience of supporting a Family. When Families can be easily supported, more Persons marry, and earlier in Life.¹⁶⁶

In recent years, needless to say, the cost of family formation has gone up inexorably. This is a sign of decay because it disallows reproduction of middle class taxpayers. The underclass is largely exempt and infamously, the wealthy find ways to avoid proportional tax burden. Governmental non-enforcement of border controls is the largest factor acting against 'Affordable Family Formation,' to be covered further next section, but it is one factor among many.

While this amounts to the physical diminishing of the middle class, equally disheartening is the moral diminishing of that same middle class. As the 1.6 children per Western woman are denied the Great Tradition by their schools, greedily consuming Bloom's prepackaged trash instead, their entire world becomes a 24 hour-a-day recruitment officer for the underclass. Although, while commercialized youth culture at least can be seen through by middle class youth, it maintains a grapple hold on the underclass. This perpetual underclass in all Western countries carries the malaise into midlife, exuding it by reproducing the maladapted parenting and family relation patterns its members know so well, and often by crime, drug abuse, aimlessness or some combination thereof. The proof of this growth is readily available in the crime index of any metropolitan police department.

The point of origin in the underclass of the malaise is not, as is taught universally in the university, raw material poverty or even inequality. Relatively speaking, the average underclass person inhabiting Western states has a far higher standard of living than the average person in the world, along with the vast majority of their own immediate ancestors. Hence the millions of applications to Western nations for permanent immigration every year, continual illegal immigration in the hopes of becoming part of that Western 'underclass' and the overwhelming lack of applications to immigrate out of Western nations, even from among its most poverty-stricken cohorts.

class women, even married ones, scaring them out of having multiple offspring. In Europe, babies are so rare that governments are rightly worried that extra-civilizational worker importation is the only way to relieve the coming dearth in workers, in keeping with preserving the social benefits of the future, while Europeans are loathe to consider military solutions partly because they do not want to see their only child killed in battle, as in many cases it also means the end of their family line. See: Sailer, Steve, *Bad Schools, Immigration and the Great Middle-Class Massacre*, Vdare.com, 28/09/2003

¹⁶⁵ Sailer, Steve, *Return of Patriarchy, The*, Vdare.com, 05/03/2006

¹⁶⁶ Franklin, Benjamin, America as a Land of Opportunity, 1751.

It is something else that plagues this underclass, and it has to do with psychology rather than material poverty. A centenarian in 2007, Jacques Barzun identifies the root cause of this psychological malady as "The Great Switch," which inverted liberalism into its opposite around the time of his 60th birthday. He contrasts old style liberalism and its triumphant principle that 'the best government governs least,' with today's liberalism that recast the political ideal of liberty as... liberality.¹⁶⁷ To wit, the extension of the welfare state has nurtured what Barzun calls "a culture of entitlement," in our times, which he calls 'demotic,' noting, "the ideal of *pluralism* had disintegrated and *separatism* took its place."¹⁶⁸ This amounts to a Balkanization of the sympathies of citizens and an erosion of communal understanding.¹⁶⁹

"The Great Switch" both caused and was energized by a group of policies that were made law in order to engineer a 'Great Society' in 1960s America.¹⁷⁰ With altruistic intent, many turned out being the catalysts of social degeneration, in among other things: violent crime, petty crime, unemployment, illegitimacy, minority achievement, majority achievement, disease, income disparity, education, social cohesion and critically, the Ben Franklin – Steve Sailer model for a healthy society: 'Affordable Family Formation.'

Thomas Sowell knows how to fight the prevailing misconception that these 'progressive' policies helped the American underclass, especially those related to the 'War on Poverty.' He argues that instead of marking a 'progression,' they actually ended real progression, which was already happening. His startling facts tell the story:

Teenage pregnancy had been going down for years. So had venereal disease. Rates of infection for syphilis in 1960 were half of what it had been in 1950. There were similar trends in crime. The total number of murders in the United States in 1960 was lower than in 1950, 1940, or 1930 -- even though the population was growing and two new states had been added. The murder rate, in proportion to population, was in 1960 half of what it had been in 1934.¹⁷¹

This means the American murder rate doubled in the ten years *following* the social-welfare reforms.¹⁷² To this he could have added the black-American poverty rate, which is often pointed to as evidence of the success of 'War on Poverty' programs. This figure actually fell from 87% in 1940 to 47% in 1960, without any federal engineering.¹⁷³ To be fair, throughout the 1970s, after millions were spent on re-distributive Affirmative Action and federal welfare benefits, the

 ¹⁶⁷ Barzun, Jacques, From Dawn to Decadence, New York, NY: HarperCollins, 2001, 774-800.
 ¹⁶⁸ Ibid

¹⁶⁹ Ibid

¹⁷⁰ Some of these new laws included the 1964 Economic Opportunity Act, 1965 Elementary and Secondary Education Act, 1965 Social Security Act, and 1965 Immigration and Nationality Services Act ¹⁷¹ Sowell, Thomas, *Preserving a Vision*, Jewish World Review, 30/05/2006.

¹⁷² Cobb, Gary, A Black Conservative, 2006.

¹⁷³ Sowell, Thomas, Dems, GOPers and Blacks, Jewish World Review, 28/09/2000.

black poverty rate did continue to fall...to 46% in 1980. Thus, before reversing black progress completely, the 'War on Poverty' programs first had to stagnate it.¹⁷⁴

Prominent African-American social observer Garry Cobb indicts the programs even more, recalling that legitimacy among black Americans was a full 85% from the 1930s until the time of the reforms in the late 1960s. What happened to the rate then? By the 1990s, forty years after 'social-welfare' began, legitimacy fell to 32%.¹⁷⁵ The voice yet unheard is that of the millions of women left to raise children by themselves, in a state that has infantilized their potential husbands:

"If they [men] behave irresponsibly-for example, by abandoning their own children wherever they father them-it is because both the rewards for behaving responsibly and the penalties for behaving irresponsibly have vanished. The state has abrogated responsibility to itself." 176

By 1974, the head of the agency directing the 'War on Poverty' admitted, "Venereal disease has skyrocketed despite the existence of more clinics, more pills, and more sexeducation than ever in history."¹⁷⁷ Like with 'money for new textbooks' being a cure-all in public school affairs, this administrator was fooled into thinking the moral core of the individual was not the determining factor in his behavior, and that access to birth-control pills was.

The contention that each of these good portents was obliterated by the new social policies and trends that built the foundation of our modern liberality warrants another look in the aftermath of 2005's Hurricane Katrina. After the disaster, much thought was given to the sociology behind the plight of New Orleans. What had turned the community into such a dysfunctional misrepresentation of basic social cohesion?¹⁷⁸ The media thoroughly examined the problem and concluded it was poverty and inequality that caused the instability and criminal inclination among the citizen-looters and gangs.

This indicts both the 'War on Poverty' reforms, and the philosophy behind their institution in the first place. Certainly it revealed the reforms did absolutely nothing to defeat poverty, discrediting the reforms, and by simply peering through a wider-angle viewer, one finds that poverty is not the cause of the robbing, looting and violence.¹⁷⁹ To illustrate, Dalrymple has suggested that were we to transport ourselves back in time to a post-Katrina New Orleans, circa 1950, it is hard to imagine the result would be anything like what happened in

¹⁷⁴ *Ibid*. By 1%

¹⁷⁵ Cobb, Gary, A Black Conservative, 2006.

¹⁷⁶ See: Dalrymple, Theodore, *The Road to Serfdom*, 'City Journal,' Spring 2005.

¹⁷⁷ Sowell, Thomas, Dems, GOPers and Blacks, Jewish World Review, 28/09/2000.

¹⁷⁸ Most people in North America and Western Europe were shocked at the human disaster much more than the natural one it followed, wondering if the anarchy, opportunistic looting and violence was something that could happen in their own big city under similar conditions, often recognizing for the first time what Dalrymple has called "the thin blue line separating us from barbarianism and mob rule." ¹⁷⁹ Dalrymple, Theodore, "The Veneer of Civilization: Utterly Removed," The Manhattan Institute, 2005.

2005, despite actual, legal, Jim Crow inequality. As for poverty as *casus beli*, he reminds us that similar looting and gang tirades did not take place in Indonesia and Thailand following the tsunami strike of December 2004, nor in Bombay after flooding ala New Orleans struck that city, noting the kind of poverty in those places "is incomparable to any that exists, or indeed has ever existed, in America."¹⁸⁰

Maddeningly, the official conclusion of 'poverty and inequality' is exactly the same mentality behind the crippling programs from the 1960s, but why do programs designed to lower poverty help destroy families and actually generate more poverty? The potency of the 'culture of entitlement' (Barzun) mixes with that of the 'culture of repudiation' (Scruton) to become a case of unintended consequences at best, and a 'tyranny of good intentions' at worst. It forms a culture of death that 'kills with its kindness.'¹⁸¹

Arrogant arguments due to race-thinking from the political right, about how Western social problems are 'minority problems,' as in, they are 'caused by,' or 'mostly take place within,' minority communities, show the right is not paying attention to what is happening. It shows a denial of the ability of popular culture and maleficent political policy to decay members of every group by assuming control of the individual within it, without discrimination for or against any particular group.

The result of these maladies is a society where there is no vision. In such a place, drugs and ecstatic music are used to achieve a debased form of those powerful feelings which used to come through the things that Bloom argues are life's greatest endeavors: "victory in a just war, consummated love, artistic creation, religious devotion and discovery of the truth."¹⁸² In such a place, the affluent and middle class, just like the underclass, anesthetize their lives with drugs, alcoholism and psychotherapy, deadening their souls to the aimlessness by participating for a moment in 'chasing the high.' But this is a placebo, and it indicates there is something vital missing in the life of the average inheritor of that civilization which gave us philosophy, medicine, and landed man on another world.

Middle class converts to underclass norms enter adulthood without recognition of the lifegiving, value forming culture that is their birthright. Thus, they proceed through adulthood without meaningful vision, which haunts them into having midlife crises on an enormous scale, as the answer to the basic question, 'is this all there is,' comes up again and again in the affirmative. The extent of the midlife crisis is such that the money made and spent on psychiatry has never been higher. *Affluenza* is a term used to describe this condition of dissatisfaction among plenty, of atomization among many, telling us (like the poverty example from New

¹⁸⁰ *Ibid*.

¹⁸¹ Paul Craig Roberts, *The Tyranny of Good Intentions*, Prima Lifestyles, 2000.

¹⁸² Bloom, pp. 80

Orleans) that simply raising the standard of living, even for everyone, is not enough to fix the malaise.

In a closed world, a civilization could have ups and downs without reference to other ways, but ours contains many. Recognizing the powerful effect the malaise has on the natives of the West, we are left to ponder its terrifying injunction on immigrants from different civilizations and their children. If anomie is the effect on the native who is denatured and denied incorporation into coherent tradition, fed instead the products of the manufactured lowest-common-denominator culture as illustrated, revulsion and disgust is the effect on people who know that other things are possible in human affairs. The empirical evidence presented is that the Western way is a farce- all capitalism and no culture, no tradition but an intra-societal, atomized social Darwinism. In the words of Dalrymple, "a war of each against all."¹⁸³ The West is a place to exploit, not embrace as a new 'home' in the world. Because of this, newcomers arriving in record numbers are led easily and even sensibly to transplant their own powerful social identities directly into this civilization, *crucified*, in the manner of its Ancient God, by its aboriginal population, for the sins of the world.

¹⁸³ Dalrymple, Theodore, *The Veneer of Civilization: Utterly Removed*, The Manhattan Institute, 2005.

C. Four Decades of Extra-Civilizational Mass Immigration

No extended government policy, not even education or the constriction of the middle class family, is Balkanizing the West more than the post-1965 trans-Atlantic phenomenon known as mass immigration. Even education's erosion of civil society through propagation of non-values is effected little by little, with some local money voted on and some policy and programming still controlled at that level. In the case of unidirectional, extra-civilizational mass immigration, the people most affected have never had any say at all in policy, never been asked whether they wanted their societies altered permanently by mass importation of excess people from cultures scornful or inexperienced with Western ways, and have never acquiesced to extension of expensive tax-funded social services to non-citizens.¹⁸⁴ In no other policy are the elites and the majority more divergent and no other policy is so wracked by censorship of debate, for exactly this reason. It is the one issue of supreme bi-partisan agreement: blazingly fueled by cheap labor satisfaction on the right and infatuation with the multicultural dogma and ethnic-identity political lobby on the left, while the associated costs are unaccountably socialized to the taxpayer and worker at large. The result sees every Western nation subsidizing the lowering of its own standard of living. If any domestic political issue warrants indictment as the one most spanking of organized conspiracy against the *citizen*, this is it.

Controlled immigration has been a Western tradition, but a notion of the common good of the society in question always informed political decisions of how to prosecute immigration policy, law and quota. For example, when the United States found it needed no more immigrants in the 1920s, it simply ended immigration. Forty years later, the 1965 Immigration and Naturalization Services (Hart-Cellar) Act, promulgated by Senator Ted Kennedy (D-MA), removed restrictions. Record-breaking numbers followed: in the US, over 28,000,000 have arrived legally, and over 15,000,000 (perhaps 20,000,000¹⁸⁵) have come to stay illegally. Europe now plays host to some 25,000,000 extra-civilizational immigrants.

Indeed, immigration today assumes that it is good for the immigrant, getting them out of the terrible place they come from, while the host society's benefit has been removed from the equation. There is a very good reason for this: The US National Academy of Sciences conclusively found and documented that there is indeed *no net benefit* from immigration.¹⁸⁶ In fact, it found exactly the opposite to be true: staggering social costs. The net lifetime cost to American taxpayers of each immigrant admitted with less than a high school education,

¹⁸⁴ When they have been asked, they have answered. For example: Arizona Proposition 200 (2004).

¹⁸⁵ Tancredo, Congressman Thomas, *Tough Immigration Reform Essential to US Identity*, Council on Foreign Relations, 24/07/2006

¹⁸⁶ National Academy of Sciences, *The New Americans: Economic, Demographic and Fiscal Effects of Immigration*, Washington DC: National Academy Press, 1997.

meaning the vast majority, is an incredible \$90,000.¹⁸⁷ High school graduates carry a lifetime social cost of \$30,000, leaving the tiny minority with a college degree or more as the only ones bringing a net benefit to the treasury.¹⁸⁸

In the case of Europe meanwhile, 'La Griffe Du Lion' has found mathematically the following definitions to be true in Western Europe:

1) A Western country may be approximated as a nation composed of two distinct populations, one indigenous, the other 3^{rd} World.

2) Per capita GDP declines linearly with the 3rd World immigrant population fraction.

3) Each percentage point increase in the 3^{rd} World immigrant population will eventually cause the per-capita GDP of the Western Nation to drop by approximately 0.76 percent of its zero-immigrant value.¹⁸⁹

This equally startling situation leaves us to witness civilizational decay at work: the world's wealthiest, most powerful, resource-rich governments, while intruding into the private space in every dystopian way imaginable, do not perform the most basic public function of their charge: to promote the general welfare, ensure domestic tranquility and pass on a viable polity to posterity.

The Orwellian answer as to why reflects the decay: in the current suppressed debate, advocates of immigration law enforcement and reform throughout the West (the absolute majority of all people, of all kinds), are publicly marginalized by the same tired slur: 'The immigration reform advocate is a racist because, since he wants a review of a policy that brings in multimillions of 'diverse' people into Western countries every year, he is somehow against peoples of color, and this xenophobia fully explains his concern- above and beyond care for the welfare of his own home, neighbors and country.'¹⁹⁰

By leveling an assault on the character of the reform advocate, the burden of proof switches from status-quo proponent explaining why and how mass immigration is necessary and beneficial, to the reform advocate answering the red herring, 'why I am not a racist.' The fact that mass immigration, by having turned the West into a huge colony for the rest of the world,

¹⁸⁷ California is considered the bellwether state because it has the most immigrants and has set the trends in this way. The NAS's math finds each native family paying annually around \$1,200 to cover the costs of immigration. As well, between 1969 and 1999, the state's energy consumption more than doubled, though per capita usage grew less than half of that amount. The cause was a population increase that was 95% caused by immigration. See: Attarian, John, *The Coming End of Cheap Oil*, 'The Social Contract,' Summer 2002, pg. 265-284.

¹⁸⁸ Sailer, Steve, 'Americans First,' The American Conservative,' Feb. 13, 2006.

¹⁸⁹ The conclusion of which means that ultimately, the Western nation will itself become part of the 3rd World. See: La Griffe du Lion, *Cognative Decline: The Irreducible Legacy of Open Borders*, 01/2005.

¹⁹⁰ Traditional immigration from the Mayflower to Ellis Island being what it is, it is often called *anti-American* to limit or stop this flow of people, but this argument is used only to fool common folk who have a patriotic feeling upon hearing someone in the public sphere claim there still is an 'American way,' and public officials are interested in keeping it going. However, because the statement is no longer used in reference to the common good of society, the 'anti-American' argument literally is 'anti-American.'

hurts existing black American, working class European and recent immigrants' labor value and earning potential more than all other demographic groups, is continually, purposefully, powerfully omitted.¹⁹¹

Immigration experts Peter Brimelow and Lou Dobbs have determined the single biggest reason for lack of reform to be a moral corruption, finding in the political elite a "disingenuous determination to suppress any debate on immigration in order to protect various special deals that have been smuggled into current law, and which could never withstand serious scrutiny."¹⁹²

The order of magnitude becomes evident when recognizing that as Western societies face fundamentalism, ethnic assertiveness and tremendous social cost, they are yet made to embrace more millions every year without possession of the means to assimilate them into citizenry. As well, an inevitable political shift in influence must occur by demographic and democratic imperative. Let US Census Bureau statistics and estimation speak to this effect:

US POPULATION: MASS IMMIGRATION 1970-2050	
WITHOUT	WITH
200,000,000	200,000,000
230,000,000	260,000,000
240,000,000	300,000,000
245,000,000	325,000,000
245,000,000 ¹⁹³	420,000,000 ¹⁹⁴
	WITHOUT 200,000,000 230,000,000 240,000,000 245,000,000

By the chart we can see that what would have been a stable population- an ameliorating figure when considering things like urban sprawl, overcrowded schools, environmental and habitat degradation and the recent trivialization of American Labor- is growing relentlessly to 400,000,000, *with no net benefit to society*.

In this situation, because culture is not simply an abstraction but a true human condition, corporate and multicultural proponents of the status quo unwittingly (or on purpose) engender a situation that self-defeats, while leveling huge net losses on society in the process. To illustrate the possibility for demographic alteration of current values, Sailer points out the irony that Pat Buchanan, since he calls for shutting down immigration, raising the dismal native birthrate and passing radical pro-family and educational reform legislation, will eventually be seen not as a

¹⁹¹ Presumably, if everyone in the world were the same color, it would be much easier to control Western borders. In that case, at least the ideological Left, not worried about matching Third World labor arriving to work for Third World wages with willing employers, would leave the debate. The political Right, succumbing to pressure from groups proponing a country to be an economy, *and that's all*, would not.

¹⁹²Brimelow, Peter, *A Prescription for Immigration*, Center for Immigration Studies, 2001.

¹⁹³ Sierra Club, The, Roy Beck's Population Growth Chart, SUSPS Online, 2006.

¹⁹⁴ US Census Bureau, Projected Population of the United States, Interim Projections, 2003

reactionary, but a *liberal* relic; his views on traditional freedoms stand against the fundamentalist outlooks that at some point must come to demographically dominate Western countries.¹⁹⁵

One of four possible outcomes must happen in the US and EU:

- I. Mass immigration continues while acculturation occurs
- II. Mass immigration continues while acculturation does not occur
- III. Mass immigration is cut while acculturation occurs
- IV. Mass immigration is cut while acculturation does not occur¹⁹⁶

The results of these four scenarios matter a great deal, as we ponder with Davies' watchers of Late European III.¹⁹⁷ Generally, corporate interests favor the first, multiculturalists the second, the vast majority of people in poll after poll the third, leaving virtually no one, except perhaps concentrated communities of recent immigrants, favoring the fourth. The fourth scenario satisfies no political agenda, nor carries the most benefit to society, a slot filled by the third.

In the first decade of the 21st Century, fed by the lie that constant population growth is necessary and good, it seems the immediate future holds a continuation of the second- the worst option for Western stability. The acculturation component is anti-Terminal Decline, but as repeatedly outlined and backed by enormous amounts of empirical evidence, the assimilative infrastructure is no longer there; new immigrants largely delineate themselves by group within the new society, and raise group identity above identity as a citizen. In this Balkanization, furthermore, they are not alone.

Dalrymple uses the case of *The State of New York v. Lemrick Nelson* to illustrate how the growing insistence on group rights even among natives, a major manifestation of civilizational decay, means the death of the citizen. The case shows how the jury trial, a Western mainstay, is

¹⁹⁵ See: Sailer, Steve, "Random Thoughts on Buchanan's The Death of the West," *Vdare.com*, 02/12/2002; Thus, while defenders of the traditional principles and social cohesion are considered reactionary and vile in the anarcho-corporate / multicultural paradigm, this rainbow coalition's world is fleeting as the rainbow itself: bright, multicolored, oft photographed and deservedly so, but from whose pot sprouts fundamentalism. It raises the question, observing Huntington, what the *telos* of a given civilization is, and if that end is what other groups, bound together in states, want for themselves.

¹⁹⁶ A fifth scenario, less appreciated, is the possibility that illegal aliens can be 'bought-out' by the host society. The irony in current policy is that it *already* makes economic sense. See: Sailer, Steve, *A Buy-Out Option for Europe's Muslims*, Vdare.com, 06/11/2005.

¹⁹⁷ Buchanan is a leader among these watchers, who has written *Death of the West* and *State of Emergency*. In the opening of the latter, he notes, 'As Rome passed away, so, the West is passing away, from the same causes and in much the same way. What the Danube and the Rhine were to Rome, the Rio Grande and the Mediterranean are to America and Europe- the frontiers of a civilization no longer defended.' See: Buchanan, Patrick J., State of Emergency: *The Third World Invasion and Conquest of America*, Thomas Dunne Books, 2006.

becoming a tool for ethnic assertiveness: Nelson, a black New Yorker who murdered an Orthodox Jew named Yankel Rosenbaum because he was Jewish, in broad daylight, in front of witnesses, because a black child was killed in an automobile accident by a Jewish driver, went to trial and was found innocent by a black jury.¹⁹⁸ Justice was not blind and a man who purposefully separated a living soul from its earthly body, walked away free. Enraged Jewish interests won a retrial by claiming Rosenbaum had his 'civil rights' violated (evading the *Double-Jeopardy* law, another American legal mainstay), since the crowd around Nelson at the time he murdered was shouting, 'Get the Jew, get the Jew!'

After a 19 year prison sentence was extended to Nelson by a jury containing at least one Jew who 'doubted his objectivity,' the defense not only admitted Nelson murdered Rosenbaum, but the reason: because he was intoxicated- and this in turn did not constitute a 'civil rights violation.' As Dalrymple observes:

The constant emphasis by liberal intellectuals on diversity as a good in itself, combined with a complete absence of reference to unity and a refusal to proclaim one political culture (our own) superior to others, has undermined our sense of common involvement in one society. Thus a jury feels more loyalty to its members' sectional interests than to society as a whole, to which it owes no duty, certainly not that of reaching a true verdict according to the evidence.¹⁹⁹

This priority system, Dalrymple reminds us, assumes a false dictum of Karl Marx to be true: that it is not a person's consciousness that determines their being, but rather their being that determines their consciousness.²⁰⁰ Debate itself becomes a classifying of motives instead of a comparison of arguements. With a virtually unlimited pool of possible social categorizations to select from and ascribe a more important identity and loyalty to than any notion of 'involvement in common society,' this death of the idea of 'citizen' bodes especially dangerous when considering mass immigration. It is in this Balkanizing influence of the extra-civilizational inflow specifically, that Scruton sees streadily transforming what we know of as the West, step by step, out of existence:

When the visceral differences (tribe, sect, language, loyalty, lifestyle) extinguish secular law, cancel rights of citizenship, and set group against group, a country ceases to be a part of the West, and joins the Rest- as is happening right now in Zimbabwe.²⁰¹

The question not answered by Western governments to immigrants is whether living in a Euro-Atlantic country means *submission* to that country's social norms, or not. Currently under multiculturalism, it is ok to expect to alter the host country by directly transplanting the culture

²⁰⁰ *Ibid*.

¹⁹⁸ Dalrymple, Theodore, Lemrick Nelson and Us, National Review, 06/02/2003.

¹⁹⁹ Dalrymple, Theodore, *Swept Away*, City Journal, 02/05/2003.

²⁰¹ Scruton, pp. 16.

of the source country there. At the same time, the West is guilty of sending an equally mixed message about its own norms by, according to Dalrymple, "ideologically promoting secular individualism, rejecting the inequality of race, gender, religion and class, yet crafting and promoting a social policy of differentiating group rights and entitlements based upon these very same factors."²⁰²

Within this broken system, it is unrealistic to hope that extra-civilizational immigrants adopt *en masse* traditional Western preferences for 'individualism over tribalism, meritocracy rather than nepotism, nuclear families over extended clans, law and fair play over privilege, corporations of strangers rather than mafias of relatives.²⁰³

Assimilation to the values of a society sterilized of vision and foundational principle is simply not happening. Francis Fukuyama, Dalrymple and Scruton all note that in Europe, the second and third generation of immigrant children are growing up without either the traditional culture of their parents or the acceptance of their surrounding society, which is then further Balkanized to that degree. Fukuyama notes that even though modern Europeans have begun thinking in terms of a 'post-national Europeanness,' many extra-civilizational immigrants from Morocco, Nigeria and Turkey, have not.²⁰⁴ In the US, many still cling to the old idea of an 'American Dream,' which used to be assumed. Superman, for example, fought for truth, justice and the '*American way*'. That may have been the feel-good humor of a community informed by a common ideal, but when real soldiers fall today for that ideal, which is then repudiated by their 'countrymen,' it does not feel good anymore.

American philosopher Saul Bellow stated, when talking about his immigrant family in turn of the century Chicago, "It was a country then, not a collection of cultures."²⁰⁵ Today, where there is assimilation, it sees the children of immigrants assimilating not to middle class Western culture, but to underclass culture; the very same 'culture of entitlement and repudiation' exposed as such a promoter of decay. Fukuyama notes that many of the September 11th terrorists, London Bombers, Madrid Bombers and the slayer of Theo Van Gogh among others, were radicalized in Europe, not the Middle East, and were legally 'Europeans.'

The effect of non-assimilation in Britain has had the worst impact on young Muslim women in that country, often times forced into arranged marriage, denied education or forced

²⁰² Dalrymple, Theodore, "When Islam Breaks Down," City Journal, Spring 2004

²⁰³ Sailer, Steve, "Americans First," The American Conservative,' Feb. 13, 2006.

²⁰⁴ See: Fukuyama, Francis, "A Year of Living Dangerously," Wall Street Journal, 02/11/2005; A fair question asks whether the millions of children of the current helot class imported to labor on American farms, clean British government buildings or simply to fill a 'diversity quota' (whose US manifestation receives 10,000,000 applications a year), raised on Bloom's prepackaged trash which denigrates labor, will want to continue working 'like fools' for 'chump change,' or if they will assert themselves against the society to which their parents immigrated.

²⁰⁵ Bellow, Saul, "Writers, Intellectuals, Politics, Mainly Reminiscence," *The National Interest*, Spring 2003

into servitude by their fathers, uncles and brothers. If these kinds of practices, common throughout the Islamic world, warrant the critique that Islamic treatment of women is sometimes reprehensible by our standard, they do not mandate intervention in the Islamic civilization itself, on behalf of women. But what about when the patterns are replicated here?²⁰⁶ When the same forms of domination occur in those communities of immigrants settled by choice in Western lands, acquiescence in renewed or continued alien cultural patterns by the new host society means flaccid abandonment of core principle, civilizational decay, and not to mention, constitutes a criminal act.²⁰⁷

While the feminist multiculturalist runs into this conundrum in trying to reconcile Vagina *Monologues* style women's rights with supporting the mass importation of cultures that do not believe in them, the liberal environmental movement also abandons its raison d'ete when confronting the mass immigration of the 3rd World into the 1st. Sailer explains how in the bestseller Collapse, Jared Diamond illustrates three successful answers to Garrett Hardin's famous problem regarding the overuse of common resources without heed to their ultimate fate: The Tragedy of the Commons.²⁰⁸

Use of authoritarian force is the first answer, utilization of privatization schemes and guarantee of property rights the second, but it is the third that provides a stunning truism, and contributes the most to discussion of the current slide into disorder:

The remaining solution to the tragedy of the commons is for the consumers to recognize their common interests and to design, obey, and enforce prudent harvesting quotas themselves. That is likely to happen only if a whole series of conditions is met: the consumers form a homogenous group; they have learned to trust and communicate with each other; they expect to share a common future and to pass on the resource to their heirs; they are capable of and permitted to organize and police themselves; and the boundaries of the resource and of its pool of consumers are well defined.²⁰⁹

Suffice it to say, that not only are these qualifications no longer met in the West, but that they are in the antithesis of all current policy, resulting in the obliteration of what Pope John Paul II called, ,,the value found in the native land, which imparts a patrimony upon its constituents, and asks for patriotism in return."²¹⁰ Patriotism is revealed by the pope as a properly ordered social love- an extension of the 4th Commandment (Honor thy Father and thy Mother) back in time through the honoring of the land itself, understood as the spiritual patrimony which we acquire from our mother and father, as they acquired it from theirs, from times immemorial. In this way,

²⁰⁶ Kaplan, Robert D., "Supremacy by Stealth," The Atlantic Monthly, July/August, 2003

²⁰⁷ Dalrymple, Theodore, "British Freedom and Muslim Discipline," City Journal, 13/03/2003

²⁰⁸ Diamond, Jared, Collapse: How Societies Choose to Fail or Succeed, Viking Adult, 2004

²⁰⁹ Sailer, Steve, "Jared Diamond: The new King of all Media," Vdare.com, 24/07/2005 ²¹⁰ John Paul II, pp. 72

society transcends materialism with a force that may be called 'spiritual capital,' that acts both as a regulator of the everyday, and the invisible glue that gives a society that little something extra, when times are tough and the center does not hold.²¹¹

In the end, the basic question returns to why societies fall. Jared Diamond claims 'ecocide' has a lot to do with it, while Steve Sailer's answer is that it is homicide. "Societies get invaded and overwhelmed."²¹² Lord Kenneth Clark, Pat Buchanan and Jacques Barzun, meanwhile, are three grand old men who either see things as they really are, or have the largest collective chip-on-the-shoulder in the history of commentary. All three say that with regards to being invaded and overwhelmed, decayed and collapsing societies are largely responsible for letting it happen to themselves: suicide. By not defending the physical borders of the civilization, the ideological borders within it, nor providing anything worth assimilating to, Western people are turning their backs on the patrimony thrice, once for themselves, again for immigrants coming to live with them and thirdly for the children of both groups: the posterity. Demonstrating the West has redeeming qualities, to which common allegiance can and must be forged, is the major educational challenge of the early 21st Century.

Through looking at educational disorder, 'progressive' reform and mass immigration, we have come face-to-face with problems seemingly insoluble in their entirety: the Western malaise in its diabolical, masochistic totality. Indeed, only an extremely powerful medium could successfully stand against it, altering our trajectory away from decline and fall by awakening the spirit of truth over lie, good over bad, Jerusalem over Babylon, and provide a sustaining vision in the old tradition again.

But there is such a vision. It is the one encompassing the true constitution of nature and the universe, and therefore stands a chance to, in beings derived from that nature, effect a tangible reawakening of cooperation, enable recognition of the value of such order, and with endorsement by the EU and US governments, *can reform the citizen back into existence*. It is to this powerful vision, and the governmental order from which it must spring, that we now turn.

²¹¹ John Paul continues: 'The Latin word *patria* is associated with the idea and reality of 'father.' The native land can in some ways be identified with patrimony, that is, the totality of goods bequeathed to us by our forefathers... our native land is thus our heritage and also the whole patrimony derived from that heritage. It refers to the land, the territory, but more importantly, the concept of *patria* includes the values and spiritual content that makes up the culture of a given nation.' For the effects of 'spiritual capital' on society, see: Monosmith, William, "Trust and Identity: Assessing how Catholic Spiritual Capital Affects the Polish Transition Economy," *Centre for European Studies, Jagiellonian University*, 2006. ²¹² Sailer, Steve, "Jared Diamond: The new King of all Media," *Vdare.com*, 24/07/2005.

2.3 THE ELIXIR OF WESTERN CIVILIZATION

We have seen in this chapter how today, Fukuyama's postulate that 'The Last Man' now inhabits Western nations has partially come to pass, at least in the cultural sense in its native population, and how the West struggles for a renewed vision of itself.²¹³ Thus, it should be clear as to why European civilization and society are in crisis, why popular materialism and cultural relativism have engendered an anemic sense of purpose, and why the preconditions for civil society have and are eroding. After these indictments, it is time to give The Last Man something to live for again. The purpose of Part III is to present the fantastic, realistic, comprehensive, cure:

A vigorously endorsed popular vision based on the technological and social gains of humanity as achieved through outer space exploration, strategic development, and settlement, is the elixir of Western Civilization. Not only is it the golden arrow to understanding reality and one's place within it, but by encompassing and awakening the psychology by which a human being finds worth in himself, others, and the world 'round, it generates once again values that come from within.

Tsiolkovsky's Imperative is the elixir of the West. Through its promotion of understanding the workings of nature and the reality that it can be mastered by man, it elicits an overall correct deference to moral order and common good, which appeals to the senses as providing the best means to both progress in the communitarian respect and fulfillment of the individual spirit.²¹⁴

Therefore, a West that focuses on and lauds:

- 1) The ongoing human drama of outer space development
- 2) Discovery and exploration
- 3) A continual organized progression

...is a West which empowers its inhabitants with the greatest secular gift: unification of an optimistic, sustainable today to a concretely better tomorrow.²¹⁵

²¹³ Interestingly, the best portrayal of 'The Last Man' in fiction has been done by H.G. Wells, in 'The Time Machine,' when a Victorian (actually, an Edwardian) goes ahead into the far future, and meets with them. See: Wells, H.G., *The Time Machine*, 1895.

²¹⁴ In short, so the majority sees the common good as matching their individual good.

²¹⁵ The term 'secular' is used for the benefit of its basis as a materially secular activity. For religious people however, it is also profoundly religious. To a Jew or Christian, it is the personal and humanistic discovery of God's patrimony, given to humanity for this very purpose. The Holy Spirit is *truth*.

A. Tsiolkovsky's Imperative and the Individual

This gift is a carrot. The vision of a grand future is a carrot held up in front of a society desperately in need of one. Punishing social disorder with the stick may go on forever, police powers may expand perpetually to control what is increasingly uncontrollable, and governmental *Gleichschaltung*²¹⁶ may continue its rise to dystopian proportion. But since we have seen that poverty is overrated as a cause for violent crime and other social problems, and the agency of the individual working within a dysfunctional moral regime underrated, we know it takes a change of heart rather than money or 'good intentions' policy to win back the Western soul. We know it takes individual transformation.

In the case of this, the inner life, embracing *Tsiolkovsky's Imperative* and reorienting Western society to space and the cosmic framework serves to replace in individuals what secular license has hijacked from their moral constitution. Edmund Burke's superlative conclusion on why this European dance between liberality and social cohesion is such a dire circumstance, is still the most valid after two hundred years:

Men are qualified for civil liberty in exact proportion to their disposition to put moral chains upon their own appetites; in proportion as their love to justice is above their rapacity; in proportion as their soundness and sobriety of understanding is above their vanity and presumption; in proportion as they are more disposed to listen to the councils of the wise and the good, in preference to the flattery of knaves. Society cannot exist unless a controlling power upon will and appetite be placed somewhere, and the less of it there is within, the more there must be without.²¹⁷

The less control through personal agency there is in society, Burke says, the greater enforcement must come from the state. Because the current order destroyed popular religious constraint from the soul and replaced it with nothing, the post-Christian West must rediscover this kind of self-constraint. To understand Christianity's role as the glue that holds society together, we look again to Dalrymple to see how the two paradigms (religious and secular) view human nature itself:

The secular person believes that compassion is due to the victim by virtue of what he has suffered; the religious person believes that compassion is due to everyone, by virtue of his humanity. For the secular person, man is born good and is made bad by his circumstances. The religious person believes man is born with original sin, and is therefore imperfectible on this earth; he can nevertheless strive for the good by obedience to God.²¹⁸

²¹⁶ The Nazi term for 'overall coordination.'

²¹⁷ Burke, Edmund, as obtained from Project Gutenberg, 'Selections of Speeches and Writings by Edmund Burke.'

²¹⁸ Dalrymple, Theodore, "Why Religion is Good for Us," The New Statesman, 21/04/2003.

The tyrant of the African highveld, the corporate criminal, the 'aggrieved professional ethnic'²¹⁹ who conspires with lawmakers through lobby groups to flout the best interest of society for her own group's short term gain, and the street criminal who robs and kills with drug-induced apathy or psychopathology, all have their vindication in the 'secular' idea that man is born good but made bad by his circumstances, his environment, perpetuated to a degree that would repulse Rousseau, champion of 'virtuous natural man.' Dalrymple finds the religious recognition of man, as 'in need of constant vigilance against sin,' emperically better both morally and practically. But can a Europe in which religion is anathema regain a religious kind of understanding of human nature?

While religions contain within them much understanding of nature and find success in acting in relation to it, the current secular and post-modern paradigm does not. It does not understand human nature. The proposed cosmological framework, however, restors the old order by isolating and operating directly against the root cause of social conflict, through the recognition that it comes from flawed human nature at the individual level.

Far above and beyond the current system of ascribing 'the environment' to all human wrongdoing and trying to catch and punish those who 'violate rights,' while justifying maladapted behavior as 'to be expected, given the way things are,' the cosmological imperative tells us to understand and dismantle the psychological infrastructure *within ourselves* that violates the spirit of human liberty in the Burkean sense. To illustrate:

When an atmosphere of chest pounding and competition between rivals over scarce resources is ripe, such as it was at the apex of the imperial and colonial era in 1914 on an intergovernmental scale, and today on an atomized but pan-societal scale, human beings tend to fighting and irrationality. The cosmological, natural, system of thought finds that underlying the problems of disorder in the 21st Century, as underlay the wars of the 20th, as underlay those throughout all history when king, nation and empire fought empire, nation and king- was a manifestation of a certain force at work in the background. Identifying this force and fighting it may be the greatest challenge still, because we do not find it by looking outside... we find it within. To make matters worse, this force, our age-old enemy, is also our age-old friend, to which we owe our current aliveness: it is the biology of base survival coded into our genes.

This coding is, so to speak, our evolutionary 'original sin.' Cognizance of it, the human territorial instinct, the animal-like way we compete for resources, ironically means we restore to ourselves a moral regime; considering the individual once again as a flawed creature, damned by over three billion years of evolution, we are liberated to place the appropriate 'chains upon

²¹⁹ Sailer's term, from an article on how the Americans who were fortunate to have fallen on the right half of the intelligence bell curve in America have abandoned those on the left half. See: Sailer, Steve, "How to Help the Left Half of the Bell Curve," *iSteve.com*, 09/2000.

our appetites,' again recognized as such. This is how a refocused popular advancement of space and the cosmic order, by clarifying again that drive Thomas Aquinas gave Christendom to discover man's entire natural superstructure and internal substructure as given to him from God, can heal a serious social ailment: individual loss of the inner life.

Loss of this inner life also is the cause of 'Affluenza' amongst the wealthy, from America to Britain to Germany. Defeating it is equally achievable, since the problem comes from the feeling that one is born, schooled, works and takes a spouse, produces 0-2 children, retires and dies with preset regularity. In the middle of this process, a problem arises because while humanity is endowed with an exploratory spirit, commanding us to seek out new experience, a modern adult finds this feeling invalidated by his circumstances, seeing them as *fixed* from the present moment until the end of life. A natural depression of the soul occurs, causing 'Affluenza.' Not only are people not cognizant of a greater human future, but even a future within their own individual life.

Tsiolkovsky's incredible challenge, however, calling for construction of orbiting settlements, space stations, Moon and Mars colonies and more, using technology available now, has so many facets that it gives every single member of society something real to channel their energy into, real interests to pursue, and promises to incorporate them into the progression itself. The moment of realization that there *is* an evolution that it is going on, and consequently that life is not static or petrified, allows the self to be placed within this most important of all possible activities. For some, this happens when they can pursue their real interest. For others, when they feel the totality of nature for the first time. As Stephen Wolfe, a former congressional aide in charge of space policy put it:

At some point in your life there was a moment when you were overcome by the full magnitude of the unlimited possibilities of the human future in space... there is nothing hokey or fringy about the space settlement passion: It is the direct recognition of humanity's destiny, and should be a source of great motivation, not hesitation.²²⁰

When people feel their destiny is sealed, such as the millions suffering from 'Affluenza,' their hope is shattered.²²¹ But part and parcel of happy family life also, beyond personal fulfillment in one lifetime, is the progression of the generations. Chronological connectivity betwixt mother and daughter, father and son recalls the continual tradition. Strengthening of this connectivity in

²⁰ Please do see: Wolfe Steven, "Space Settlement, the Journey Inward," Ad Astra, 2004.

²²¹ Another population that may not be affected directly by 'Affluenza,' but in the same psychological way feels its ultimate sting- the old. At the end of life, the one at peace is he who knows his life meant something, and will be written in as part of a greater whole by offspring who may excel even he; thanks in part to the conditions he helped create. If psychologically valid, its opposite comes when the elder who fought for and held values of something above survival, such as the country and God, finds insidiously, the patrimony not accepted, and changed beyond recognition *without outside oppression*. In this situation, it might even be said that in a way, a person dies twice; as the blinking last farewell, of the out of stock.

an atomized society, through the cosmic frame, means internalization of the patrimony by the next generation, which is completely outstanding for family life.²²² After all, it is one thing to receive a patrimony; it is another to make it one's own.

Related to this value regime is the Imperative's alleviation of the soul-crushing void in youth, naturally rebellious, searching for something more grand... and presented only with the underclass culture as an alternative to that against which they rebel. The powerful counterforce of cosmic reality answers their search for meaning and continual renewal, providing a life-enhancing future. How many lost souls in our schools and streets practice depression and cult inspired self-mutilation, or damage their neurons with pill experimentation; how many millions of fans of comic book-style superheroes despair in the belief great abilities exist only in them; how many of the 'popular crowd' young men and women, full of drive channeled into sports, cars and adolescent sociability, still turn to substances destroying their recognition of reality? How many jaded hooligans have deadened their minds to the possibility something exists outside of 'bread and circuses,' and battle each other in the streets around Europe? And how many inquisitive, lonely nerds inhabiting school libraries across the Western world can, like the others, find meaningful applications and their future in the sciences, technology, math, engineering and humanities, as part of the great cause: the human future as a multi-planet species?

As for the drugs, the specific reason as we have seen, is that reality holds no reason strong enough for people to stay in it, given the choice. We have let the 'Nothing' creep in, swallowing whole the Pill of Murti-Bing, often times through a popular culture that, as we have observed, both fills the mind and empties it at the same time.²²³ Into this chaos of modernity and post-modernity is cast the *white magic* inherent in the reality of the cosmic order... a new imperialism for sure, a manifest destiny absolutely, but of a kind that returns us once again to the positive side of those endeavors, exploding social barriers and healing scars left on us by the human condition, because it is won by and for the race, in the singular.²²⁴

²²² This is of course, the ultimate hope of environmentalists throughout the West, as well. While the means are different, the ends are the same: a land preserved for the next generations. The Moon's 'magnificent desolation,' winds up being our best way to combat un-magnificent desertification here.
²²³ Dalrymple, Theodore, "The Suicide Bombers Among Us," *City Journal*, autumn, 2005.

²²⁴ In Europe's pre-Christian days, as well as fantasy today, 'White Magic' connotes that kind whose practice is solely for the purposes of good. It is sometimes employed as an 'elixir of life,' a last resort in healing, which enters the diseased body, and without reference to something physical, works a cure.

Brussels:

Every face was turned to the TV, mesmerized by the ghostly images from the lunar landing vehicle. An American was going to plant our nation's flag on the Moon, but what we were about to witness would transcend concepts of borders and nations.²²⁵

Paris:

I listened, I watched. A part of the wound in my chest, the one caused by Vietnam, healed a little that afternoon. I don't think the rest ever will, but I do know that for the first time in my life, on a crowded sidewalk in Paris, I was proud to be an American.²²⁶

Saigon:

Military personnel and [Vietnamese] local natives alike crowded around the barracks television. No one spoke a word. It was as silent and reverend a moment as you would find in any Church, Synagogue or Buddhist Temple. There was a sense that in that moment, this world... would never again be the same. As the local natives stood there motionless... in the same awe as we all had, I couldn't help thinking that this fragile planet needs people like the heroes of *Apollo 11*.²²⁷

Warsaw:

It was a great day in Warsaw... President Kennedy was very popular in Poland; his speeches about going to the Moon were universal and appealed to all of us. On the day Neil Armstrong and Buzz Aldrin walked on the Moon, literally thousands of people went to the American embassy near Łazienki Park and waited there to pay the respect to those who dared to move the human frontiers further. It was a day of jubilation and rejoicing. After Lajka and Gagarin, on that hot day in July 1969, we were witnessing another Human First. The immortal words of Armstrong, translated at Warsaw as '*Mały krok dla człowieka, wielki skok dla ludzkości*,' resounded through the hearts of Polish people. People were watching over and over again flickering reruns of the first Man on the Moon. Many tears were shed; it was a great, memorable day.²²⁸

²²⁵ From Belgium: http://www.wherewereyou.com/frames/intl.html

²²⁶ From France: http://www.wherewereyou.com/frames/intl.html

²²⁷ From Vietnam: <u>http://www.wherewereyou.com/frames/intl.html</u>

²²⁸ From Poland: http://www.boeing.com/news/feature/apollo11/where.html

Detroit:

We were all glued to the TV, just like the rest of America. Landing on the moon was THE biggest thing that happened that summer. We listened to TV and read the papers about the various preparations. No one wanted to miss the take-off... we had seen takeoffs before, but none like this. Even those who thought space exploration was irrelevant were awed. It was too hard to believe; even the news media had excitement in their voices when they reported, it was riveting. We watching the astronauts float around the capsule, discussing the effects of gravity. Then there was the downward trek- I can still hear Walter Cronkite's voice as though it were yesterday, "The Eagle has landed." We watched the progress & listened to the logic of the positions the various astronauts would take; saw Neil Armstrong's faltering exit steps and heard the words never to be forgotten. I still get chills when I hear those words. What had happened was unimaginable! This was not reading 1984 in school, this was real! It was a moment of victory, a soaring height that somehow lifted an American spirit broken by JFK's shooting in Dallas, Robert's walk through the back doors of the California restaurant and the silence of Martin Luther King. We were a great nation once again! America would rise above its struggles, and we, the people, were lifted.²²⁹

The account from Brussels recalls the transcending effect, 'the touch,' of the ultimate event. From France we see hope return in a person torn by hatred, displeasure and alienation over concurrent US foreign policy in Southeast Asia. The third account, from the war-zone itself, sees a soldier finding 'something right,' in a world in which so much is wrong. And *from a far country*, we see the effect of real space events on mass psychology. Poles, along with the Soviets and others around the world watched these events, 600,000,000 strong.²³⁰

The crucial psychological aspect the event had in places like Peoples' Poland can be understood only by considering an additional layer of its meaning: the Moon landing was a universally visible defeat of the Soviets that no propaganda could cover up, and at the same time a stupendous accomplishment, done through the energy of a country perceived to have been created that people might live free. It was confirmation that somewhere out in the world, *the Americans* were still there. It was the direct successor, in a new era, of June 1944, when word spread from the beaches of Normandy to the barracks of Birkenau, that a force greater than evil had entered fortress Europe. Hope is tangible when something 'big' is accomplished by such a force, and when Ronald Reagan later called on America to be vigilant in embracing its

²²⁹ From Detroit: Interview with Bobel, Helen, conducted on 30/09/2006.

²³⁰ Other examples from behind the Iron Curtain show Czechoslovak students in Prague cheering the landing, Hungarians in Budapest as well. Even in Moscow, schoolchildren congratulated Americans affiliated with the US embassy even as coverage in the area was jammed by the Soviets in the last minutes.

responsibility as 'a city on a hill,' this limbic effect on global psychology is exactly why. For traditional Americans, recent loss of this certain eminence has got to be the most bitter, and the most poignant, casualty of the ongoing debacle in Mesopotamia.

But there was another thing that was said during the time of the Moon landing, a statement by President Nixon in Washington during the first 'interplanetary telephone call,' which forms the core of the Imperative's social cohesion aspect:

Because of what you have done the heavens have become a part of man's world, and as you talk to us from the Sea of Tranquility, it inspires us to redouble our efforts to bring peace and tranquility to earth. For one priceless moment in the whole history of man, all the people on this earth are truly one.²³¹

This may be called the 'E Pluribus Unum' effect; it is a tangible reward of human-centered, goal-oriented space development, which shows the social benefits of the Imperative are directly in line with the goals of the EU. Socially, the Imperative antidotes the vexing problem of unifying dissimilar individuals under the umbrella of the simplest truth- no matter our differences, we are all 'on the same boat': the Spaceship Earth.

This was the effect of one single historical event, but the beauty of reorienting to space is that it is a continual progression. Therefore, on top of the 'all are one' feeling is a sense of being involved in society's evolutions. In Billington's analysis of the contemporary Russian mind, he finds Russians today do not see the world as progressing at all. Many in fact depressingly understand, 'life will never get any better than this.'²³² Contrariwise, asking a Russian in the 1960s about the future, honest responses despite Soviet rule can be said to have concluded a different idea- that the world somehow *will* be better. Only part of this is attributable to 'building a new society' propaganda. The Soviet *Conquest of Space* was not merely a social indicator of actual progression; it was the cause of the psychology that fueled it. It was how Soviet people could understand progress to be something tangible.²³³

The change to the present state is evident in an account of Moscow's Museum of Space, by a Western visitor:

I made two visits to the Soviet Union's main space museum in Moscow. The first was in 1968, at a time when the Space Race was in full swing. The USSR appeared to be winning, and the bloom was on the rose. At the Park of Economic Achievements in northern Moscow, the Kosmos Pavilion was bright with the summer sunshine and the smiling faces of thousands who thronged past the rows of futuristic space machines. This was their future, worth sacrificing for, and they knew the world envied them... In 1989 I hiked through early-spring slush and late-afternoon gloom to revisit the same shrine. The long, dingy hall had

²³¹Nixon, Richard M., 'Interplanetary Telephone Call,' 20 July, 1969

²³² Billington, pp. 105-115.

²³³ *Ibid*

the aura of a forgotten tomb. The colossal rotunda area was cordoned off, its collapsing central dome a hazard to stragglers who wandered amid the dust and rust, seeking nostalgic glories. Through a double door, a small side hall offered a colorful, brightly lit exhibit on flying saucers and Extra Sensory Perception. Grim-faced out-of-town Soviet tourists broke into grins of glee as they entered the world of the paranormal, leaving the disappointments of reality behind.²³⁴

Interestingly, people really do feel a strong correlation between scientific progress and improvement in their daily lives. According to international poll data distributed by the US National Science Foundation, responding to a question asking "if science and technology is making life healthier, easier and more comfortable," 91% of Americans, 78% of Europeans (EU-25), 73% of Japanese, 65% of Chinese, and 53% of Russians, agreed.²³⁵ The large number of Russians who did not asks for analysis of causation.

For more proof, we may look at the great many Americans who desperately want that the propaganda fed to the public wearing the cloak of Uncle Sam and patriotism, turns up to vindicate American action. When Iraq is compared to Vietnam, it is in the physical 'quagmire' comparison, but there is also a major dispiriting quality: the usage of the public purse and public blood for the military-industrial gain of a portion of the elite. Understandably, these people who fully consider America their *national-state*, nothing less, want it not to have fooled them. In their millions, they still want to be part of the ongoing American Dream, on their way to a radiant future, the way it is supposed to be, in the Hegelian sense. They want a real future.

The social benefits of *Tsiolkovsky's Imperative*, however, ring most clear for Europe. Why not use cosmic outreach as the centerpiece of European unity? Should a cosmically disorganized EU assert itself, catch up with and then physically surpass Russia, achieve parity with and eventually surpass the United States while working in tandem with both, it would mean that in a sense Europe has reclaimed its moral place in world order, a place that is admirable, where rightness trumps pure power.

In international relations, prestige (how one looks in the eyes of others) does mean a great deal. Such a move by Europe, beginning with a Kennedy-style declaration of paradigm shift to movement into the cosmic 'near abroad,' would not only force a worldwide revaluation of the EU, but also unveil at long last what the true European project is *supposed to be*. The EU's purpose, its sole purpose, is to be the great vehicle, stronger than any nation standing alone, that carries Europe toward a prosperous future.

Importantly, the great shift would not only be for Europe, but for greater Europe. It would show Europe's estranged neighbor to the east and its offspring in the west that the old continent

²³⁴ Oberg, James, "Trouble in Star City," The New Book of Popular Science, 1992.

²³⁵ "Attitudes Towards Science and Technology: By Country," National Science Foundation, 2006.

is back once again as leader of the world stage. Listen closely, it would say, to the Concert of Europe playing a new song. Ultimately of course, it is not for abstract political systems, but for the social cohabitation of the peoples of the EU itself, that European space humanization grants the key self-actualizing power: it delivers the Grecian, Christian, Victorian vision necessary in defining a real European future.

Is the appeal to change current post-modern mass-psychology really so far-fetched? After all, this chapter has shown that it was changed away from this way of thinking after the wars. In describing pre-WWI France, Jacques Barzun remembers:

The joy of life was in being there... the zest for life was tied to the spectacle of good things

being done with confident energy. The outbreak of war in 1914 ended that.²³⁶

Today's Western malaise is therefore a product of World War. The final defeat of the Germans gave birth to the bi-polar world, in which the power and productivity of liberalism played against and eventually defeated communism on the geopolitical chessboard. The victory, however, of the sort of liberalism that the West has become, is the ultimate revenge of Adolf Hitler on both the winners and losers of the war he began.²³⁷ For the cultural old order he despised, that of Barzun's France, and the entire idealism of civic national self-determinationwas terminated. It is the reclaiming of that grand tradition, the social and civilizational lifemanners spiritually eclipsed in its grandchildren today, that the humanization of interplanetary space, as centerpiece of social life, sets alight.

²³⁶ Barzun, Jacques, Jacques Barzun: A Reader, Harper Collins, 2002, pg. 3. He goes on to recall how it was being recaptured, despite the social and cultural mangling of the first war, in the interwar period, only to be finally destroyed by the second. ²³⁷ America and Britain for winning, and his 'beloved Germany' for losing

CHAPTER II CONCLUSION

Placed before us are the purely social reasons, within the context of our own civilization, for Europe to step up and lead the charge in pursuing *Tsiolkovsky's Imperative*. Both the effect it has on the Western mind and its social-unifying power comes from pursuing the quest itself, which is as important as its destination.

The EU has very big shoes to fill today, namely, those of its own Member States in times gone by. Norman Davies speculated that we might call the 18th the French century, as that was the world's strongest and most influential power. The 19th is of course British, and the 20th American (a enlightened European offshoot). The 21st? Probably the Chinese, many say. If Davies' Late European III does pass into the night, the 'interregnum' would consist of totally new problems that make it and its scale absolutely unlike those that came before.

Certainly the weight of individual European states on the world stage is today much smaller than 100 years ago, but an EU decidedly moving to ascendance in space means one in which Briton, Frank, German, Italian, Spaniard and Greek, as well as Basque, Scot, Silesian, Gypsy and recent immigrant, see ongoing accomplishment on that same world stage, increasingly full of 'crowd symbols' that could only have been accomplished and sustained by a strong, united Europe.

The move to space is a very social goal. Science fiction author Sylvia Engdahl noticed something striking when reviewing the corpus of material in her trade: in visions of the future considering an Earth-only setting (humanity as a single-planet species), the story is always dystopian (See Appendix-4).²³⁸ The positive futures exist *only* when humanity is spread all around the Solar System. Why? The most important reason is that a single planet is a closed system. All the stresses we have now, for instance, will be exacerbated in the decades to come, but as speculated above, the social stresses on Western Civilization mean the window to space is closing.

Thus we add the factor of time, and find that if it is true, we are at that brief moment of convergence between technological and civilizational ability. The technological side of it is defined by Engdahl as the "relatively short time during which we have the capability to get to space, and have not yet run out of the resources to do it."²³⁹

This chapter has defined the civilizational side. The Balkanizing of Western society is steadily making a unified action as great as space conquest less and less possible. At the same time, in 2050, 9 billion people will be using the resources of this same planet, already overcrowded with mass chaos, famine and brutishness. When Thomas Malthus wrote in 1798's

²³⁸ Please see Appendix-4 for further examination of this Earth-bound vs. Expansionist phenomenon.

²³⁹ Engdahl, Sylvia, "Space and Human Survival," 2003.

'Essay on Population' that Britain would become overcrowded, causing famine, he underestimated the factors of technological advancement, economic growth, and the siphoning of people to America. Britain luckily, was not a closed system. Without space settlement through *Tsiolkovsky's Imperative*, however, Earth is. The convergence of these two critical equations now (resources and social ability), means that if the European Union, the United States, and the Russian Federation do not undertake the Imperative soon, *we can never do it*.

"There is just one thing I can promise you about the outer-space program: your tax dollar will go farther."

-Wernher von Braun

CHAPTER III FROM THE EARTH TO THE MOON

Tsiolkovsky's 1903 rocketry theory, expounded in *Исследование мировых пространств реактивными приборами*,²⁴⁰ remained largely unknown outside of the Russian Empire. Another scientific visionary inspired after reading Verne and Wells, however, began his own investigations in the United States. Robert Goddard published *'A Method of Reaching Extreme Altitudes'* in 1919, and built the first liquid-fueled rocket (1926). In Germany meanwhile, yet another pioneer stirred to action by Verne, Hermann Oberth, published *'Die Rakete zu den Planetenraumen*,²²⁴¹ in 1922, completing a rocket of his own in 1929.

The first place this technology came into use on a major scale was in the Third Reich. Hitler ordered rocket technology further developed for the 'Vengeance Weapons' he planned on using to devastate London remotely, without the need to send Luftwaffe bombers against the Royal Air Force and over the island's anti-aircraft fire.²⁴² The V-2 did its terrible work. At war's end, the new technology was captured by the Americans in the person of engineer Wemher von Braun, the man primarily responsible for their design. At the same time though less well known, the Soviets, after raising the red flag over the Reichstag, also obtained plans for the V-2.

The year 1946, then, was that strange one in which manifold signs in the heavens and on the Earth announced major changes and unusual events. After an extradition of sorts to the US, von Braun, along with American scientists in the deserts of New Mexico, turned their gaze and the rockets skyward.²⁴³ Without publicity, some rockets flew so high that they penetrated into the heavens, realizing the dream, while back on Earth, the RAND Corporation released its inaugural report:

A satellite vehicle with appropriate instrumentation can be expected to be one of the most potent scientific tools of the Twentieth Century. The achievement of a satellite craft would produce repercussions comparable to the explosion of the atomic bomb.²⁴⁴

In the summer, there was a great eclipse over Bikini Atoll in the South Pacific, as the US detonated the first of many nuclear tests there, while in New York, the United Nations met for the first time. In the US and USSR, scientists continued work on projects they generally felt would be worse than any plague of nature, and would one day destroy the Earth.²⁴⁵

²⁴⁰ Russian-English: 'The Exploration of Cosmic Space by Means of Reaction Devices'

²⁴¹ German-English: 'By Rocket into Planetary Space'

²⁴² Hitler imagined these weapons to be used for the purposes of 'vergeltung' or 'massive retaliation.'

²⁴³ The 'extradition' was called 'Operation Paperclip,' in which about 500 German scientists were moved to White Sands, NM to work for the US Government, See: NASA, "Sputnik: 40th Anniversary," 1997.

 ²⁴⁴ Rand Corporation, "Preliminary Design of an Experimental World-Circling Spaceship," 02/02/1946.
 ²⁴⁵ For instance Sergey Korolev (sometimes spelled Korolyov), who predicted the effect of the new

weapons he was working on: "We will vanish without a trace."

The development of rocket technology (SRBM's MRBM's and IRBM's²⁴⁶) was ongoing, concurrent with nuclear technology, and turned into a race to see who would be the first able to deliver warheads over oceanic distances. This race culminated in the Intercontinental Ballistic Missile (ICBM), pioneered by the Soviets, an accomplishment of space visionary Sergey Korolev, who was released from a gulag by Stalin during the war to work on the technology. His ICBM, called 'R-7 Semyorka,' was successfully tested in 1957, able to deliver a warhead nearly 9,000km.

Though working for Stalin and Khrushchev, Korolev was animated by the visions of Verne and Tsiolkovsky. He successfully convinced Khrushchev of the great 'propaganda value' in orbiting a satellite before the Americans, and on 4 October 1957, in the skies over the Baikonur Kosmodrome in Kazakhstan, the Space Age began. The surprise Soviet launch of Sputnik (or 'Little Wanderer') shocked the world. In America, NASA was created and signed into law by President Eisenhower, while schools in the United States and the Soviet Bloc refocused curriculum on science, mathematics and industry.²⁴⁷

The 1st Space Race featured two superpowers battling each other for its conquest, which in the end saw significant victories for both sides. The Soviets took the early lead with Sputnik and by orbiting a dog, named Laika (1957), before sending up Yuri Gagarin, to be the first man in the cosmos (1961).²⁴⁸ Later the Soviets would execute the first space-walk (1965), and pioneer the first, and the first continuously inhabited, space station. The United States followed these achievements in turn, successfully encountering Venus (1962) and Mars (1964) by probe and executing the first in-orbit rendezvous in 1965. Finally, in 1969 the US completed the ultimate objective, 'landing man on the Moon and returning him safely to the Earth.'²⁴⁹

The Space Race crested with the Moon landings, and reached a symbolic end in 1975, when American and Soviet ships performed a docking in orbit (Apollo-Soyuz), done in 'friendship.'²⁵⁰ This was also the year that the European Space Agency (ESA) was founded, making a 'race' between two superpowers outmoded.²⁵¹ Continuation of exploration went on of course, highlights of the 1980s being the later Salyuts and Mir space station, Voyager and the US Space Shuttle program. These sustained interest in space during the decade, along with the

²⁵⁰ Lovell, pp. 6.

²⁴⁶ SRBM: Short Range Ballistic Missile (to 1000km). MRBM: Medium Range Ballistic Missile (1000-2500km). IRBM: Intermediate Range Ballistic Missile (2500-3500km). ICBM: Intercontinental Ballistic Missile (3500-Up). The latter had the double function of being able to launch satellites, including Sputnik and the first US satellite, Explorer 1. These missiles descended from the V-2.

²⁴⁷ Lovell, James A, Space: A History of Space Exploration in Photographs, Firefly Books, 2004.

²⁴⁸ The launch after Sputnik carried a famous dog, Laika, on the 40th Anniversary of the October

Revolution. It was a one way trip. The dog was sent to see how it reacted to orbit and weightlessness, before being sacrificed upon reentry. Now Laika is in a way immortalized- the first living thing in space. ²⁴⁹ Kennedy, John F., *Speech to Congress*, 25/05/1961.

²⁵¹ Goebel, Greg, Race to the Moon, 1957-1975, 01/08/2005.

'Star Wars' possibility. In the 1990s however, while the Hubble Telescope can be considered a first class mission, 'crowd symbol' type events connecting regular people to space activity hit bottom. Only the relatively banal construction work on the International Space Station (ISS), a cooperative venture between the US, Europe (including Canada), Russia and Japan, signified a new presence.

Throughout this period and into the first years of the new century, critics of strictly unmanned science missions and excursions to Earth orbit could point to a loss of public imagination in the great beyond- a conspicuous lack of any vision of it as a beneficial or even a necessary part of the human future. Indeed, it almost seems an era of undone dreams; instead of 2001 being a year in which Americans and Russians routinely visited their bases on the Moon (as portrayed in the 1968 film of the same name), it ended up as the year terrorism erupted, decisively re-politicizing human affairs.

Living in this multi-polar, terrorism-ridden order means asking what the role of space and space-policy is in Euro-Atlantic security, for purely inter-civilizational and competitive reasons. Although the public in Europe and even America are relatively complacent or uninterested in space events, space, to borrow a phrase, is increasingly interested in them. This chapter is a foray into the accelerating international power play that is seeing a military reach into the near-Earth environment. It will show why the multi-polarity of the civilizational order requires Western air and space dominance to maintain military authority, postulating that the eyes of Europe will turn to the heavens for, at least, reasons of diffidence. It will conclude by showing why it is *Tsiolkovsky's Imperative* itself, which satisfies this dangerous military reach into space in the safest, most productive and most cooperative way.

3.1 THE AGE OF AQUARIUS REVAMPED

Only a few years ago in the West, 'space activity' was a pejorative term meaning 'too much money.' Newsmakers took space events with the same seriousness as that given to someone suggesting, in a Harvard University faculty lounge, Biblical consultation in grappling with modern life's conundrums.²⁵² But there is something kicking 'space science' back into the mainstream of political respectability: though still not on the mind of the public, the *Age of Aquarius* is dawning again. The pace of its arrival over the horizon is slower this time because there is no single 'event' like Sputnik to officially trigger what amounts to a new Space Race. Yet, this is exactly what has commenced.

The new 2nd Space Race is different from its bi-polar predecessor in that it has more actors, is not as linear, and will take longer to run. It promises to share attributes in some ways with the first, but to diverge from and expand on it in others. For instance, it brings back the great 'crowd-symbol' from the first, namely, going to the Moon. To this it adds going to strategic orbital locations, near-Earth asteroids and the planet Mars. Yet, the most essential difference between the two is one of permanence; this time, the point is not to go and come back, but to go and stay.

The prominent human-centered component of the 2nd Space Race requires a new generation of spacecraft to travel in, as well as robotic scouting missions, some already underway.²⁵³ Like the first, it promises to act as a spur and an outlet for technology development, and finds its focus in fulfilling important geopolitical ends; most importantly, large-scale strategic cooperation and competition alignments between centers of order in a disordered world, most likely to be drawn along Huntington's civilizational lines. In the next decades, where exactly the powers fall on this cooperation / competition spectrum will increasingly factor in to the status of international peace.

If this 2nd Space Race has an 'official' beginning, it must be the January 2004 public unveiling of the American '*Vision for Space Exploration*.'²⁵⁴ As much as any other single event, this signaled the reinvigorated interest in serious manned exploration and called on the United States to lead the charge. Although President George W. Bush specifically stated, "The vision I outline today is a journey, not a race," NASA was radically redirected- its energy shifted to the

²⁵² Leibowitz, David, Power, Authority and Exchange, Michigan State University, 1997.

²⁵³ For example, there are many active probes in orbit around and on Mars, from NASA and ESA.

²⁵⁴ See: National Aeronautics and Space Administration, The Vision for Space Exploration, 2004.

design and development of a new spacecraft, called 'Orion,' which like the Apollo spacecraft from which it descends, will be used to go to the Moon and Mars.²⁵⁵

In 1962, the president's speech was somewhat more direct:

No nation which expects to be the leader of other nations, can expect to stay behind in this race for space... We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard.²⁵⁶

These words of John F. Kennedy were made good, but today's race will take longer by design. The NASA roadmap for the return to the Moon puts America there between 2018-2020, fifteen years after Bush's speech. Also, as the ultimate destination is Mars, it may not be completed until 2030 or after- or it may not (and ideally would not) end after a Mars landing.

During the 1st Space Race, a simple paradigm was overruling: 'Whoever gets there first, wins.' The players were easy to identify: for the Soviets it was, 'us and the Imperialists,' while for the Americans it was, 'us and the Reds.' The situation today, however, reflects the character of geopolitical multi-polarity. There are many more active participants seeking increased space activity, and while NASA retains its pre-eminence among world agencies, it is by no means in a class alone. Astrophysicist Norbert Frischauf explains the current situation as follows, but please do see Appendix-5 for a more complete breakdown:²⁵⁷

Although space flight is by its very nature a truly international endeavor, there is no international space agency coordinating humanity's activities. Space-flight is currently pursued actively by only a few countries, be it for strategic, scientific, cultural, and/or economic reasons. The countries with the most active space programs are the *United States* (*NASA*), *Europe (ESA)*, *Russia (RKA)*, *China (CNSA)*, *Japan (JAXA)*, *and India (ISRO)*. Of these six players, five support a manned space flight program: Russia, the US, and China have the knowledge and resources to conduct a manned space flight mission entirely on their own, while Europe and Japan each have an astronaut corps, but have not (yet) fully developed the capability to launch their own manned missions.²⁵⁸

Frischauf lists the agencies in a usual top-down order, but can one rank them? No one factor, say, launch capability, budget or experience, completely decides a rank. For example, Europe has more money in its program than Russia or China, but cannot send astronauts into orbit on its own. Nor does it have its own spaceship (a launcher like Ariane is not a spaceship). Similarly,

²⁵⁵ NASA, "The Orion Crew Vehicle," *NASA Online*, 2006; Other destinations include near-Earth asteroids, the Martian moons and SEL-2 (Sun-Earth Lagrange Point 2).

²⁵⁶ Kennedy, John F., Moon Speech at Rice University, 12/09/1962.

 ²⁵⁷ See: Appendix-5. These groups have been methodically researched by the author, and placed there on his opinion and not that of a recognized authority, because no 'rating system' of the type can be found. This structure is not taken as an official means of cataloging the agencies, but for personal reference only.
 ²⁵⁸ Frischauf, Norbert, Conference Report: Space and Security, Office of Science and Technology,

Austria, 2004.

Russia can be said to be ahead of China and Japan, both of whom have bigger budgets, even considering purchasing-power-parity.

Half of the eight world civilizations then, the Western, Orthodox, Sinic and Japanese, are undertaking manned exploration and development endeavors, while the Hindu is asserting itself thus far with robotic probes. Importantly, the roadmaps for these major players reveal that objectives involving a common end point, when looking thorough the Moon-Mars frame, are very similar:

1) The United States (NASA), running on a \in 13 billion budget, has adopted Project Constellation, which legislates a Moon landing in 2018-2020, a Mars landing 2025-30, and possible intermediate stages.²⁵⁹ The US has oriented itself to 'go it alone,' and is reluctant to accept cooperation, even from Europe. This may change later, at least for robotic scout missions and in joint astronaut flight personnel. The new spacecraft Orion is being developed with the capability to service space stations and go as far as Mars and back (See Appendix-6 for more on this roadmap).²⁶⁰

2) *Europe* (*ESA*²⁶¹), running a \in 6 billion budget (including here ESA, the national agencies and Canada's CSA), has adopted *Project Aurora* as its overall exploratory mission framework. It calls for the same Moon-Mars trajectory as NASA, however ESA Member States have the option of not participating financially. This kind of federalism makes independent Moon-Mars realization uncertain, but perhaps drives Europe to work with other powers. As far as a ship to go in, ESA wanted to co-operate with NASA but was denied, due in part to US laws against technology sharing.²⁶² ESA turned to Russia next, with whom it is studying a worthy competitor to NASA's Orion. The only fully approved part of Project Aurora thus far is the 2011 ExoMars Rover (see Appendix-7 for the roadmap and ESA's expansion into Central and Eastern Europe).²⁶³

3) The Russian Federation (RKA), running on a \in 700 million budget, has no named Moon-Mars 'project' officially, but has announced its intention to return to goal-oriented space

 ²⁵⁹ 2019 is rarely mentioned, but this would be the 50th anniversary of the first Moon landing.
 ²⁶⁰ NASA, *The Vision for Space Exploration*, NASA Online, 02/10/06

²⁶¹ ESA is not controlled directly through the EU. It is, in fact, "An intergovernmental organization with no formal organic link to the European Community (EC), having different rules and procedures." According to its mission statement, "In recent years the ties between the two institutions [ESA and EU] have been reinforced by the increasing role that space plays in strengthening Europe's political and economic role, and in supporting European policies." Further, 'The European Space Policy that is being jointly elaborated by the two organizations and which is expected to be endorsed by both the EU and the ESA Councils in the first half of 2007.'

²⁶² The Director-General of the ESA is Jacques Dordain. After offering cooperation to NASA, received a negative response: "I have been told by Mike Griffin... that the CEV (Orion) is not for international cooperation. But if Europe is not involved in the next-generation transportation systems, we will stay forever a second-class partner."

²⁶³ European Space Agency, ExoMars, Aurora Exploration Program Online, 2006.

development.²⁶⁴ Various representatives of RKA differ in the Russian 'roadmap,' but in general Russia's plans consist of updating the Soyuz Spacecraft by 2010, gaining the ability to travel around the Moon and back in the 2010s, and constructing a base there throughout the 2020s, for 'industrial exploitation.'²⁶⁵ The Mars trajectory is set at 2030. Cosmonauts will travel locally in the updated Soyuz until the 2008 result of an ESA-RKA design study (ACTS), is built.²⁶⁶ Russia is prone to cooperate with other players, such as Europe in designing the new ship, and now especially, with China, whom it may join with to 'explore the Moon together.'

4) China (CNSA), has an estimated budget of \notin 1 billion, and possibly the most surprising overall structure. It employs a veritable army of 250,000 people in space activity and has come a long way since 2003, when it became the third country in the world to indigenously launch a 'taikonaut' (Chinese astronaut).²⁶⁷ The Chang'e Program is its Moon mission, to be completed in 'robotic phase' in the decade 2007-2017, when the 'manned landing phase' begins.²⁶⁸ The year 2024 is considered most likely.²⁶⁹ Though China is able to, like the US, 'go it alone,' Russo-Chinese working relations are being formulated, probably to emerge as the main US competitor.²⁷⁰

5) Japan (JAXA), running on a \in 1.6 billion budget, has traditionally focused on science and launcher technology, strongly cooperating with other powers. In 2005 JAXA realigned, considering a Moon-Mars roadmap that sees the SELENE Lunar probe launch of 2007 as initiator of the new plan, due in part to the new proclamations by its traditional competitor, China. Japan's first manned mission is stated to occur on the American timeframe, with a 2020s groundbreaking of a permanent lunar base, to be complete by 2030.²⁷¹ There is no plan for independent Mars activity.

6) India (ISRO), runs a \in 560 million budget, but has as yet no intention to 'go it alone,' anywhere. It may however, join in the race thorough cooperation with other powers. Recent evidence for cooperation comes from the signing of an agreement to jointly benefit, with the ESA and NASA, from the 2007 launch of India's biggest-ever space project, the Chandrayaan Lunar probe.²⁷²

The fact that there are 4-5 independent missions to the Moon slated for the 2017-2024 timeframe, within a cooperation / competition paradigm involving Americans, Europeans,

²⁶⁴ Russian Federal Space Agency (Roscosmos) RKA, Space Programs, RKA Online, 2006.

²⁶⁵ RIA Navosti, *Russia Plans to Launch First Flight to the Moon 2011-2012*, Navosti, 29/08/2006.
²⁶⁶ The Clipper shuttle was originally to be developed with ESA cooperation until ESA backed out in 2006. It is currently uncertain whether this will be the actual ship to oppose the American Orion craft.
²⁶⁷ 'Taikonaut' is the Chinese version of a European-American 'astronaut' or Russian 'cosmonaut.'
²⁶⁸ AP Wire, *Russia, China Plan for Moon Mission*, 11/09/2006.

²⁶⁹ Ibid

²⁷⁰ Russians sold China the design for the Shenzhou spacecraft based heavily on Soyuz.

²⁷¹ ABC News, "Japan sees Manned Moon Station in 2030," ABC News Online, 02/08/2006.

²⁷² Rabinowitz, Gavin, "India's Moon Probe to Carry two NASA Experiments," Space.com, 09/05/2006.

Russians, Chinese, Japanese, Indians and perhaps others, solidifies this as a 2nd Space Race. The Moon-Mars drive is its main component, and also the most important, because it can be made to double as the first phase of *Tsiolkovsky's Imperative*.²⁷³ Against this backdrop of the Age of Aquarius reborn and revamped, however, is the other dimension of this new 2nd Space Race. It is the part of the Cold War that never really ended: the competition for geopolitical strategic advantage through militarization of the orbital environment.

Already, above the sky, arrays of Earth observation satellites, navigation, and positioning systems act as 'electric eyes,' and are being developed and orbited by a growing number of nations. As well, missile defense and other hi-tech systems are joining them. While Moon-Mars competition promises to charge the next decade with strategic development ala the 1960s, the military applications threaten to assume rather the character of the 1980s and 'Star Wars.' In its more virulent form, space becomes an arena for the extension of geopolitical issues on Earth. Though similar and linear in some respects, this is not your father's Space Race.

²⁷³ The ESA through Aurora is mainly concerned with finding life on Mars, which is a noble goal. See: ESA, "Next Phase Reached in a Definition for a Mars Sample Return," 2006. Almost always, scientists hope to find evidence of life there. Yet, for Tsiolkovsky's Imperative, it is rather better if there is no life on Mars, so it can be opened for colonization and settlement from Earth. If microbial forms are discovered there, many people and groups will have a great case for arguing we must not ever go there, so as to not disturb its ecosystem with human or other contamination.

3.2 THE CLASH OF CIVILIZATIONS AND THE MILITARIZATION OF SPACE

Most strategists have come to see that space infrastructure places its owners at the ultimate 'higher ground' in competitive settings. Progressive recognition of this in today's civilization-based conflict regime is one reason it will become more common as a strategic end. An even bigger factor is diffidence: the very breeding of terrorism, re-tribalization, organized crime, proliferation and Sino-Western antagonism by this order makes it a near-certainty that the West, through NATO and the US Military, will continually be required to construct peace by incorporating space as a strategic asset. This means the space around Earth will increasingly find itself as a keystone arena of action in the *Clash of Civilizations*.²⁷⁴

Like other global scale territorial matters, such as the usage and delineation of the high seas and what to do with the Antarctic continent, the original opening of the space frontier necessitated the drafting of a legal framework to provide for its effective use in a neutral way, minimizing friction. As a result, the forward-looking *Outer Space Treaty* (1967) was drafted, still holding forty years later. Militarily, its major provision bans the placement and exploding of nuclear weapons (or any other weapons of mass destruction) in orbit, on the Moon or on any other celestial body. Economically, it bans using celestial objects as 'real estate' by Earthly parties of any kind. Article II, for example, states that space and everything in it is exempt from 'national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.'²⁷⁵

The nature of space-based systems' location and essential function gives them a certain ambiguity, however, with the result that currently, there is some dispute as to whether space is or is not militarized, and what would constitute its legal or illegal militarization in the future. Most observers have decided that space is already 'militarized' because satellites with military and security applications, such as reconnaissance and tactical communications, are there, but that it is not 'weaponized.'²⁷⁶ Objects like the MISTY reconnaissance satellites and the GPS and

²⁷⁴ Union of Concerned Scientists, USC Satellite Database, 2006. As of 2006, there were just over 800 active satellites orbiting the skies above all of humanity, discounting perhaps the current crew of the International Space Station, who are living above some lower-Earth orbit satellites. Over half are American (413), while 104 are European, 89 Russian, 38 Japanese, 35 Chinese, 15 Indian, 10 Canadian and 7 Brazilian. Some like MISTY are solely for surveillance and military reconnaissance, which perform functions like Earth observation, hi-definition photography, communications (secret and open), nuclear detonation detection and missile-launch detection. See Appendix-8 to see which countries have them.
²⁷⁵ Outer Space Treaty, The, US Department of State Online, 1967.

²⁷⁶ Space weapons are, according to the Union of Concerned Scientists: 1) Any weapons (whether land, sea, or air based) able to damage a satellite or interfere with its functioning. These weapons are called anti-satellite (or ASAT) weapons. Weapons that interfere with a satellite's ground stations or ground-based communications receivers are typically not considered ASAT weapons. 2) Any space-based

Galileo arrays are manifestations of a presence with military use, but are not considered aggressive or destructive weapons, since they cannot destroy the satellites of other nations. Therefore, they are not taken to be violations of the Outer Space Treaty (see Appendix-8).²⁷⁷

Although we can speak of legal and illegal 'weaponization,' Lt. Col. Pete Hays (USAF) speculates 'illegal' weapons will be placed in space for military or commercial purposes, anyway. He argues that powers will legitimize the weaponry under the guise of 'protection of space-based assets.' This eventuality, he argues, will be enough to fuel a paradigm shift away from the peacefulness legislated in the Outer Space Treaty, causing a 'carving and commercializing' of the orbital environment.²⁷⁸ Josef W. Ashy, commander-in-chief of US Space Command, was even more succinct:

It's politically sensitive, but it's going to happen. Some people don't want to hear this, and it sure isn't in vogue, but — absolutely — we're going to fight in space. We're going to fight from space and we're going to fight into space. That's why the US has development programs in directed [kinetic] energy and hit-to-kill mechanisms. We will engage terrestrial targets someday — ships, airplanes land targets — from space.²⁷⁹

Looking at the militarization of space against the background of the Clash of Civilizations means considering the effects of Western-Russian-Chinese relations on the one hand, as they are the major hi-tech opposing powers, and rogue and failed states on the other. The call for a clear European voice on the matter emerges as especially critical now, as the fact of US action in the Middle East is helping to polarize the civilizations, damaging alliances. Fault lines and alliances being fragile, like civilization itself, and shock being sudden, Kaplan explains the problem:

In terms of political alliances, the United States has come to resemble Bismarck's Prussia. Britain, Russia, and Austria needed Prussia more than they needed one another... making them "spokes" to Berlin's "hub"; the US invasion of Afghanistan exposed a world in which America can forge different coalitions for different crises. The world's other powers... now need the United States more than they need one another. Unfortunately, the United States did not immediately capitalize on this new power arrangement, because President George W. Bush lacked the nuance and attendant self-restraint of Bismarck, who understood that such a system could endure only so long as one didn't overwhelm it. The Bush administration did just that, of course, in the buildup to the invasion of Iraq, which led

weapons intended to attack targets in space or on the ground. These weapons include space-based ballistic missile defense interceptors and ground-attack. See: Union of Concerned Scientists, Space Weapons, 2006.

²⁷⁷ Ibid

²⁷⁸ See: Hays, Peter, "United States Military Space into the 21st Century," United States Air Force Academy, 2002 ²⁷⁹ Ashy, Joseph W., as quoted by Grossman, Karl in, "Waging War in Space," *The Nation*, 27/12/1999

⁹³

France, Germany, Russia, and China, along with a host of lesser powers such as Turkey, Mexico, and Chile, to unite against us. 280

The Outer Space Treaty is beautifully idealistic. Space may not have any weapons in it *per sea*, but nuclear and conventional weapons can easily be sent from the ground into space, and some actors are working on new, hi-tech lasers for this purpose. Can the US and its NATO partners reconcile themselves and win back what has been lost- while obeying and enforcing the Outer Space Treaty- by pursuing proactive space hegemony?

²⁸⁰ Ibid.

A. A Military Space Race: Russia and China and NATO's Reemergence

The major player currently thinking about most blatantly 'weaponizing' space is the United States, which is prepared to do this unilaterally, outside of the NATO umbrella. Some see this as good, understanding that the US or NATO would eventually have to counter another power (China, Russia or other) moving to militarize space anyway. However, many, including the NATO hierarchy, are not convinced there is sufficient danger as of yet.²⁸¹

Proponents of 'weaponization' argue that the longer [America] waits, the more time other powers would have to build up their force-projection capabilities, rendering an exacerbation of the *Clash of Civilizations*.²⁸² The Bush Administration's 2002 withdrawal from the Anti-Ballistic Missile Treaty (1972) followed this line, paving the way for testing new anti-missile defense systems. Although the US is not currently constructing orbital weaponry, its national anti-missile shield, based on land and sea, may strike into space. Russian, European and Chinese designs are not as bombastic, yet, but all possess their own designs and smaller scale 'theater anti-missile systems' to cover specific localities (for example, Moscow and Israel are protected by local antimissile shields). China and the United States are noted for working on new unconventional weapons that may strike into space, damaging or 'dazzling' satellites.

If aggravation leading to great power 'weaponization' of space seems farfetched, it is worthwhile to recall that since the collapse of the USSR, an enlarged NATO has enjoyed unchallenged air dominance.²⁸³ The only challenge to it (or its components fighting individually) has been ground force, mostly urban-guerilla. But this is changing, and soon. For example, Robert D. Kaplan sees barefaced Western (US) – Chinese conflict arising as the central geopolitical issue of this century:

Given the stakes, and given what history teaches us about the conflicts that emerge when great powers all pursue legitimate interests, the result is likely to be the defining military conflict of the twenty-first century: if not a big war with China, then a series of Cold Warstyle standoffs that stretch out over years and decades.²⁸⁴

He sees a point coming soon when China's new and masculine Navy, conventional and nuclear, bursts out into the Pacific, challenging US positions near the Asian coast and initiating a kind of 'New Cold War.'²⁸⁵ Indeed, Huntington predicted the Chinese military buildup a decade ago, and many now see the 'Red Star Rising,' in the east, to borrow a phrase from expert newsman

²⁸¹ Ibrugger, Lothar, "Missile Defences and Weapons in Space," NATO Parliamentary Assembly, 2004.

²⁸² David, Leonard, "Weapons in Space: Dawn of a New Era," *Space.com*, 17/06/2005.

²⁸³ See: Kaplan, Robert D., How we would Fight China, The Atlantic Monthly, 2005.

²⁸⁴ *Ibid*.

²⁸⁵ Kaplan disparages recent NATO (read Western) lack of unified action in Europe and the Middle East, positing that in the major theatre of 21st Century conflict (the Pacific), the vitality of NATO can and must be revived unswervingly, 'as the indispensable war-fighting instrument.'

Lou Dobbs. Though wracked with problems including overpopulation and growing environmental degradation, China is emerging as the main counter-West military in the world.²⁸⁶ As well, China is already a major proliferating power, leading to the assumption that were it to assume an anti-NATO agenda, it could proliferate nuclear and ICBM technology to Iran, North Korea, Pakistan and others, including terror groups.²⁸⁷

Kaplan advocates 'anxious foresight' as the centerpiece of any prudent US policy towards China.²⁸⁸ Applying this to its blistering economic and military growth means the West must work together to create the conditions that preclude the Chinese weaponizing of space, and therefore must take CNSA's activities very seriously, especially their tendency to take a 'hidden dragon' stance officially, downplaying both Beijing's ability and drive.²⁸⁹

At the same time, Kaplan sees NATO as weak, especially symbolically, and sees a need for it to regain its political significance. He believes naval operations on the sea in the Pacific are, "NATO's and Europe's best chance for a real military future." To this might be added space, as both sea and space are naturally best for NATO to police, instead of American unilateral (read: Western disunited) action:

NATO must become a military alliance that no one doubts is willing to fight and kill at a moment's notice. That was its reputation during the Cold War -- and it was so well regarded by the Soviets that they never tested it. The more NATO expands eastward [Ukraine and Georgia], the more superficial and unwieldy it becomes as a fighting force, and the more questionable becomes its claim that it will fight in defense of any member state... we can't just declare an expansion of a defense alliance because of demonstrations somewhere in support of democracy. Only by making it an agile force that is ready to land on, say, West African beaches at a few days' or hours' notice can we save NATO, and we need to save it... Let me be even clearer about something that policymakers and experts often don't want to be clear about. NATO and an autonomous European defense force cannot both prosper. Only one can -- and we should want it to be the former, so that Europe is a military asset for us, not a liability, as we confront China.²⁹⁰

If China is the most delicate issue, and its military, space and missile programs become more virile every year, diffidence commands space advancement. The geopolitical key to checking it goes beyond NATO rapprochement with itself, to its rapprochement with the West's enemy-

²⁸⁶ See: Kaplan, Robert, "How we would fight China," The Atlantic Monthly, 2005

²⁸⁷ Huntington elaborated further on China: "Despite the current Japanese dominance of the region, the Chinese-based economy of Asia is rapidly emerging as a new epicenter for industry, commerce and finance. This strategic area contains substantial amounts of technology and manufacturing capability (Taiwan), outstanding entrepreneurial, marketing and services acumen (Hong Kong), a fine communications network (Singapore), a tremendous pool of financial capital (all three), and very large endowments of land, resources and labor (mainland China). See: Huntington, 218-238.

²⁸⁸ Kaplan, Robert, "How we would fight China," *The Atlantic Monthly*, 2005

²⁸⁹ See: Oberg, James, Senate Testimony, 27/04/04

²⁹⁰ Kaplan, Robert, "How we would fight China," The Atlantic Monthly, 2005

ally, who is at the same time the other main competitor in space, waiting to be manipulated into cooperation in making order on Earth, through teamwork in the skies: Russia.²⁹¹

Space security depends most on the NATO-Russian strategic relationship, and it is not too late to change the future by openly enlisting Russian sense of pride in space, convincing Moscow to ally with a West both alien and brethren, by providing the best offer monetarily, concessions with symbolism, guarantees of long-term cooperation, and treating it like a great power. It must be reiterated to Putin again and again that a Russo-Chinese coalition can only be a temporary affair, remembering that, according to the head of the Novosibirsk Building Department:

In the markets of Khabarovsk, bargain-hungry Russian *babushkas* even know the Chinese names for the vegetables they buy from Chinese traders. Everything we have comes from China—our dishes, leather goods, even the meat we eat is from China. Siberia is becoming Chinese.²⁹²

Meanwhile, 45% of Moscow births in 2004 were to Muslim parents, and Russia is projected to have a Muslim majority around 2030, 'if it even stays within its present borders.'²⁹³ In addition, what Billington called Russia's 'still extraordinary intellectual resources,' are largely being employed by China, not Russia. To date, Western cooperation with Russia in space itself has been flaccid, mostly because the ISS itself has not amounted to what was expected, while in missile defense, wholly unknown.

One thing forestalling cooperation and fueling Eurasian cooperation is Russian angst over NATO's increasing presence in the former Warsaw Pact countries, violating what was something of a 'gentleman's agreement' between the Soviet Union and NATO. This aggressive posture comes in two forms: the first being possible NATO expansion to places like Ukraine and Georgia, the second being placement of military infrastructure in Russia's historic 'near abroad.' As we have seen, Kaplan sees possible NATO expansion to Kiev and Tiblisi troubling, even prefatory to conflict with Moscow. As for the bases, an American missile base (apart from NATO completely) is being considered for Poland or another location in this sensitive area.

This missile defense 'node' is to be a mirror of the current Ft. Greeley, Alaska site, to protect Europe from Iranian missiles. To the degree Russia sees NATO as a symbol of American hegemony, the missile base falls under the same category as a NATO military

²⁹¹ According to the Center for Non-Proliferation Studies as reported in the International Herald Tribune, Nov. 2001: '[US policy to date] leaves unsolved the key structural problem that contributes to illegal sales: over-capacity in the Russian missile and space industry and the inability or unwillingness of Moscow to do anything about it ... There is simply too much industry [in Russia] chasing too few legitimate dollars, rubles or euros. [Downsizing] and restructuring must be a major part of any initiative that seeks to stop Russian missile firms from selling 'excess production' to those who should not have them.' See: Center for Non-Proliferation Studies, CNS Space: Russian Capabilities, 2006. ²⁹² Matthews, Owen and Nemtsova, Anna, "Fear and Loathing in Siberia," *Newsweek*, 27/03/2006.

²⁹³ Geyer, GeorgieAnn, Much International News Points to a Common Theme, uExpress, 30/3/2006.

structure, and consequently Russia is inflamed by the idea.²⁹⁴ In response to the Polish base, Yuri Baluyevsky, Chief of the Russian General Staff, stated in the Polish daily *Gazeta Wyborcza*:

We are firmly convinced that, if the US project is carried out, it could lead to the deployment near the Russian border of systems which threaten to upset the strategic balance in weapons positioning... it would lead to a new arms race.²⁹⁵

In another interview, Baluyevsky, who is considered to favor 'US-Russian arms reduction,' expressed the feeling that such a location is not directed against Tehran or Pyongyang, but Moscow, as "rockets of other states would never fly over Polish soil."²⁹⁶ In addition, he fears silos could be converted easily into ballistic missile sites, whose range would include all of European Russia.²⁹⁷ A better route, according to Baluyevsky, would be to 'join forces' with Russia, and, "stop squandering US taxpayer's money on a system that will not work, as it is only intended to strike down ballistic missiles, not the WMD's on them, cruise missiles or remote controlled aircraft."²⁹⁸

Speaking to Warsaw on this point, Baluyevsky was confrontational: "Go ahead and build the shield, but think of what later will fall on your heads."²⁹⁹ He did not mean the shield itself falling, but whatever weapon it 'stops.' Bronislaw Komorowski of PO (*Civic Platform*) expressed this same reservation at the base: "Poland must know if this anti-rocket defense system will completely destroy missiles in the air or will its parts, potentially radioactive -- fall on our territory."³⁰⁰

Politically, the leading Polish party, PiS (*Law and Justice*, the party of President Lech Kaczyński), seems in slight favor of the shield (to be operational in 2011). The opposition party, PO, is more speculative, with Donald Tusk calling for increased transparency and consensus on the issue: "the base is aimed not at protecting our country, but the eastern coast of the US"³⁰¹

Rzeczpospolita, a major Polish daily, ran a poll in August 2006 revealing that only 23% of adults in Poland agreed with the shield being placed there.³⁰² These are similar results to a Czech survey, one of the other places being considered. Poland remains the favorite because

²⁹⁴ See: BBC News, "US Considers Polish Missile Base," *BBC Europe*, 17/11/2005.

 ²⁹⁵ Gordon, Michael, "US Seeks Antimissile Shield to block Iran," *The New York Times*, 22/06/2006.
 ²⁹⁶ See: Litovkin, Viktor, "Russian General Criticizes American National Missile Defense Program," *RIA Navosti*, 28/07/2006. 17/09/06.

²⁹⁷ Being that Russia possesses enough weaponry to nuke every capital on Earth over 100 times, this proximity and its symbolic and real significance, is likely the real fear, just like it was during the Cold War. Nearness of artillery, not the possibility of actually stopping a serious Russian attack (which would quickly overcome the missile shield) is the only legitimate reason for the Kremlin's trepidation. ²⁹⁸ *Ibid*

 ²⁹⁹ Gordon, Michael, "US Seeks Antimissile Shield to block Iran," *The New York Times*, 22/06/2006
 ³⁰⁰ *Ibid*.

³⁰¹ The Warsaw Voice, "Tusk Urges Debate on Missile Shield," 20/09/06

³⁰²Rzeczpospolita, "Most Poles Opposed to US Missile Shield," Angus-Reid Global Monitor, 24/09/2006

bilateral relations have been strong in Iraq and the Polish Air Force is now being beefed up with 48 American F-16 Flying Falcons, 'the most advanced fighter plane in NATO,' replacing the current Soviet made MiG-29 Fulcrum.³⁰³ As for NATO itself, its strategists do not yet see the necessity or the effectiveness of anti-missile shielding for the territories of the alliance, claiming it may do more harm than good.³⁰⁴

But it is Russian antagonism over this possibility that is even less promising. The main reason for rapprochement with Russia in space and missile defense is to help avoid a Eurasian alliance, such as the Russian-Muslim-Chinese triad feared by Zbigniew Brzeziński, or another speculative configuration.³⁰⁵ If Kaplan is right about China and a new Cold War, it means Russia will have to choose: Euro-America or China. Billington notes that Russians themselves are torn, some preferring the 'best of Asia over the worst of Europe,' while others, "believe that they, like the United States, are part of European civilization… with some beginning to sense that they may have something to give to, as well as gain from, that linkage."³⁰⁶

Whether Europe is open to this kind of offer, being spiritual and cultural more than economic, is uncertain. But it should be, as a Russia losing friends in the West thanks to its authoritarian drift will continue to find that China *is* open to it, even as China purposefully embeds itself further into Siberia, which it now obviously considers a 'sphere in which to define influence.' The effect of this may be tightening relations between the two and real integration, or an eventual national flexing of Russian power against China, perhaps to decide the fate of Siberia itself, neither of which would be good for freedom in the world or global stability. Why wait for an emasculated European Russia, stripped of Siberia and denuded of Great Russians, to come knocking at Europe's door? By that time its social problems would be a major liability, while its weapons as real as ever. Better to take Russia's hand and contain China and Eurasianism now, in the spirit of diffidence.

If the Polish question is a crux, Ukraine is as well. Kiev has space power (mostly leftover Soviet infrastructure) and seeks cooperation (money) with both Russia and the West. Perhaps a

³⁰³ Lockheed Martin, "LM Rolls Out Poland F-16, NATO's Most Advanced Fighter," 15/09/2006 ³⁰⁴ According to NATO's last assessment (2004): "Your Rapporteur does not believe that the threat of ballistic missiles, at present as well as in the foreseeable future, is such to justify the deployment of multilayered, Alliance-wide ballistic missile defences of the type that the United States government is planning to deploy... Your Rapporteur is not alone in considering this [the US shield's effectiveness] questionable. In May 2004, a report sponsored by the Union of Concerned Scientists, indicated that the system being deployed has no demonstrated capability to defend against a real attack, and there is no basis for knowing the system being deployed will have such capability. Finally, your Rapporteur would like to reiterate concerns about the danger of deploying space weapons... we are concerned that plans to station strike weapons in outer space, as well as the possible deployment of anti-satellite weapons, both space- and ground-based, could generate an arms race and increase threats to important commercial and military assets in space." See: Ibrugger, Lothar, *Missile Defences and Weapons in Space*, NATO Parliamentary Assembly, 2004.

 ³⁰⁵ Brzezinski, Zbigniew, *The Geostrategic Triad*, Center for Strategic & International Studies, 2000.
 ³⁰⁶ Billington, pp. 95.

Polish-Ukrainian joint voice can be the mediator in the swaying of larger overseers? If Poland and Ukraine can work together on things like missile defense and desire for space cooperation, both as outposts of their respective civilizations and a historically salient entity, one can see the building of a suspension bridge between the West and East. Ukraine is vital for Russia, and yet coalescence between Western and Eastern Christendom is also vital.

In 1054, Christendom split. It was so long ago that people now forget that in the best of times, these two worlds would be as one. The decrepit condition of morale that Christendom is left in today is a result of its century long civil war (1914-1991). The current lack of mutual commitment to anything in space operations and missile defense, apart from ISS, mirrors today's political trend.

B. Proliferation, Terrorism and Failed States

The survey of space powers in Part I found them to be the USA, Europe, Russia, China, Japan and India, in that order. They are the only powers (plus Israel) with indigenous launch capability. No significant ones were located within the Latin American, African or Islamic civilizations, so a link concerning space and the re-tribalizing 3rd World may seem irrelevant. But, this is not exactly the case. Despite the increased tribalism and factionalism, terrorism (narco, political, fundamentalist), organized crime, overpopulation and environmental degradation, some of the stronger states in these regions are advancing in ability on the high frontier:

In Latin America, Brazil is asserting itself as aeronautic leader of the region and almost successfully launched in 2003, but an explosion at its new spaceport killed 21 technicians and scientists, setting the program back. Brazil and Argentina maintain their own satellites, while Chile and Peru have official programs underway. Mexico and Venezuela meanwhile, are in the beginning stages of building theirs.³⁰⁷

In Africa, Nigeria has a satellite and a space program amid crippling poverty, and South Africa, which possessed and then voluntarily gave up ballistic missiles and nuclear weapons under the Apartheid government, somewhat embarrassed today about being upstaged by Nigeria, is rapidly developing a rival program.³⁰⁸

In the Islamic World, Iran and Pakistan have significant activity including nuclear capability in at least the latter case, medium range delivery power, and are operating satellites. Indonesia is now growing a program as well.

Israel, like usual, is exceptional. Not only does it have its own missile defense shield (Arrow), but through the Israeli Space Agency, can launch satellites independently of outside help.³⁰⁹ One can imagine a 'mini-Space Race' between Israel and its neighbors, to accompany their 'mini-Arms Race.' Ukraine is also an outlier. Like Israel it has independent launch capability, but unlike Jerusalem, Kiev has only performed launches for other nations' equipment, technically keeping it out of the 'space club' (please see Appendix-5 for a full list and ranking).

In East Asia, South Korea and Taiwan have satellites, and while North Korea does not, it has proto-launch capability and is actively testing an ICBM. It dubiously claimed to have

³⁰⁷ Reuters, "Mexican Lawmakers Vote to Start Space Agency," *MSNBC News*, 27/04/2006.

³⁰⁸ See: Campbell, Keith, "Last in Space," *Engineering News*, 05/2005

³⁰⁹ Israeli Ministry of Science, Culture and Sport, *Israel Space Agency*, ISA Online, 2006.

'launched a satellite,' in 1998.³¹⁰ Thailand and Malaysia have space programs with various growing capabilities as well.³¹¹

The anti-missile shield that so angers Russia has its origin not to protect against Cold-War style M.A.D. nuclear attack, but missiles from these lesser powers armed through weapons proliferation.³¹² NATO estimates 40 states now possess ballistic missiles, and while twenty-nine of these retain only short-range Scud missiles of Soviet design (the kind Iraq fired on Tel-Aviv during Gulf War I), Iran has an estimated 700 advanced Scuds proliferated to them by China.³¹³ It also has a Shahab medium range missile capable of hitting Israel, while Pakistan has Chinese made missiles, and has recently finished building its own missile factory. Therefore, Pakistan can proliferate its own production to terrorist groups operating anywhere in the Middle East.³¹⁴

North Korea, also a proliferating small power, has something better. Besides hundreds of medium range No-Dong missiles (an improved Scud) capable of penetrating Japanese airspace (and the US base on Okinawa), recently Kim Jong Il unveiled another: 'Taepodong-2,' a long range ICBM. A 2006 test exploded and failed, but only at the point of maximum tension, a correctable problem.³¹⁵ NATO currently believes that North Korea and Iran will have advanced ICBM's capable of hitting North America (or Europe) within ten years.³¹⁶ As far as cruise missiles go, NATO finds them far less widely proliferated, but potentially devastating³¹⁷

NATO and the West not only have to deal with hi-tech powers then, but these actors as well, each seeking force projection partly through employing a space presence. While these countries are not advanced enough to place 'star-wars' weapons in orbit, they may try to disable satellites by sending ballistic missiles there, and many are in fact possessors of WMDs and the technology to deliver them. We see the same technologies at work once again. At the same time, another growing problem is of 3rd World chaos, exemplified by 'failed states' unable to keep jurisdiction over their territories.

³¹⁰ Since this satellite has never been detected by sources outside North Korea, either visually or by radar, it either decayed and burned up in its first five minutes in orbit, or never existed. See: McIntyre, Jamie, US Skeptical of North Korea's Satellite Launch Claim, CNN News, 04/09/1998.

³¹¹ Tamm, David J., *The New Space Race: The Space Powers*, City of Hudson Beach, Florida, 2006. ³¹² M.A.D. stands for 'Mutually Assured Destruction' the concept that should an all out war start, both the first to fire and the last would be irradiated to such an extent, the very beginning of such an exchange would be pointless.

³¹³ Ibrugger, Lothar, *Missile Defences and Weapons in Space*, NATO Parliamentary Assembly, 2004. ³¹⁴ *Ibid*.

³¹⁵ See: Kaplan Robert D., "When North Korea Falls," The Atlantic Monthly, 2006

³¹⁶ Ibrugger, Lothar, *Missile Defences and Weapons in Space*, NATO Parliamentary Assembly, 2004. ³¹⁷ *Ibid.* "Cruise missiles ensure more precise delivery due to their stable aerodynamic flight and the possibility of being guided by Global Positioning Systems (GPS). They are also cheaper and easier to procure, store and maintain. In operational terms, cruise missiles fit more closely the asymmetric warfare requirements of less powerful states."

A state 'fails' when "the apparatus of government simply falls into disuse, leaving people unprotected against criminals, marauders and terrorists."³¹⁸ This place was described most soundly by Robert Kaplan, through his invocation of a concept called, the *Last Map*:

Imagine cartography in three dimensions, as if in a hologram. In this hologram would be the overlapping sediments of group and other identities atop the merely two-dimensional color markings of city-states and the remaining nations, themselves confused in places by shadowy tentacles, hovering overhead, indicating the power of drug cartels, mafias, and private security agencies. Instead of borders, there would be moving "centers" of power, as in the Middle Ages. Many of these layers would be in motion. Replacing fixed and abrupt lines on a flat space would be a shifting pattern of buffer entities, like the Kurdish and Azeri buffer entities between Turkey and Iran, the Turkic Uighur buffer entity between Central Asia and Inner China (itself distinct from coastal China), and the Latino buffer entity replacing a precise US-Mexican border. To this protean cartographic hologram one must add other factors, such as migrations of populations, explosions of birth rates, vectors of disease. Henceforward, the map of the world will never be static. This future map--in a sense, the '*Last Map*'--will be an ever-mutating representation of chaos.³¹⁹

The fluctuating centers of power on the 'Last Map' are the antithesis of the Westphalian national-state, and statism in general. The disorder within them encourages non-state entities like Osama bin-Laden's al-Qaeda, Hamas and Hezbollah to operate, while making enforcement of anything, including a legal order, extremely problematic. Failed states allow hideouts to terrorists and make easy proliferation of WMDs, as Huntington, Brzezinski and Kaplan all warned in the 1990s.³²⁰

One part of John Lennon's message, 'Imagine there's no countries,' has therefore caught on very well. Europeans bask in the fictional haze of a 'post-state' consciousness, while in Africa, the Islamic World, Latin America and Asia, because many 'countries' are simply inert, people are left trying to imagine the disappearance of something that is not there. Other parts of the message have not caught on as well. 'Imagine no possessions,' still draws a laugh in Europe and America (as does, unfortunately, 'imagine no possessions based on oil dependency'), while the Islamic World riots at Lennon imagining, '...no religion, too.' The dichotomy between these insures more terrorism on the horizon, not less. Consequently, all the world 'round, states and

³¹⁸ Scruton, pp. 135.

³¹⁹ Kaplan, Robert, "The Coming Anarchy," The Atlantic Monthly, 1993.

³²⁰ Civilizational solidarity within the Orthodox world was highlighted by the ceremonial Serbian 'gift' to Russian scientists of the parts leftover from the American F-117 Stealth Fighter shot down in 1999 over Kosovo. However, with Romanian and especially Bulgarian ascension into the EU, joining Greece there, the future of Orthodox civilization remains uncertain even within itself.

non-state actors continue to 'increase the range, reliability and accuracy of their [missile] platforms.³²¹

Even if there were full anti-proliferation measures, states like North Korea and Pakistan would still have indigenous production going on. The weapons are not going away and stateless actors are becoming more dangerous. The only answer is overall control of the atmospheric theater in which everyone must operate. It is in the best interest of the West to reestablish and reinforce this circumstance now; before the world's increasing chaos (and the expensive military requirements on the ground that follow each new theatre of intervention) breaks the back of the Western taxpayer.

³²¹ ESA / Instituto Affari Internazionali, Space and Security Policy in Europe, Rome, 2003.

CHAPTER III CONCLUSION

Placed before us are the purely competitive and geopolitical reasons Europe must resolve to lead the charge in pursuing *Tsiolkovsky's Imperative* to explore and settle space. Will the European philosophy be redirected because of diffidence? The EU is called on to identify and mitigate security threats to its citizens, including ICBMs and space weapons, under mandate provided by the CFSP through the EDSP.³²² Up until now, however, the EU has not addressed space much to this end. France is the only EU member with 'Military-Space' as a budget line by itself, because it operates the Helios line of recon satellites.³²³

As a whole, the EU is still deciding whether to go 'beyond a strategic and political vision of military space, [to actually] integrating satellite systems into larger operational and tactical purposes.³²⁴ The Galileo Positioning System satellite array and GMES (a powerful Earth observation system) exist, while on paper, sealed within an ivory tower in Brussels, the EU's *White Paper* states, "Space has a security dimension and security has a space dimension."³²⁵ In appropriations, the 7th Research Framework Programme (2007-2013), lists 'Space and Security' independently for the first time, allocating just under \in 4 billion to it, which is a five-fold increase from the more generalized distribution in RFP-6.³²⁶ But this is still not enough.

Simply lacerating officials from the astonishing number of diverse agencies and governmental institutions in Europe would be nice, but it would assume they are guilty of knowing what is at stake and either ignoring or actively working against it, which is probably not the case. European politicians have no idea how important a gain it is, fulfilling in the only realistic way Europe's hopes for peace, to conquer space. Something like 'the intercivilizational need for Europe to invest more money in technology development, in order to bump up the dates for greater orbital activity, a Moon landing, moon-base and finally Mars settlement, pursuant to the destiny of humanity as masters of their entire star system, and taking from this presence a geostrategic advantage to enforce the peace today,' is not the first thing on the mind of its bureaucrats and politicians. This chapter has attempted to show why it should be.

Tsiolkovsky's Imperative, beyond its existential and socially unifying aspects, facilitates soft-dominance of the skies through the building there of its inherent infrastructure. For instance, the Moon-Mars initiative is a goal for space that does not constitute military expansion, but the technological support systems used in the missions are an expansion of

 $^{^{322}}$ CFSP is the Common Foreign and Security Policy that acts as the 2nd Pillar of the EU, while the ESDP, or European Security and Defense Policy, is its major component.

³²³ Bochinger, Steve, "Will Europe Pursue Military Space?" *Defense News*, 04/04/2005. ³²⁴ *Ibid*.

³²⁵ European Commission, *White Paper on Space*, 2004.

³²⁶ European Commission, Space Research Highlighted in Next Framework Programme, 02/03/2004.

influence regardless. It satisfies in a major way the diffidence protocol, by giving NATO not only the higher ground, but the public image that in Kaplan's mind is most important for deterrence: that it is an agency willing and able to fight and kill at a moment's notice. Does this kind of space diffidence have public support? In speaking for himself, NASA Administrator Griffin reveals what Americans really feel about it:

It is important to me [for the US to have hegemony in space] because it is important that humans who carry, I'll characterize them as *Western values*, are there. I don't know that it's a concern that others get there first... what does concern me is that where other people go, the United States must also be.³²⁷

Thus, the Western diffidence perspective can be summed up as a responsibility for policing the skies, just as Western navies police the high seas, which 'makes the trend of globalization possible,' through the protection of trade.³²⁸ Soft-dominance of the skies through *Tsiolkovsky's Imperative* is a most appropriate way to set up the paradigm to effectively do this. It can all be done within the existing security structures of NATO, the EU and US, which today face an international framework already existing for prohibition of weaponry, but one that is vague enough, or weak enough, to allow for the militarization of space to continue apace.

This chapter has also suggested that the new Age of Aquarius will be one of competition, some soft, such as nation and corporation competing in the space-launch market, and some hard. As today it remains uncertain where some of the actors will fall on the cooperation / competition spectrum, it has suggested that all decisions regarding space activity by the EU and US should first consider the situation from the point of view of a Sino-Western conflict, and how it helps to remove Russia as a factor of uncertainty, bringing it into the Western fold by forging with it, 'the ties that bind.' If the West hopes to reform other civilizations, it must be through example, using both the carrot and the stick- the more powerful and cooperative the actors in the world who value peace and stability are, the more they can influence (or force) the other parts to imitate their example.

The ESA is dedicated only to civilian purposes, but the EU is not. It has a responsibility to work with the ESA to create a common European position and streamline European efforts, as Huntington's paradigm writ cosmic means taking the concept seriously, to create a maximum of security for its citizens in a world that is multi-polar, re-tribalized, terrorized, and requiring air and space dominance by the USA and the EU, the binary stars of Western Civilization, which together as NATO, shine as one.

³²⁷ Griffin, Michael, "Extending the Human Presence into the Solar System," The Planetary Society, 2004

³²⁸ Kaplan, Robert D., "How we would Fight China," The Atlantic Monthly, 06/2005

"And who my friend, can scale the heavens?"

-The Epic of Gilgamesh

CHAPTER IV INITIATING THE IMPERATIVE

That life should be respected, as the old religion and natural law both used to tell us, is so basic and yet so fundamentally untaught where it makes the most difference, that the patterns of society we witness everyday are rendered.

If the elixir of Western society is the understanding that the world is knowable once again, that nature as a unity can be mastered by mankind through its individuals, connecting each to a cosmic order of progress and hope, the consciousness must begin early and sustain itself into adulthood. It must become part of 'normal life,' both psychologically and scientifically. Work goes on, day-to-day living goes on, but in the background, there out the window, the great project is going on, manifesting the experience of personal participation in a germinating human destiny.

Reinforced presentation of the true framework by schools, from beginning to end, sparks into the mind that there indeed *is* one, while consistent reminders of it in three dimensions, all around, all the time, enforces its value over and again. Psychologically, it allows the mind and the organism it controls to reclaim its religious dignity, while promoting the ascription of a similar dignity onto like beings, recognized as what they are- that rarest form- matter that has been born alive and is aware. While this is not 'taught' to someone as much as 'discovered' by them, what the cosmological framework does is create the conditions for this self-discovery.

This concluding chapter provides suggestions and conclusions drawn out of analysis of the evidence presented within those preceding it. It seeks to define how to go about initiating *Tsiolkovsky's Imperative* realistically, based on current human behaviors, cultural evolution, natural law and malleability of the psyche.

4.1 THE LOCAL LEVEL: SCHOLASTIC REFORM

Space Education at the Primary School Level

It is in primary school where children begin forming recognition of the world around them beyond that of base feeding and playtime at home. The essential starting point to inventing a future which supersedes the one in which we are currently headed as a civilization, is the planting of its vision into children. This is the starting point to a popular cosmology that wrings a coherent political dividend.

Re-harnessing the power of the primary school is possible. That the schools are used for such dismal result today, with such success, is a twisted example of the power they wield. Simple cosmology in the form of 'space-studies,' is both extremely interesting and easily adaptive to diverse groups of young people, to form the basis wherefrom all other subjects emerge.³²⁹ This means a complete refocusing of the curriculum, with space-studies at the very center. The point is getting students used to it as a frame of reference, reinforced throughout each grade so that by secondary school, it is deeply planted as an artifact in the conscious mind.

In some Western schools, art presenters come in once a week to elementary classes with posters and works by a famous 'old master.' Similarly, to toughen the coating of the perspective, NASA and ESA representatives may visit schools in every town and city in the same way, linking what is happening right then with what is taught in class. Propaganda certainly, but this is how visions are installed, and if the vision is based on the reality principle, it is worth it, like teaching kids to read.

An integral part of this vitalized core education is the planetarium. The number of planetariums in the US (around 1,500) and Europe (nearly 750) is large by world standards, but their number must be increased, and applied as the place of monthly visitation for each school level. They are relatively inexpensive and highly adaptable learning tools, able to present appropriate material to each new group. By the 8th grade, students would have visited over fifty times. In Europe, planetariums and the excursions to them could be funded through EU cohesion funds, as they present the history of pan-European science and invention from classical times until the present day, reflecting a much-desired internationalism. In addition to school, the planetariums may be made available after-hours, showing things oriented to the family or certain interest groups, thus making a double impact as an alternative to an evening of TV or 'nothing' (See Appendix-8).

³²⁹ For example math is how things are quantified in the visible world. The diversity of languages shows how beings evolved different ways to say the same thing. The arts are how sentient beings symbolically interpret, beautify and qualify the visible world through painting, sculpture, music, architecture and so on.

The planetarium may be an outstanding factor of implementation, but it is the very assessment of the value of space-studies, and the realization that it is almost non-existent in the schools, that should be one of the most important discussions in academia. The values of culture and history studies are recognized, as they address what Allan Bloom called 'the permanent concerns of mankind'; but this continuum is exactly what space studies becomes the capstone of. Past history, modern culture and thought, space studies and the future- these are a cohesive whole. They form three varieties of a single education, in, *the reality of the human situation*. They empower the pupil to see the world around them in all four dimensions. That is why the mass popularization of the history-culture-space studies triad, and its embedding in school curricula, is the most vital and positive way to recapture the imaginative force so sterilized by the incessant feeding inputs of postmodern life, which as practiced today, is at the core of indoctrination into the culture of death.

The most likely route to successful implementation of this change in schools throughout the West is its exemplary application on a smaller scale- the national or provincial. Poland, Hungary or perhaps another Central European state are good candidates, good incubators, due to their manageability and the lingering freedom of thought, independence and action necessary to make it happen. In Poland, for example, one can imagine at least the *possibility* of upgrading the entire frame of reference in the nation's schools. It is important to remember that while the media runs stories exposing the debates and fighting about national education, as well as the growing problems at schools themselves, real change is still possible because of the *ancien* threads and mystical chords that continue to run through the people who are duty bound to yet have their say. Does one imagine such a possibility in France?

Space Education at the Secondary and University Levels

The same students concerned with and consumed by popular culture and anti-education are still, in the end, human beings. They respond very well time and again to things that are really important, as is the consensus among dedicated teachers. For such a teacher, it is a great pleasure to see that extra spark in students, which indicates an important concept has hit home. The tragedy of modern education is that students really do want to learn about reality and their place within it, even if they themselves do not know or vehemently deny it, in obedience to the tenants of the culture surrounding them. Teaching to this self-interest within a psychological, sociological, artistic, civic, historical, geographical, biological, chemical and physical context, done through the cosmological frame, far from oppressing students, turns many millions of disinterested ones into participants working for wisdom and society, instead of against them.³³⁰

If primary schools plant the seeds of the cosmic framework, secondary schools cultivate them into coherent paths, turning life-interests into jobs and careers. Retooling American and European secondary schools should be done with the goal in mind of transforming the interest of a given student into a functional future, be it scientific, humanistic, professional or industrial. A powerful precedent for the validity and possibility of positive secondary school reform comes from the aftermath of the 1957 Sputnik launch, when schools in the United States and the Soviet Bloc refocused curriculum on science, mathematics and industry. In fact, the National Defense Education Act of 1958 installed 1,200 American high schools with planetariums, some of which still exist, if the reason for their installation is largely forgotten.³³¹

Local observatory visits should become part of the curriculum now, nocturnal visits providing a chance to see cosmic reality firsthand. Continuing monthly planetarium visits in this stage become more specialized to specific themes, fulfilling a role not only as propaganda tool for citizenship and learning, but as a 'career finder,' revealing current fields needed in the public service and private sector, which steadily becomes a kind of public service in itself. The point is to turn the vague feeling many have of wanting to 'help' but not knowing how, into realistic job possibilities (see Appendix-8 for more).³³²

³³⁰ Education has often been successfully used for state purposes, for example in 19th Century nation building by Prussia, Russia and Austria. In the case of Russianizing Poles, it was used to limit Polish separate consciousness. The Russians knew the power of socialization through education. Anyone with communist experience knows this as well, from the early days of the Soviet Union to China and North Korea today. But if education really is so powerful, there within lies the greatest hope. It can be used for good, but reform, into a traditional civic and science mode, is not going to happen without some force behind it powerful enough to blast the heavy foundations of the establishment. In this example, the electric charge of 1792 and 1968 reborn in the 21st Century takes the form of a reaction against the radicalization of ideas happening in those years. ³³¹ See: Vega, Alejandro, "Space Race and the Planetarium," *Planetarios*, 2006. ³³² An innovative program called Znek was begun in Poland by Marek Sadowski, a graduate of ISS

⁽International Space University) in Strasbourg. See: Sadowski, Marek, Znek, 2004.

What motivates high achieving students to pursue a career in certain hard sciences? Science, mathematics and engineering graduates have dropped in the US, even as population has gone up. The knowledge that your studies will bring benefit to you (i.e. job security and health insurance) and society (participation in *Tsiolkovsky's Imperative*, ability to support a family) reverses this trend, giving high school students something to shoot for besides a basketball hoop. The reason students shy away form scholasticism today is that they see it as pointless, because it is largely pointless in the world they inhabit.³³³ Importantly, starting from the beginning, the overhauled curriculum, official national space agency involvement, and planetarium focus, is an educational equalizer.

At the university level, 'majors' in the US and chosen colleges of study in Europe remain specialized as is best, but at the same time advertise how they fit into the cosmic framework as a main 'selling point,' luring students. This simple official orientation integrates each one in a noticeable way, at the same time making it accountable and responsible for fulfilling the niche.

This is the main task at the local level, carried out by local figures. The task at the national and civilizational levels, meanwhile, is to install push and pull factors to draw and nudge the public towards an understanding of the vision. But can the public be informed and persuaded that the further exploration and development of space is something that should be made one of the central aspects of public life? Can the power of media, like nuclear power or the school system, be used for good as well as bad?

³³³ As for how these students look at the future, Jim Dator finds that like Engdahl's 'Earth-only dystopianism,' the outlook is largely negative: "Many of us hold several, often contradictory, images of the future without realizing that we do so. For example, in my experience, when asked to describe a day in their life 30 years from the present, almost all young [collage students] Americans paint an idyllic picture of themselves in a wholesome nuclear family. Yet, when asked to describe their community 30 years hence, the picture is not so pleasant. Crime is rampant, terrorists rage, drugs are ruining children, the environment is polluted, the weather is humid, and the seas are rising. Sadly, not much within their formal education either encourages students to believe that they can or should influence the future except in the very narrowest personal sense, or teaches them how to evaluate their fears about the future and collectively resolve them." See: Dator, Jim, "Campus Futures," *APPA*, April/May, 2006.

4.2 THE CIVILIZATIONAL LEVEL: MEDIA AND PUBLICITY

There was a time during the 1st Space Race that the public imagination was fired by powerful visions of this kind. The Cold War, at the same time, helped prolong the ideological and abstract notion of 'good versus evil' or 'us versus them,' a twisted framework in which to work, but a framework nonetheless. In reviewing how NASA kept up the image of itself as 'a superhuman agency,' Jim Dator of the University of Hawaii Futures Studies faculty considers the prevailing research showing how NASA has used various methods to build broad public support for its space activities:

1) *Nationalism* was tapped during the late 1950s and 1960s. It referenced direct competition with the Soviet Union, appealing to American patriotism, and emphasized that the space program should be supported because it is good for America as a nation: its prestige, pride, military strength, economic strength and international standing.³³⁴

2) *Romanticism* was used during the 1960s through the Moon landings, with an emphasis on the excitement and adventure that satisfies the human need to explore and find emotional rewards in the satisfaction of that curiosity. Present in the Romantic appeal was the heroic component, whereby great deeds and obstacles are overcome to reach an important goal.³³⁵ Later, former NASA engineer Jeff Krukin recalled that in these times, "regular guys were doing extraordinary things," while in more recent days; people have taken to relegating NASA and the entirety of cosmic space into a 'government program,' doing it a major disservice.³³⁶

3) *Pragmatism* was employed as an image by NASA during the 1970s after the luster of the Moon landings faded, and attempted to show how the space program benefits all citizens in a practical way. This image emphasized that space development brings tangible material gains like technological advance and knowledge, business outreach and economic stimulus.³³⁷ It also, however, asks the public to consider the exploration of space as an endeavor tantamount to acquiring tang and velcro, which is not very inspiring.

4) *Cooperative Internationalism* on the other hand, was used by Japan in the 1990s, that doldrums decade for the Western and Russian space programs. The Japanese vision called for 'the creation of new cultures by exploring the unknown universe... expansion of the sphere of human activities and prolonging the existence of mankind... improving international

³³⁴ Dator, Jim, "Thinking About Space Futures, Then, Now and Tomorrow," ISU Masters Lecture, 2000

³³⁵ Byrnes, Mark E., Politics and Space: Image Making by NASA, Praeger Publishing, 1994

³³⁶ Krukin, Jeff, "The Human-Space Connection," 05/10/06

³³⁷ Byrnes, Mark E., Politics and Space: Image Making by NASA, Praeger Publishing, 1994

understanding and trust... stimulating the imagination and curiosity of the next generation to support the advancement of society.³³⁸

As for the ESA, it remains firmly grounded with a non-national, barely romantic, somewhat pragmatic, mostly cooperative international outlook. Unfortunately, this combination has proved singularly unsatisfying for Europeans.

³³⁸ Ministry of Education, Culture, Sports, Science and Technology of Japan, *Fundamental Policy of Japan's Space Activities*, 1996. As quoted in Dator.

A. Public Vision Today

In the United States, NASA research has found that:

- = People over 35 hold favorable opinions of NASA overall, due in large part to favorable memories of the Apollo program (2004)
-)= People under 35 hold neutral or unfavorable opinions of NASA (2004)
-)= All people have a more positive opinion of manned missions to Mars than they do of NASA itself.
-)= NASA's image as being "creative" needs improvement. When compared to Rolls Royce and Apple Computer, it lags behind. It is slightly ahead of Sears in this area
- = Respondents with a higher level of knowledge about NASA have a more favorable opinion of it
-)= Personally engaging and somewhat entertaining experiences are necessary to convey the news of scientific discoveries. Among the most effective media for this are television and the Internet. The most effective ways for NASA to build a stronger relationship with the public involve (a) providing personally relevant services, (b) increasing the sense of intimacy in the relationship, and (c) employing two-way interaction methods³³⁹

NASA spokesmen have suggested that this data shows the agency is effective in communicating the reasons for space exploration, but has not done as well in relating what that translates to and how it is meeting the expectations of the general public:

Articulating NASA's accomplishments in terms of its customers' emotion-centered value expectations would produce more effective communication... The celebrated past of the US space program has produced an unintended detrimental by-product: It has distanced NASA from its ultimate customers- everyday people.³⁴⁰

Interestingly, it also found a great deal of "latent good will, even enthusiasm, for the space program," before legislating a solution: "This potential support can be made more kinetic by programs that effectively bring people closer, and more personally so, to the space program."³⁴¹

If NASA's public relations are disheartening, ESA's are repugnant. Though not a scientific measure (as these are hard to come by for ESA, a strange phenomenon given EU's penchant for polling), it seems through informal observation that a very, very large number of Europeans, even college-educated ones, not only do not know what the ESA does, but even that it is.³⁴² Some have a vague notion of a 'European NASA,' but the link between this and any further knowledge or opinion is separated by what can only be called bewilderment.³⁴³ "It just doesn't register," in the words of a British graduate.³⁴⁴ A similar Polish graduate relates, "I am

³³⁹NASA: We Mean Business, Texas Space Grant Consortium, 2006

³⁴⁰ Ibid

³⁴¹ Ibid

³⁴² Statement from Antonowicz, Agata, Polish university graduate, 09/09/06

³⁴³ Observation of Markowski, Marta, Canadian university graduate, 01/09/06

³⁴⁴ Statement from Bylinski, Helen, British university graduate, 15/09/06

not entirely space-ignorant, and I have never heard of it."³⁴⁵ This distinguished lack of information is not for lack of anything relevant being done by ESA, however. Recent successes include Mars Express, Cassini-Huygens and the Hubble Space Telescope (of which it is a 15% contributor and joint partner with NASA). Yet, one must look a long time to find any sort of publicity about new information from these successes, or that they have even taken place.³⁴⁶

Some observers have accused ESA scientists of 'not wanting to leave their ivory towers,' but is doing so their job? ESA needs more than scientists- it needs marketers to make portfolios of its accomplishments, highly visible to the public, and it needs EC and EU support in doing so. What does this kind of publicity cost? The Hubble Space Telescope devotes 1% of its operating time/budget to producing unscientific, beautiful images of the cosmos, for public relations only. Accordingly, that little stipulation has helped make HST a very well known piece of scientific equipment, a household word.³⁴⁷ At the same time, Europe owns the most powerful astronomical instrument in the world, namely, the Very Large Telescope (VLT) in Chile. This instrument has no public image at all, like the agency operating it.³⁴⁸

The unfortunate truth about space and astronomy related news today is that it is not presented as important enough to attune to. Recent breakthroughs in deep space exploration amaze with their lack of publicity. How many people in the general public know that, following Polish astronomer Aleksander Wolszczan's discovery of the first planet orbiting another star in 1992, over 200 extrasolar planetary systems have been found? It may not be proof that 'we are not alone,' but it is proof that the universe is replete with the orbs that life grows on.³⁴⁹

The results of a comprehensive two-decade study by the US Pew Research Center about public interest in news revealed that of the 1,100 stories 'most closely followed' from 1986-2004, few had science or technology as their subject. Among those that did, by far the highest rated stories were negative: the destruction of the Space Shuttle Challenger in 1986 and the destruction of the Space Shuttle Columbia in 2003.³⁵⁰ Even in just the stories about science and technology, only one story in the top forty followed by the public in the timeframe 2000-2004 concerned space: again the Columbia disaster.³⁵¹

In Europe (EU-15), the majority (84%) indicated they had not attended a science or technology related museum in 2003. A third of these indicated the reason was they 'don't

 ³⁴⁵ Statement from Kolenda, Karolina, Polish university graduate (and Star Trek fan), 15/09/06
 ³⁴⁶ See: Lorenzan, Dirk, "Europe in Space: Taking off without the Public?" Wissenschafts-

Pressekonferenz, 2004.

³⁴⁷ Ibid

³⁴⁸*Ibid*

³⁴⁹ See: Kulpa, Zenon, "Biography: Aleksander Wolszczan," URANOS Group, 2006.

³⁵⁰ Pew Research Center for the People and the Press, *Public Attentiveness to News Stories*, 2005.

³⁵¹ National Science Foundation, Science/Technology Stories that Most Interested the Public, 2006.

understand' science and technology, while another third 'don't care' about it.³⁵² In the American survey, 14% felt 'very informed' about space news in 2004.³⁵³ Among those who answered they had a 'high level of education' in science and mathematics, the average person placed their knowledge at 42 on a 0-100 scale.³⁵⁴ For perspective, space exploration came in second worst, above only 'farming and agriculture.'

These sad figures (considering 2007 is the fiftieth anniversary of the Space Age) indicate a public disconnected from space reality. But they reflect a situation that, according to author Sylvia Engdahl, is actually very normal. The difference today is that the public at large is needed to fund exploration and the pioneering spirit, and this was *never* the case before. Engdahl, working out these problems since before the time of Sputnik, reveals why despite more people being alive at one time than ever before, it takes more than just pioneers and settlers now to push into the new frontier:

It was always difficult for explorers to get money for ships, but each had to talk only one backer into it. Columbus, according to legend, convinced Queen Isabella. Settlers could always move into new lands with their personal resources alone. [Though] explorers and settlers were laughed at by people who didn't share their views, it didn't matter. They went anyway. But with space 'humanization,' we cannot rely on the drive to exploration because, to the population at large, it is not a top priority. It never was, in any society. If the people of Columbus's time had had to vote to tax themselves in order to send his ships, he wouldn't have gone. Most felt he would fall off the edge of the world. Among the educated minority who knew better, there was a better use for their money elsewhere. As in our time, there were some myths, traveler's tales about riches to be found in new lands, but rational, hardheaded skepticism ruled the majority.³⁵⁵

So, how does one get the public at large to embrace such a vision?

³⁵² European Commission: Special Eurobarometer, *Europeans, Science and Technology*, 2005.

³⁵³ National Science Foundation, "Science/Technology Stories that Most Interested the Public,"2006

 ³⁵⁴ Defined as having passed 9 or more high school or higher education courses in math or sciences
 ³⁵⁵ See: Engdahl, Sylvia, "Space and Human Survival," 2003.

¹¹⁷ *117*

B. Marketing Tsiolkovsky's Imperative

Interesting evidence showing the negative effects of inadequate publicity comes from the differing set of results obtained about American interest in NASA's activities by separate polling agencies, one being *USA Today / CNN*, the other being the *Coalition for Space Exploration*.³⁵⁶ Obviously one is more accurately describing the public opinion, but which? Facing the question, 'Should the United States be setting aside money to land a human on Mars,' in the USA Today / CNN poll, only 40% agreed. However, when faced with the question asking the same thing but going more into detail, something else was revealed: when asked, 'Do you support a stepping-stone approach returning the shuttle to flight, completing the International Space Station, building a replacement for the shuttle, returning to the Moon and going on to Mars, for under 1% of the federal budget,' fully 77% agreed.³⁵⁷ This shows correct information and publicity matter a great deal.

Can the successful methods that NASA has used in the past play a role today in cultivating interest in space activities? In 2006 NASA held a nationwide collegiate contest, charging teams from different universities with delivering ways to put it back into the public mind. Winning groups outlined marketing strategies involving cinema advertisements, websites, radio spots, 'bus wrappings,' expanding 'Space Day,' even a new college course.³⁵⁸

Unfortunately, none of these, even all of them put together, amounted to more than passing references. These ideas are symbolic, but simply commidify NASA, making it a 'product' competing with a multiplicity of other such advertised products, none of which holds the attention of anyone for very long. The first bus driving by says, 'NASA is the way to the future,' and the next says, 'NASA destroys the future with radioactive fallout from its nuclear engines.'

While good-hearted, the students did not outline the scheme in the only language that would make it work, which is nationalistic, idealistic, pragmatic and bold. They did not legislate planetariums being common as movie-houses (or being installed inside them). More importantly, they did not charge the government with taking responsibility for directing it with funding and further encouraging private enterprise to play an extended commercial role.³⁵⁹ Only overhead direction in this sense, making space activity a core facet of public life, will organically bring real application of the new cosmology.

³⁵⁶ See: Space Politics, "Gallup-ing in Different Directions," 17/07/2005.17/09/06.

³⁵⁷ Watson, Traci, "Poll: Shuttle Supported, Faith in NASA Slipping," USA Today / CNN, 10/07/2005.

³⁵⁸ For example, see Bentley University, "Bentley's NASA Business Students," 2005.

³⁵⁹ Ala Sir Richard Branson's Virgin Galactic, Burt Rutan's Scaled Composites, Paul Allen's Mojave Aerospace Ventures and Robert T. Bigelow's Bigelow Aerospace. These outstanding private companies embody the vision.

Schools may help to socialize the next generation, but for the current one, the same tools of marketing strategy used everyday in the business world to advertise most effectively can be brought to bear on effecting change. Indeed, if the tendency of the leading names in business and entertainment towards philanthropy and personal conviction about related interests is any measure, the potential of an understanding in promotion of the human adventure in the cosmos is very high.³⁶⁰

Daniel A. Stone of Space Holdings, in a testimony to the *President's Commission on Moon and Mars and Beyond*, indicated that NASA can be ingrained in the popular culture through 'exploring the universe of marketing,' pointing to the US Military's success in ingraining itself into the public mind: 'Uncle Sam wants you,' 'Be all that you can be,' and now, 'An army of one,' are all household phrases.³⁶¹ To these could be added, 'You and the Navy... full speed ahead,' 'Aim high,' and, 'The few, the proud, the Marines.³⁶² Something like, 'A Giant Leap for Mankind,' is pure advertising fodder. In essence, Stone points to the need for taxpayer-funded programs to advertise in order to inform those who are paying for them, arguing people have to be told why they should care about NASA and space. Though the agency has shied away from doing just that, it needs to begin selling itself to the voters, like other agencies do. Luckily, Stone finds that NASA has a very large and very 'cool' program to sell, namely the Moon-Mars initiative:

NASA needs more than outreach, it needs to go out there and sing its praises from the highest mountains and use the satellite technologies that it helped create to get its message into the homes of every American. The power of space to evoke and excite reverberates through the popular culture, with mainstream advertisers harnessing that power, from HP to MTV, from Radio Shack to British Airways, to the latest Diet Pepsi TV commercials... these companies are not as a rule space-oriented, but they understand the power that the <u>idea</u> of space exploration has over the public imagination. It is aspirational. It is intelligent, futuristic, innovative, high-tech and fun. If they can do it, why can't NASA use the power of space to evoke, umm, SPACE?³⁶³

³⁶⁰ Authors note: one can only imagine if Tom Hanks, Bruce Willis, Scott Bakula, Mel Gibson, Gary Sinise, Ed Harris, Harrison Ford and of course, William Shatner, among others, spoke on it, people would listen. Witness how many people have adopted children from developing nations, for instance, following recent celebrity adoptions (Ex. Angelina Jolie and Brad Pitt).

³⁶¹ See: Stone, Daniel A., "Testimony Before the President's Commission on Moon, Mars and Beyond," 24/03/2004

³⁶² Recently, these slogans (except the Marines) have been changed. The Navy has 'Accelerate Your Life' while the Air Force went first to 'Cross into the Blue' then 'Do Something Amazing,' and the Army has switched again, in an attempt to raise recruitment, at the lowest level since Vietnam, with, 'Army Strong.' ³⁶³ Ibid- Underlining in the original.

Refocusing schools is good for children and students, harnessing media and advertising has been speculated as being good for adults young and old, but which medium, especially, is key for reaching an audience wide enough that it makes a difference?

C. The Power of Television

The world of advertising changed in the run-up to the 1960 presidential election. During these first televised debates, the power of television as a medium to influence the public was realized. Richard M. Nixon arrived with an injured knee, hobbling after two weeks in the hospital, underweight and with 'poor pallor.' Unfashionably, he arrived in an, 'ill-fitting shirt and a five-o-clock shadow,' refusing the attempts by make-up artists to clean him up. Kennedy meanwhile, was 'well tanned, confident and fresh.'³⁶⁴ While their platforms were considered about equal in public popularity, the savvier Kennedy used the televised debates as propaganda. He won the 1960 election.

Today, the leading source of current news for American adult high school graduates is still television, and though about half of these migrate to either the Internet or newspapers by the time they leave collage, TV remains the primary or secondary source for all demographics, and is still the most potent propaganda tool in media.³⁶⁵

A stunning example is contained in a Pew media survey, where 93% of respondents knew 'cigarette smoking causes lung cancer,' while 48% knew that 'Earth circles the Sun once a year.'³⁶⁶ This demonstrates the power of both television and the education system, for if there is one theme consistently presented on TV, it is the huge anti-smoking campaign, which repeats in various forms, 'cigarettes are bad and cause cancer.' Likewise, Americans and West Europeans educated since the 1980s have been treated to these same kinds of anti-smoking images and propaganda in school. Thus, virtually these entire populations have been inundated with this correlation. One can imagine if another piece of data was in its place, such as, 'and remember folks, 1 CIRCLE AROUND THE SUN = 1 YEAR,' public knowledge on the survey would reflect it.³⁶⁷

If the power of modern mass media is well apparent, one other instance is especially pertinent in regards to advertising space, this one coming from the world of cartoons. Of course, fictional non-cartoon programs that use astronautics as their main theme have been highly successful. One need only look to the Star Trek and Star Wars franchises, recalling them as only the most popular of many other quality shows and feature films. As well, there are many welldone, popular documentary programs about existential, astronomical, biological and other scientific subjects, and many cable networks, such as Discovery Channel, the National

³⁶⁴ See: Allen, Erika Tyner, "The Kennedy-Nixon Presidential Debates, 1960," *The Museum of Broadcast Communications*, 2005.

 ³⁶⁵ Pew Research Center for the People and the Press. (2005). "Public Attentiveness to News Stories."
 ³⁶⁶ See: National Science Foundation, "Science and Engineering Statistics," 2006. 03/09/06.

³⁶⁷ Poetically, this question reminds one of the beginnings of this work and Copernicus, who would have answered the poll correctly 550 years ago: "Hence I feel no shame in asserting that this whole region, girded by the moon and the center of the earth, traverses this grand circle amid the rest of the planets in an annual revolution around the sun."

Geographic Channel and the BBC, maintain good ratings.³⁶⁸ It is not the format but rather the philosophy behind cartoons that makes all the difference.

Beginning especially in the late 1970s and continuing now in the present, cartoons have been so popular that almost all young adults in the West have memories of one animated show or another. In them, heroes and anti-heroes do battle, discover their own identities, and are fueled with a sense of mission and purpose dedicated to some great cause; in short, what makes for good entertainment for youngsters.

Soon, however, by the early 1980s, an even more profitable use for cartoons was found, taking advantage of their depiction of strong characters and heroic deeds. Although most of the audience was unconscious of it, the cartoons *themselves* became extremely potent advertisements, for toys. Demonstrating sheer brilliance in marketing, toy makers figured out that by drawing their toys into the cartoons, by tailoring the TV shows around the toys they manufactured, millions of watchers and their parents became compelled to purchase them in the store. The companies began raking in obscene amounts of money in sales. The most savvy, such as *He-Man and the Masters of the Universe* creator Roger Sweet (and Mattel Toys), made over \$400,000,000 in just US toy sales in 1986.³⁶⁹ **THE TRANSFORMERS**, another '80s cartoon featuring Hasbro toys, not only made big money in that decade, but also spawned new incarnations and inspired the 2007 film of the same name (produced by Steven Spielberg).³⁷⁰

This tells us that while commercial advertisements and documentaries are good, that halfhour programs devoted to recent events and enhanced coverage in the news are fine, the cartoon *strategy* is what matters most in exploding the cosmic dream into the public imagination.

Although it could work for NASA just as well, the following example of strategic programming is specifically for Europe and ESA. It is not a cartoon, but a television program built on the cartoon idea, in that, the show is tailored around the product ESA wants to sell, in this case, itself. Providentially, such a show is possible. While thousands of new programs are created every season for networks and cable channels around the world, this hour long meta-advertisement for ESA and by extension, European unity and identity, has never been put to screen. When it is, it will be a phenomenon:

Concept. A European production company produces an hour-long weekly television show set 100 years in the future, 2112 perhaps, a future in which *Tsiolkovsky's Imperative* has been taking place since our time, and is continuing to be realized. In this way, the show portrays the *fruits of ESA's labor*, driving home to the viewer that its *telos* is nothing less than the realization

³⁶⁸ Downey, Kevin, "Discovery Channel: Back to its Roots" Series focusing on Man and Nature, 2006.

³⁶⁹ See: Sweet, Roger, *Mastering the Universe: He-Man and the Rise and Fall of a Billion-Dollar Idea*, Emmis Books, 2005.

³⁷⁰ Tamm, David J., "Movies about Space and Time Travel," City of Hudson, Florida, 2006. 16/09/06.

of the most important thing in the world: the human future in space and what it existentially means for the whole race and life on Earth.

Philosophy. While the highly successful science fiction niche has produced a number of spectacular shows, there reamains a massive spiritual hole: Alas, the shows that have been made have not contained the probable future at all, primarily because two radical assumptions are almost always made:

1) Aliens exist and interact with human beings

2) Faster-than-light travel is possible

This new show would not. Its iron-clad guiding law is to depict only what is possible *and probable*, carrying the major worldwide themes, dilemmas and situations of today 100 years into the future.

The geopolitical problems on Earth have not gone away. There is still great power competition. Stresses on Earth have not gone away, in fact they have been exacerbated throughout the 21st Century, making the show edgy. What is the status of the Middle East and other seemingly insoluble problems? Who polices space? What are the legal principles elucidated? What are businesses allowed to do? How is humanitarianism affected? What developing technologies help people on the widest scale, and which are the most dangerous, requiring extremely stringent regulation? 2112 will no doubt be a time full of its own challenges, but the Imperative's ongoing progress places them within the context of being on track to the best destiny. There is cause for hope and worry, just like today. Each Earth civilization is portrayed in its ideal form, but terrorism is a common problem then as now, divisive and criminal forces are prevalent and form one of the compelling aspects of the show's overall action. How does each civilization reconcile itself to a 'globalism with many globes?'

Geography. Humanity is confined to the Solar System, settling and developing it in the most probable (yet optimistic) way. Space elevators are used, in need of guarding perhaps, from terrorism. Each spacefaring civilization and agency has one or more moonbases, Mars is being settled, mining of metals is happening on near-Earth asteroids. Corporations are out there and so are pirates- cargo and supply ships run freight from one place to another. People go for holidays on space cruises. ESA and NASA, along with RKA, CNSA and JAXA all still exist and are at the vanguard of their civilizations. Settlers, not just astronauts, live in space. Jupiter's large moon Callisto is the site for a base, facilitating human penetration of the outer Solar System.³⁷¹ A major international orbital base is situated at a Lagrange point, namely Sun-Earth 2 (SEL2), and perhaps, a colony ship is on the way to Titan, Triton or Alpha Centauri.

³⁷¹ This idea about Callisto, along with the proposition that the outer Solar System is a place rich in energy and vital elements for human use, among other things, is highlighted by astronautical engineer Robert Zubrin. See: Zubrin, Robert, *Entering Space: Creating a Spacefaring Civilization*, Putnam, 1999

Technology. Done technically with the help of an ESA advisor and graduate students, the show steadily introduces the advances in propulsion, shielding, weaponry, and robotics that reflect actual probabilities. Though no light-speed is available, ESA, NASA, RKA, JAXA and CNSA spacecraft can be made very fast around the Solar System. Though no movement between the stars is possible, a multi-generational ship to the nearest one may be. Weaponry can be made very scary, as is possible even today. ESA is represented as a force for good against them, as anti-proliferation is still a major task in the future.

Language. The language of the program is English because that is the language of the ESA. Astronauts and 'official' people speak that language when on duty in the show, but other languages are used when it makes sense for them to be: when French people are shown together, they speak French, and English is subtitled. Polish people speak Polish when together, Germans speak German. When the RKA is in the show, they speak Russian.

ESA and European Identity Focus. The organizations in charge of space are... the space agencies themselves, but with enhanced ability assumed. ESA for instance, 'became the official agency of the EU,' and sometime later, the EU's overall 'Space Command.'³⁷² As such, the ESA and its small army of astronauts, scientists, technicians and professionals, operate and cooperate with NASA, RKA cosmonauts, CNSA taikonauts and the others, against the background of events on Earth. To the degree that military forces are present in space, they 'ride with' or 'are stationed on' infrastructure operated by the agencies, strikingly set against the backdrop of our star system's many dazzling environments. European cultural artifacts are used predominately in the show, public domain classical music for instance, deference to real historical events and Europe's humanistic heritage. Other civilizations are idealized, highlighting their best aspects, and depicted as moving towards their own destiny within the overall progression of the Imperative.

Plotlines. Three human-centered plotlines maintain continuity, two of which must be: events on a Mars settlement (to directly connect it with the results of the 2nd Space Race), and the travels aboard an ESA spacecraft. The other is flexible depending on what is happening.

Benefit. European space affairs, ESA and even the EU have the most to gain from this television series, but in the end, everybody gains. One hundred years before the Moon landing, Jules Verne wrote about that event, stimulating the imaginations of readers. We know now who some of those readers were. What emerges here is the same principle- a weekly show that is not only great entertainment, but doubles as an ongoing infomercial about the science and geography of the real Solar System, and trebles as a recruitment tool for the ESA.³⁷³ One could

³⁷² This is already true of NASA, RKA and CNSA.

³⁷³ Please see Appendix-9.

even say that, since there is no pan-European identity like this in popular culture, the EU should pay for the show's production (see Appendix-9 for the show's likely timeline).

Finally and most importantly, this show specifically has the ability to be created purposefully as a self-fulfilling prophecy. By portraying human-centered drama ('space opera') against the background of the settlement and colonization of the real planets, moons, asteroids and orbital environments, the show can sow the seeds, in the tradition of Verne, of what *will be* if the right things are done in the here and now. Kids in the schools would easily see the correlation between what they are studying and its application to a destiny that is willing itself into existence. This show concept is a sure-fire way to popularize the mission of ESA and NASA, by mirroring what their mission really is, to the tune of Ludwig Van Beethoven, Symphony #9.³⁷⁴

³⁷⁴ An inspiring thought inspired by Anna Spysz

4.3 THE COST OF SPACE

These changes, in schools and in media publicity, are the essential building tools for the vision to manifest itself in the Western imagination, which must be done. As Sylvia Engdahl related, we are at that point in history when the public must be swayed if progression is to happen, because the costs of it are so high. As noted in Chapter I and II, the great advantage of the US and EU is that these large corporate entities act, in terms of the social contract and general will of the people, as 'personalities.' As such, they can amass huge resources and execute exploration and settlement as could not be done otherwise. In estimating the raw costs for embarking on *Tsiolkovsky's Imperative*, NASA Administrator Griffin is most clear:

It may be argued that we have many difficult problems in greater need of immediate attention and resources than is human space flight. But even recognizing this reality, space flight is sparingly funded. In round numbers, FY2003 US budget outlays were approximately \$2.1 trillion, while the US population is just under 300 million, yielding an average liability of \$7000 per person, or about \$20 per day for each man, woman, and child in the nation. With the NASA budget at \$15 B/year, the civil space program costs each person in the nation about \$50/year, or less than 14 cents per day. A really robust space effort could be had for a mere twenty cents per day from each person! I spend more than that on chewing gum. We as a nation quite literally spend more on pizza than we do on space exploration. So I don't think we are overspending on space. As wealthy as the United States may be, it is certainly true that we can allocate only a very small fraction of that wealth to the development of human space flight. But we *must* allocate that fraction, and we must spend it wisely. I don't think we are doing enough of either. How are we going to feel when one of the Apollo lunar landing flags is returned to Earth and displayed in a museum - in Beijing? Do we really want a world in which the human space flight programs of other nations are on the rise, while ours is in decline? No other nation can surpass us in human space flight unless we allow it to happen. So, recognizing that others may differ, for me the single overarching goal of space flight is the human settlement of the solar system, and eventually beyond. I can think of no lesser purpose sufficient to justify the difficulty of the enterprise, and no greater purpose is possible.³⁷⁵

Is there a frame of reference involving other 'great deeds' which we may use to evaluate the costs of doing this one? Between March 2003 and July 2006, the US alone had spent \$254,000,000,000 on operations in Iraq. This amounts to \$240,000,000 a day. Using the cost of just American involvement in just Iraq, it is possible to compute how many days of embroilment are equivalent to the costs of 'expensive' space missions: probes, spacecraft and entire programs.

³⁷⁵ See: Griffin, Michael, "Testimony of Michael Griffin: Hearing on the Future of Human Space Flight," *Committee on Science*, 2003. 14/09/06.

The full list (located in Appendix-10), reveals that for the amount of money spent on deposing Saddam Hussein, battling terrorism and getting Shi'ite and Sunni to cooperate with each other and with Kurd, the US could have literally funded decades of massive accomplishment in space, *including the entire Moon-Mars initiative*.

Put another way, the Hubble Space Telescope cost the same as 4 days and 20 hours of Iraq intervention. Twelve of the most important exploratory missions of the last 30 years, including Voyager, Cassini-Huygens and Mars Express, were funded from blueprint to completion of mission for the cost of *one month* of Iraq intervention. ESA's only approved Aurora mission, ExoMars 2011, is fully funded in exchange for *under 3 days* in Iraq. The entire Galileo Positioning System array is the equivalent of two weeks and two days. For the cost of three years intervention, NASA could have built a humongous fleet of over 150 space shuttles, from scratch, assuming no economies of scale.³⁷⁶

This data on cost, along with the method of engaging space advancement presented herein, has not been an attempt to show how the greatest space power is trading its patrimony for a mess of pottage. It has been an attempt to clarify the true scope of the project, showing that it is something completely realistic and possible, using the evidence from previous chapters as grounds for the necessity of it.³⁷⁷

³⁷⁶ Please see Appendix-10.

³⁷⁷ In 1964, Nikolai Kardashev created a scale to measure the power of a civilization, claming three types on the 'Kardashev Scale': Type I civilizations have the ability to control their planet's energy and resources, and can travel between planets within a star system. Type II can control the energy and resources of its solar system and star. Type III controls the energy of many star systems, up to an entire galaxy. Humanity is judged thus far variously between 0.1 and 0.7 (Sagan), on the way to Type I. Tsiolkovsky's Imperative is the one guarantor of advancement in this respect. See: Galantai, Zoltan, *Long Futures and Type IV Civilizations*, Budapest University of Technology and Economics, 2003.

CHAPTER IV CONCLUSION

The US Census Bureau estimates world population was 1 million at the time of the first Neolithic settlements, 10 million at the time of the agricultural and urban revolutions in Sumeria, 20 million at the time of the building of the Great Pyramid on the plains of Gizeh, 30 million when Abraham crossed the Jordan, 40 million when Troy fell and 100 million at the zenith of Athens. If everybody in the world put together in the 5th Century BC amounted to modern Germany and Poland, minus half of Poland, we now see as clear that the 6.5 billion of today sprang from a sparsely populated smattering of groups only 100 generations (97 'great grandparents') ago. As well, it is clear that humanity, astoundingly few compared to today, must have had something interior to them that drove the progress of history.³⁷⁸

Today's pace of change is faster than ever before in this historical narrative, and we might marvel, like Dickens' Scrooge at the end of his journey into the past, at how different society is now from that of even one century ago. A difference completely unprecedented, with a good example seen in the time it took to get off the ground at Kitty Hawk, to touchdown in the Sea of Tranquility on the lunar surface: 66 years. Yet, as for the absolute development of our biology, modern humans have not developed physically away from the natural tendency to group themselves and each other, nor have socially removed in any successful way the urge to do so. Teaching about the cosmos in schools, publicizing it intensely and making it the core aspect of public life is a great ability brought to you by the power of modern mass communication. It is highest time this power is used, at long last, for this precise purpose.

If people still write history books in one hundred years time, should we not decide right now to make sure the current Moon-Mars initiative, the core of the 2nd Space Race, is inscribed 'the beginning of a journey', and not, 'the swan song of the West'?

³⁷⁸ The population of Athens during the time of Pericles, Sophocles, Phidias, Herodotus, Myron, Euripides, Socrates, Thucydides, Hippocrates, Democritus, Aristophanes, Isocrates, Xenophon, Plato and Diogenes meanwhile, all of whom were alive in the same century, was about 100-200,000 people. Please See: United States Census Bureau, "Historical Estimates of World Population," 2006.

"I could have gone on flying through space forever."

-Yuri Gagarin

<u>CONCLUSION</u> THE LAST QUESTION

Fiolkovsky's Imperative tells us that space is part of our natural environment, is a place that we must physically extend to, and that this is a natural process, like the discovery of new lands on Earth during the Age of Exploration.

This thesis has considered the reinvigoration of the West through outer space development. It has attempted to present the reality of how such development and investment benefit the European Union, Western Civilization and humanity as a totality, much more than the sum of money put into it by these entities. In the case of the West, it has communicated these benefits three:

1) Against Nature (biological)

2) For its own Identity (social)

3) In the new 2nd Space Race (geopolitical)

Unifying them, its primary question about whether and why Europe should step in and take the lead in this process, to assume a rightful and justified place in accordance with its history, culture, traditions and stature, has been answered.

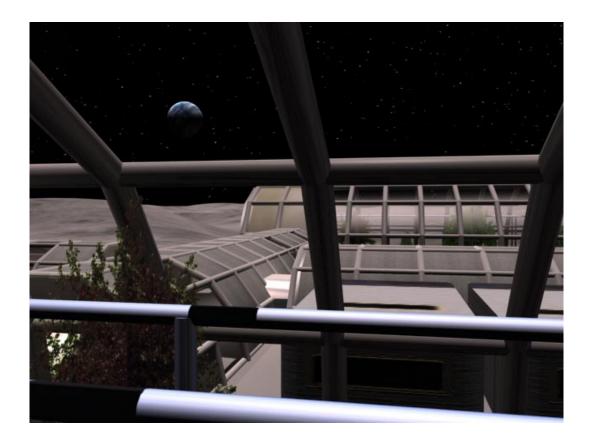
Considering the European Union, it has argued that in its quest for a coherent pan-European identity, a reorientation of its postmodern societies is required. It has suggested this is possible through the sound use of schools, mass media and the bold promotion of the ESAwhile reminding that an understanding of space reality has the integral role to play in this process. It has also found that this framework is only adoptable in a short window of time, our time, when the resources of the Earth and the civilizational power of the West, not yet Balkanized to paralysis, coincide.

What is the conclusion of the question of benefit for the world at large? The research strains followed have revealed that not only does the West have a responsibility to maintain its constitution and move forward as a stable entity for its own good, but also to fulfill the responsibility it has to all the civilizations- to remain physically powerful enough to protect the Earth against nature. It may be that all peoples and cultures have their own ends and destinies, and that there is no universal civilization, but that is exactly what Mother Nature does not care about. The research provided finds that up against her forces of indiscriminate brutality, annihilation and extermination, stands the Western Leviathan.

The invigoration of that monster's might materializes in the psychological conditioning and adaptive radiation of the men by which it is composed, who go on to rationally direct it to confront its nemesis, on Earth and in space. The de facto collective power of humankind, therefore, is vitally increased through the new enlightenment of *Tsiolkovsky's Imperative* of space exploration, development, colonization, expansion and settlement; and that is why it should be done.

The greatest fantasy is reality itself- living on Earth, breathing in oxygen and air, surrounded by the Solar System, which is now a place we can go, encompassed by the titanic totality of the existing cosmos. No one could come up with a more fantastical or unbelievable story than the one we are actually a part of. However, only a society-wide capacity to dream, engaged and working to change our reality now, in a non-deterministic universe, can save the real *Fantasia*, which is of course our living consciousness. The fact is, we don't know of any others out there. We don't know if anyone has ever defeated a 'Judgment Day' or not, while on Earth, all we see in the biological record and geological record, is death.

As for greater Europe, make no mistake about it. The survival and prosperity of the West now, in its 11th hour, offers the best hope for humankind in the 21st Century. It is the most important priority of our time. The conquest of circumsolar space emerges as the formula for it, and just perhaps, is also the meaning of life... *in the singular*.



<u>APPENDIX I</u>

GEOLOGIC TIME: PRECAMBRIAN

HADEAN EON

4,600,000,000 to 3,800,000,000

Geo: Earth accretes, 'Giant Impact,' exterior solidifies, water arrives, atmosphere forms *Hadean Eon ends with the formation of the oldest known rocks and minerals*

ARCHEAN EON

3,800,000,000 to 2,500,000,000

Geo: Atmosphere thickens, oceans, temperatures stabilize / Bio: Most ancient life originates Archean Eon ends when Oxygen produced by primitive life causes 'Oxygen Catastrophe'

PROTEROZOIC EON

2,500,000,000 to 542,000,000

Geo: Tectonics, continents emerge, 'Snowball Earth' / Bio: Organisms on shelves, 1st animals *Proterozoic Eon ends with the receding of the ice and beginning of the 'Cambrian Explosion'*

GEOLOGIC TIME: PHANEROZOIC EON

PALEOZOIC ERA- 'Old Life'

CAMBRIAN PERIOD 'Explosion of Life' 542,000,000 to 488,000,000 Geo: Earth warms, large coastlines / Bio: Cambrian Explosion, complex animals and vertebrates Ends with Extinction Event 1/7

ORDOVICIAN PERIOD- 'Age of the Arthropods' 488,000,000 to 443,000,000 Geo: highest ever seas / Bio: Moss, plankton, land plants, trilobites, octopus, scorpions = 'fossil fuels' Ends with Major Extinction Event, 2/7- second worst Ice Age ever, seas recede

SILURIAN PERIOD- 'Age of Arthropods II'

443,000,000 to 416,000,000

Geo: Greenhouse stabilizes / Bio: trilobites comeback, sea scorpions, fish, lungfish, 1st land animals *Period ends without major extinction*

DEVONIAN PERIOD- 'Age of Fishes' 416,000,000 to 359,000,000

Geo: High seas, greening / Bio: Mollusks, coelacanth, amphibians, sharks, insects, 1st trees Major Extinction Event 3/7 finishes Devonian as 'greening' of the land lowers CO2 greenhouse gas

CARBONIFEROUS PERIOD- 'Age of Amphibians' 359,000,000 to 299,000,000

Geo: Coal deposits (bark trees) / Bio: Dragonflies 1st to fly, crabs, eggs, 1st reptiles *Period ends without major extinction*

PERMIAN PERIOD 'Age of Amphibians II' 299,000,000 to 248,000,000

Geo: Pangea, low seas, deserts / Bio: seed plants, cycads, and amphibians, Dimetrodon Period ends with ELE 4/7 (worst of all time). Probably an impact event, 90+% of life gone

MESOZOIC ERA- 'Middle Life'

TRIASSIC PERIOD 'Age of Reptiles' 248,000,000 to 205,000,000 Geo: Pangea / Tethys Sea, warm / Bio: survivors radiate quickly, reptiles dominate, dinosaurs pterosaurs Ends with ELE 5/7 extinguished 50% of all species, opening ecological niche for greater dinosaurs

- JURASSIC PERIOD 'Age of the Dinosaurs' 205,000,000 to 146,000,000 Geo: 'Sundance Sea' in US / Bio: Dinosaurs rule land; plesiosaurs rule sea, frogs, salamanders and ferns Period ends without major extinction
- CRETACEOUS PERIOD 'Age of the Dinosaurs II' 146,000,000 to 65,000,000 Geo: Continents break / Bio: Many trees, flowering plants, birds, +1/2 of all dino species, mammals Major ELE 6/7 caused by large objects from space impacting Earth, all dinosaurs extinct

CENOZOIC ERA 'New Life'

- PALEOCENE EPOCH- 'Early Dawn of the New' 65,000,000 to 56,000,000 Geo: Tropical climate / Bio: Mammals radiate: 1st carnivorous on land, whales, seals in sea, bats in air
- EOCENE EPOCH- 'Dawn of the New (forms of life)' 56,000,000 to 34,000,000 Bio: Giant mammals evolve and develop, whales diversify, grass debuts, Antarctica is glaciated
- OLIGOCENE EPOCH- 'Few of the New (life)' 34,000,000 to 23,000,000 Geo: Warm climate / Bio: Rapid evolution of fauna, diversification of flowering plants
- MIOCENE EPOCH- 'Less of the New (forms of life)' 23,000,000 to 5,300,000 Geo: Moderate climate, grass becomes ubiquitous, 1st apes, horse and mastodon diverge
- PLIOCENE EPOCH- 'Continuation of the New)' 5,300,000 to 1,800,000 Geo: Modern biomes / Bio: 'Lucy' walks in East Africa
- PLEISTOCENE EPOCH- 'Most of the New (forms)' 1,800,000 to 11,500 Geo: 4 glacial ages Bio: Extinction of large land mammals, Homo sapiens originate, diverge
- HOLOCENE EPOCH 'Newest' 11,500 BC to TODAY Geo: Interglacial / Bio: Domination by Neolithic, Ancient, Classical, Medieval, Modern Humans Extinction 7/7

APPENDIX II

METEOROID AND AJTEROID IMPACT JIZE COMPARIJONJ

OBJECT	SIZE	FREQUENCY	PROBABILITY
Meteoroid Meteoroid Asteroid Asteroid Asteroid Asteroid Asteroid	1-25 cm range 25-300 cm range 3-50 m range 50-75 m range 75-125 m range 125-750 m range 750 m to 1 km 1-4 km	avg. every 5 minutes avg. once a month avg. four times / year avg. every hundred years avg. every thousand years avg. unknown avg. unknown avg. unknown	burns up burns up local damage city destroyer metro destroyer country destroyer continent destroyer critical threshold
Asteroid Asteroid Asteroid	4-5 km 5-20 km 20-60 km	avg. unknown last 65 million years ago last 250 million years ago?	photosynthesis stops K/T Extinction P/T Extinction?

OBJECT	SIZE (APPROX.)
TUNGUSKA EVENT, 1908	060 m
CONGRESS MANDATE 2020	140 m
CONGRESS MANDATE 2008	01 km
SHOEMAKER-LEVY 9 (JUPITER), 1994	02 km
K/T BOUNDARY EVENT (CHICXULUB)	10 km
VRETFORT CRATER, 2 billion years ago	15 km
P/T BOUNDARY EVENT? (WILKES-LAN	ND) 50 km

*Comets are considered as either meteoroids or asteroids depending on size

APPENDIX III

The Polish Academy of Arts and Sciences in Krakow: Its Divisions

CLASS I: PHILOLOGY

COMMISSIONS: Classical Philology Modern Philology Art History Slavonian Culture

CLASS II: HISTORY AND PHILOSOPHY

Commissions: Central Europe Eastern Europe Prehistory of the Carpathians History and Culture of the Jews Law

CLASS III: MATHEMATICS, PHYSICS AND CHEMISTRY Commissions Astrophysics

CLASS IV: NATURAL SCIENCES

Commissions: Agricultural Sciences Quaternary Palaeogeography Embryology and Morphology Geoinformation

CLASS V: MEDICINE Commissions: Medical Ethics

CLASS VI: ARTISTIC CREATIVITY

INDEPENDENT INTERDISCIPLINARY

Commissions: Threats to Civilization History of Science Evaluation of Textbooks European Matters Technical Sciences Development of the City of Kraków Economic Sciences

APPENDIX IV

OPTIMISTIC VERSUS PESSIMISTIC SCIENCE FICTION

Films about the future are many. When the future is portrayed and humankind has followed *Tsiolkovsky's Imperative* to its true destiny in space settlement, the result is either positive change (Star Trek) or a continuation of today's trends (5^h Element, Total Recall, Dark Star). When humankind has not left Earth, the results are more one-sided:

<u>CONFINED TO EARTH / OPTIMISTIC</u> <u>CONFINED TO EARTH / DYSTOPIAN</u>

None

Idiocracy	2006
V for Vendetta	2006
The Island	2005
Aeon Flux	2005
The 6 th Day	2000
The Matrix	1999
Gattaca	1997
Starship Troopers	1997
Twelve Monkeys	1996
Demolition Man	1993
Robocop	1987
1984	1984
Terminator	1984
Seksmisja	1984
Blade Runner	1982
Escape from NY	1981
Mad Max	1979
Logan's Run	1976
A Boy and his Dog	1975
Rollerball	1975
Zardoz	1974
Soylent Green	1973
A Clockwork Orange	1973
Westworld	1973
THX 1138	1971
The Omega Man	1971
Planet of the Apes	1968
Fahrenheit 451	1966
The Time Machine	1960 / 2002
Things to Come	1936 / 1979
Metropolis	1927 ³⁷⁹

³⁷⁹ Source: 'Movies About Space and Time Travel': <u>http://www.hudsonfla.com/spacemovies.htm</u> 137

RATING THE NATIONS IN the 2nd SPACE race

- As of 2006, we can place the world's nations in one of the following groups, devised not on the basis of budget or potential power, but current ability and demonstrated accomplishment:
- LEVEL 10: None³⁸⁰
- LEVEL 9: None³⁸¹
- LEVEL 8: United States (NASA)³⁸²
- LEVEL 7: Russian Federation (RKA), China (CNSA)³⁸³
- LEVEL 6: Europe (ESA), Japan (JAXA)³⁸⁴
- LEVEL 5: India (ISRO), Israel (ISA)³⁸⁵
- LEVEL 4: Argentina (CONAE), Australia (CSIRO), Brazil (AEB), Canada (CSA), Iran (ISA), Nigeria (NASRDA), Pakistan (SUPARCO), South Korea (KARI), Taiwan (NSPO), Ukraine (NASU)³⁸⁶
- LEVEL 3: Algeria (CNTS), Bangladesh (SPARRSO), Chile (ACE), Indonesia (LAPAN), Malaysia (ANGKASA), North Korea, Peru (CONIDA), Saudi Arabia (RSRI), South Africa (ISRO), Thailand (GISTDA), Turkey (TUBITAK)³⁸⁷
- LEVEL 2: Armenia, Belarus, Colombia, Croatia, Georgia, Lebanon, Mexico, New Zealand, Serbia, Singapore, Venezuela³⁸⁸
- LEVEL 1: Albania, Azerbaijan, Belize, Bolivia, Bosnia, Brunei, Congo, Costa Rica, Crna Gora, Cuba, Dominican Republic, Ecuador, Egypt, Ethiopia, Ghana, Jamaica, Jordan, Kazakhstan, Kuwait, Libya, Macedonia, Madagascar, Moldavia, Morocco, Namibia, Oman, Philippines, Qatar, Sri Lanka, Syria, Tajikistan, Tunisia, Turkmenistan, United Arab Emirates, Uruguay, Uzbekistan, Vietnam, Zimbabwe³⁸⁹
- LEVEL 0: Afghanistan, Angola, Bahrain, Benin, Bhutan, Botswana, Burma, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, Congo-Brazzaville, East Timor, El Salvador, Eritrea, Fiji, Gabon, Guatemala, E. Guinea, Guyana, Haiti, Honduras, Iraq, Ivory Coast, Kenya, Kyrgyzstan, Laos, Lesotho, Liberia, Malawi, Mali, Mauritania, Mongolia, Mozambique, Nepal, Nicaragua, Niger, Palestine, Panama, Papua New Guinea, Paraguay, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, Suriname, Swaziland, Tanzania, Togo, Uganda, Yemen, Zambia³⁹⁰

<u>APPENDIX VI</u>

- ³⁸⁰ Level 10: Manned missions to SEL2, near-Earth objects or Mars
- ³⁸¹ Level 9: Moonbase, continual presence outside Earth orbit
- ³⁸² Level 8: Manned Moon landing, continual presence in Earth orbit
- ³⁸³ Level 7: Agency has ability to orbit astronauts independently
- ³⁸⁴ Level 6: Agency has an astronaut corps –or- carries out science missions
- ³⁸⁵ Level 5: National government has independent launch ability and satellite development
- ³⁸⁶ Level 4: National space agency which is government funded and operates observation satellites
- ³⁸⁷ Level 3: National Academy of Sciences with a Space Office-or-a fledgling agency
- ³⁸⁸ Level 2: University conferring strictly degrees in astronomy, astrophysics, astronautics, cosmology
- ³⁸⁹ Level 1: Observatory / Planetarium-or-learned astronomy organization

³⁹⁰ Level 0: No Infrastructure

ROADMAP TO THE MOON & MARS



Michael Griffin------Jean-Jacques Dordain-----Anatoly Perminov

UNMANNED ROADMAP TO MOON AND MARS

After the days of Luna, Ranger, Surveyor, Lunar Orbiter, Lunokhod and Apollo, interest in the Moon faded or was shifted elsewhere. After 20 years, renewed exploration began again:

1994	Clementine	NASA	multi-spectral mapping of lunar surface
1998	Lunar Prospector	NASA	magnetic and gravity field studies, mapping
2003	SMART-1	ESA	new solar propulsion tested, x-ray tests
2007	SELENE	JAXA	origin, evolution and tectonics of the moon
2007	Chang'e 1	CNSA	lunar orbiter to study geology and structure
2008	Lunar Reconnaissance Orbiter	NASA	will find landing sites, presence of water-ice
2008	Chandrayaan	ISRO	hi-resolution mapping in 3D
2008	Chang'e 2	CNSA	two rovers will examine surface for place for base
2010	LUNAR-A	JAXA	will find out if the moon has a core, stratigraphy
2012	Chang'e 3	CNSA	will test 'return' technology and samples, helium-3

Following a 20-year gap since the days of Mariner and Viking, the following spacecraft are and will be studying Mars, which since 2004 have been sent in accordance with the Vision for Space Exploration:

1996	Mars Global Surveyor	NASA	found possibility of subsurface water
1996	Mars Pathfinder	NASA	found evidence of warm temperature / water
2001	Mars Odyssey	NASA	found water ice (to 3m deep) at South Pole
2003	Spirit and Opportunity Rovers	NASA	found direct evidence of past oceans
2003	Mars Express	ESA	discovered water-ice on Mars
2005	Mars Reconnaissance Orbiter	NASA	landing sites and detailed topography
2007	Phoenix	NASA	will look for signs of past life, ice
2009	Phobos-Grunt (Ground)	RKA	mission to study Martian moon
2009	Mars Science Laboratory	NASA	advanced rover to sample soil, investigate life
2011	ExoMars	ESA	Aurora, will evaluate hazards for humans
2011	Mars Scouts 2011	NASA	to be announced
2013	Astrobiology Field Laboratory	NASA	conclusive structure of Martian surface
2020	Mars Sample Return (joint)	ESA	will bring back Martian soil for analysis
		-	



Sun Laiyan ------Keiji Tachikawa-----G. Madhavan Nair

APPENDIX VII

CENTRAL EUROPE IN SPACE

Members of the ESA include: Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Holland, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden and Switzerland, while Canada is an affiliate, Czechia, Hungary and Romania are acceding members, and Poland stands to join them. In the former Peoples' Democracies of Central Europe, 'Space Offices,' are now headquartered in Warsaw, Prague and Budapest, to oversee the preparation of the national infrastructures for the final phase what has become a twenty-year transition period away from the Soviet *Interkosmos* program (ended in 1991) to ascension into the European Space Agency. As of 2006, Hungary, Czechia and Romania have taken the penultimate step by joining the PECS (Plan for European Cooperating States) Agreement.³⁹¹ Poland has not joined PECS at the time of this writing but is expected to very soon. The Baltic States, Slovakia, Slovenia, Croatia, Serbia, Crna Gora, Macedonia, Bosnia and Bulgaria, have not joined. Nor have Ukraine, Moldavia or Belarus. A breakdown of the current situation as well as the probable future ascension dates may be found below:

Space	e Office	e Budget	PECS	ESA
Hungary	1992	€ 2.00m	2003	2008
Czechy	2003	€ 1.25m	2003	2009
Rumania	1991	€ 2.80m	2006	2009
Poland	2001	€ 3.00m	2007	2011 ³⁹²

The ESA thus far has highly regarded Hungary and the Czech Republic as cooperating states. Through the agreements, Hungary has had instruments on Rosetta, Mars Express and a few projects in biology and radiation aboard ISS. Under PECS, the bulk of Hungary's participation is in space materials science.³⁹³ The Czech Republic has developed hardware by itself and has had a successful launch in 2003 of an atmospheric monitoring satellite. Both Hungary and the Czech Republic take further integration into the European space infrastructure seriously. Poland is another matter because it has not joined PECS as of 2006. Through earlier agreements with ESA however, Polish parts have been flying on Integral GRT, Cassini-Huygens, Mars Express and Rosetta. The research is there, but Polish aerospace and hi-tech firms cannot yet bid for public contracts on the European market. The Polish Space Office has recommended that Poland become a PECS state as soon as possible.

³⁹¹ Please see ESA Website on PECS, located at <u>http://www.esa.int/home</u>-ind/ESA-Article-fullArticle par-04 1069167506502.html

³⁹²*Ibid*

³⁹³ Ibid

APPENDIX VI

ASTRONOMICAL INFRASTRUCTURE

OBSERVATORIES PLANETARIUMS SATELLITES³⁹⁴ CIVILIZATION / / COUNTRY

WESTERN			
Australia	57	14	5
Austria	35	4	
Belgium	97	7	(4)
Canada	45	25	10 (3)
Croatia	6	1	
Czechia	35	8	1
Denmark	11	4	1
Estonia	2	1	
Finland	13	3	
France	78	117	9 (7)
Germany	255	115	4 (4)
Great Britain	88	48	9 (1)
Greece	14	2	1
Holland	9	7	5
Hungary	20	2	
Ireland	2	2	
Israel	3	1	5
Italy	114	46	2 (2)
Latvia	2		
Liechtenstein		1	
Lithuania	4	1	
Luxembourg	1		12
Malta	2		
Norway	5	5	2
Poland	13	12	
Portugal	9	5	1
Slovakia	5	8	
Slovenia	2		
South Africa	20	5	
Spain	34	28	4 (2)
Sweden	8	18	3 (3)
Switzerland	49	8	
New Zealand	21	5	
United States	532	746-2500 ³⁹⁵	422 (20)
Vatican City	2		

 ³⁹⁴ Number in parentheses indicated a jointly owned satellite.
 ³⁹⁵ The extremely divergent figure for U.S. planetariums is because there are c. 750 registered official ones, but a very large number of facilities that either were planetariums and are not used anymore (some from the 1950s and 60s, or are privately owned, or are portable and not fixed structures. Others are used for different purposes, for example, laser-shows, movies theaters and the like.

CIVILIZATION / OBSERVATORIES PLANETARIUMS SATELLITES 396 / COUNTRY

<u>ORT HODOX</u>			
Armenia	2		
Bulgaria	12		
Georgia	2		
Moldavia	1		
Romania	4	5	
Russia	21	20	87 (3)
Serbia	1		
Ukraine	19	2	(2)
<u>JAPANESE</u>	101		
Japan	121	62	35 (7)
SINIC			
China	21	22	34
Korea	4	5	4 (1)
Malaysia	1	1	3
Singapore	•	1	(1)
Taiwan	3	3	1 (1)
Thailand	-	3	4 (1)
<u>HINDU</u>		4.6	
India	15	16	16
AFRICAN			
Congo	1		
Ghana	1		
Madagascar	1		
Namibia	2		1
Nigeria		1	
-			

³⁹⁶ Statistics compiled by the author, taken from many sources, primary of which include: For Observatories: <u>http://www.observatory</u>-guide.org/ For Planetaria: <u>http://www.ips</u>-planetarium.org/atw/ and for Satellites: <u>http://www.ucsusa.org/global_security/space_weapons/satellite_database.html</u>

CIVILIZATION /	OBSERVATORIES	PLANETARIUMS	SATELLITES
/ COUNTRY			

ISLAMIC			
Algeria	1	4	1
Bangladesh	1	1	-
Egypt	3	1	2
Indonesia	3	2	-4 (1)
Iran		2	1
Jordan		1	
Kazakhstan	2	1	
Kuwait		2	
Lebanon	1		
Oman		1	•
Pakistan		1	2
Qatar	1	1	
Syria Saudi Arabia	1	1	4
Turkmenistan	1	1	4
Uzbekistan	6		
Tunisia	0	1	
Turkey	6	2	1
UAE	Ū	$\frac{1}{2}$	2
LATIN AMERICA	A		
Argentina	– 11	6	5 (1)
Bahamas		1	- (_)
Bolivia	2	1	
Brazil	15	24	7 (2)
Chile	12		
Costa Rica		3	
Colombia	1	3	
Cuba	2	1	
El Salvador	1	_	
Ecuador	2	5	•
Mexico	12	22	2
Peru Umugu ov	2 3	1 1	
Uruguay Venezuela	3	1 2	
Venezuela	3	2	
Sri Lanka	1		
Philippines	4	1	1 (1)
French Polynesia	2		
Reunion	3	1	
Western Samoa	1		
Antarctica	4		
Arab Consortium			4
European Consortium			28 (1)
US / EU Consortium			14
			TT.

<u>APPENDIX IX</u>

CREATING THE VISION: SPACEQUEST 2112

OVERALL

The main thrust is the European Space Agency 100 years from now. It is the most important agency in space, responsible for peacefully carrying out *Tsiolkovsky's Imperative* for the EU. This fulfillment of the Imperative is *in progress*; the background is the entire Solar System.

EUROPEAN FOCUS

The language of the show is English, because that is the language of the ESA. When two characters that are French are together, they naturally speak French and it is subtitled in English speaking markets. This constitutes about 5-10% of the show's dialogue, and is pointedly meant to reflect that Europe's diversity has not been subsumed in 100 years time. Action taking place on Earth in a European nation assumes English as the universal language. European cultural artifacts are used predominately in the show, public domain classical music for instance, deference to real historical events and humanism.

SETTING

It is assumed that NASA's *Project Constellation* and ESA's *Project Aurora* play a role in initiating the Imperative throughout the 21^{st} Century.

The following is the series list of historical events until it begins in 2112:

- 1900 Principles of Rocketry (Tsiolkovsky), Airplane (Wright Brothers)
- 1910 Propeller planes developed, used in WWI
- 1920 First rockets built (Goddard, Oberth) amongst criticism
- 1930 Airforces stockpile planes, Discovery of Pluto (Tombough)
- 1940 V-2 Rocket (Von Braun), Nuclear power (Manhattan Project)
- 1950 Space Age begins: ICBM's, Sputnik launched, Luna II impacts Moon
- 1960 1st man in space, 1st Moon landing, 1st probes to Venus, Mars
- 1970 Salyut, Skylab stations, 1st probes to Mercury, Jupiter, Saturn
- 1980 Mir Station, space shuttle, 1st probes reach Uranus, Neptune, and comet
- 1990 Hubble Telescope, International Space Station, renewed Mars exploration
- 2000 5 probes currently studying Mars, Titan landing, Moon-Mars initiative begins ---NOW---
- 2010 New NASA /ESA /RKA spacecraft built, U.S. Moon Landing, private firms help
- 2020 EU / RUS / JAP / CHN / USA Moonbases set up, neo visited, Mars Landing
- 2030 Space station at SEL2, industry picks-up, permanent Mars base begun
- 2040 Commercialization, Moon/Mars bases expanded, neo's mined
- 2050 Decade of growth, space delineated more thoroughly
- 2060 Decade of growth, energy problems solved but problems remain
- 2070 Space elevator built, settlers 'move offworld,' agencies are in charge
- 2080 Movement to asteroid belt for mining, large orbital colonies begun
- 2090 Callisto base built, space station at SEL2 becomes focus point of traffic
- 2100 Artificial gravity pioneered, fast travel in solar system, much wealth, pirates
- 2112 Colony ship leaves for Alpha Centauri, Mars begun terraforming

APPENDIX X

How Many Days of Iraq Intervention would pay for the Imperative?

Item	Cost (2006)	<u>Time in Iraq</u>
SpaceShipOne	\$30 million	3 Hours
Mars Pathfinder	\$280 million	1.2 Days
Mars Express	\$382 million	1.5 Days
Phoenix Mars Rover	\$386 million	1.6 Days
Space Shuttle Launch	\$450 million	1.8 Days
New Horizons (Pluto-Kuiper)	\$550 million	2.3 Days
ExoMars (2011)	\$600 million	2.5 Days
Mars Reconaissance Orbiter	\$720 million	3.0 Days
Spirit and Opportunity Rovers	\$820 million	3.4 Days
Entire Voyager Program	\$865 million	3.6 Days
Hubble Space Telescope	\$1.175 billion	4.8 Days
Space Shuttle Endeavor	\$1.7 billion	7 Days
Cassini-Huygens	\$3.26 billion	13 Days
Galileo Positioning System	\$4 billion	16 Days
Europe's Entire Budget (2006)	\$6 billion	25 Days
Orion Spacecraft	\$15 billion	62 Days
NASA'S Entire Budget (2006)	\$16 billion	66 Days
International Space Station	\$100 billion	1 Year, 51 Days
Project Apollo (2006 Dollars)	\$135 billion	1 Year, 197 Days
Project Constellation (2005-2025) ³	⁹⁷ \$210 billion	2 Years, 145 Days

³⁹⁷ Project Constellation is the name of the Moon-Mars initiative

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