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"The intelligent minority of this world will mark 1 January 2001 as the real beginning of the 21st century and the Third Millennium." – Arthur C. Clarke

Uber Alles: *Uber Alles* is a German phrase that means "above everything else"[1] – not a pair of overalls. Here the term represents an intangible quality or dimension, due to the combination of the discovery of physical laws and the accumulation of Applications such that their combined effect advances technology by an order of magnitude, and the changed worldview that results.

✓ The difference in Eras is like entering a literary contest against Runyard Kipling.

Uber Alles is a tangible, observable *gestalt effect*: What Mr. Harrison did with gears and counter-weights in inventing the maritime chronometer can now be done with a cheap digital watch.[2] This gestalt effect is not limited to technology but is also demonstrable on culture that uses the technology (e.g., "Out on the high seas without a GPS!" – Joe Block, Pirates broadcaster, July 22, 2019), e.g., popular music (see The Music of Your Life, 2 Culture, p. 367, *supra*); this will be the most difficult part for participants to imagine, the *Uber Alles* effect on cultural worldview.

✓ "Gestalt Effect" and "Gestalt Structure" are terms used in GGDM that are not readily found on the internet in 2018; any Google search for "gestalt" generally leads to pages about Gestalt Psychology and Therapy, occasionally, the search will yield a page about phenomenological theory. None of the main dictionaries have tackled the definition of these terms yet. The Gestalt concept of GGDM is discussed in the *dictum* section, 3 Fallen to Earth, *infra*; for now, 'gestalt effect' **used here** is a sort of an overall technological emergence.

➢ Ut supra: The *Uber Alles* for each Era is provided to each position by the Concierge, as soon as the position successfully prosecutes its first Patent in the new Era. The Uber Alles is provided by the Concierge to insure consistency in the physical laws (even if we don't know the details) of the game universe. The Uber Alles won't be the same for each game or for each Era, and constitutes a set of 'mini rules' that adds an extra 'dimension' to the technology of the new Era that sets it apart from the technology of the previous Era, and renders previous technology obsolete. The rules of the Uber Alles might affect Patents, the Matrix, and/or social factors of the position. Finally, the Uber Alles of an Era may continue to operate into the next Era (with a new Uber Alles being added) or it might be rendered obsolete by the Uber Alles of the next Era. There is no Uber Alles for the 1st Era.

➢ Ut infra: It is possible for the players to share the details of the Uber Alles with other players who have not yet advanced into the next Era, but doing so would likely be of little utility. Consider for example, that knowing Ohm's law wouldn't do a 17th Century watchmaker any good, so knowing the Uber Alles for the 2nd Era won't affect 1st Era Patents much or at all.

➢ Magic Formula: The technologies of the 2nd and 3rd Eras are so far beyond what we now call technology that we cannot even begin to imagine their shape or operating principles; we can, in fact, only in the last century begin to imagine the shape and operation of Stardrive technology (e.g., see feature quote from US Patent Publication No. 20060073976 A1, 3 Temporal Technology p. 828, *infra*), the advent of which, in this game, marks the entry into the 1st Era of interstellar technology. Therefore, players should not look to the Uber Alles for any sort of logic, nor should they try too hard to find logical explanations for the Uber Alles given by the Concierge.

Because we don't know anything about what would constitute 2nd and 3rd Era technologies, following Clarke's Third Law (see Intonation of the Three, 1 Technology, p. 688, *supra*), the *Uber Alles* might as well be a magic formula (consider that our current technology of 'controlled lightening,' and more so – extracting power from unremarkable looking gray rocks in concrete buildings – must surely be the magic of the Gods to our distant ancestors). Rather, the only criteria of the Uber Alles is whether, first, it adds an interesting dimension (a twist some might say) to the next Era (the difference between the technology of the mechanical adding machine and the modern personal computer), and second, is it playable?

➢ Apprentices & Familiars: In "The Magician's Apprentice" (2015), Dr. Who is confronted with a boy who is trapped in a minefield; the Doctor initially intended to save the boy until he realizes that it is Davros, his future enemy, the creator of the Dalek race that rages destruction across the universes. It is the classic 'should I kill Hitler as a baby' time-travel problem, except that Davros makes Hitler look like a rank amateur. The Doctor, unsure and torn, flits away in his time machine leaving the boy stranded. At the end of the following episode ("The Witch's Familiar"), after defeating the future Davros once again and destroying his city, the Doctor returns to rescue the boy in the minefield, realizing that he must.

Although the story is nearly linear to the audience who can see all, being told in the normal three-act format (beginning, middle, end; *introduction, crisis, resolution*), <u>it is not to the boy</u>, who sees a man appear in a box out of nowhere who says he will save him, but then acts threatening, then disappears, then reappears and saves him from the minefield (of 'hand-mines') and escorts him home. The resolution of the boy's and the Doctor's crisis occurred in a time loop into the far future (and the Doctor's past memories) in the few minutes between when the box disappeared and reappeared while the boy stood in the minefield.

✓ Had the Doctor resolved differently, killing the boy Davros, a paradox would have been created that unraveled the entire series from the second serial (1963) onward.

The TARDIS is perhaps the final and ultimate *Uber Alles* for whatever Era the Gallifreyians are in and serves as an example (for those familiar with Dr. Who) of the 'other direction' to which 2nd and 3rd Era civilizations might have access which we cannot see in the same way that a 17th Century watchmaker would not have imagined Dick Tracey-like iPhone watches.

"This seems to be the law of progress in everything we do; it moves along a spiral rather than a perpendicular; we seem to be actually going out of the way, and yet it turns out that we were really moving upward all the time."

– Frances E. Willard

Bottle Spin Whac-a-Mole: Ms. Willard was playing the game of whac-a-mole discussed in 4 Culture, p. 404, *supra*. The mole was rampant alcohol consumption, she was a late 19th Century temperance campaigner and women's suffragist. In the process, she used careless rhetoric that made alcoholism a racial issue instead of a holistic issue, and bumped up hard against the rising Civil Rights movement. The Temperance Movement had the bigger mallet just then, but peaked, whacked the mole, and imploded, leaving the stage to those trying to whack the mole of racism.

✓ To understand Ms. Willard's reference, envision climbing a spiral staircase instead of taking an elevator that moves perpendicular to the ground to reach your destination.

Every half turn along the spiral stair, you are seeming to be moving in the wrong direction horizontally, but you are still climbing up. Whereas in an elevator, you look bored, listen to elevator music, and check your voice mail, Twitter, or text messages.

✓ The implosion of the Temperance Movement following the Prohibition Era is discussed in Flying the Banner, 4 Government Titles, p. 632, *supra*.

Spiral-Perpendicular Discussions: How to visualize an emergence? The simplest way is a pair of perpendicular lines joined, the emergence is moving off at 'right angles' from the origin.[3] But that is a crude two-dimensional representation. What is the three-dimensional equivalent?

This is the same as the question asked by Kip Thorne who was the science consultant for Interstellar (2016): We have been picturing black holes as two-dimensional objects on the 'surface' of space (like a whirlpool on the surface of the water), but in the process of working on the film, he asked, what is a circle in three dimensions? A sphere.[4]

✓ Three-dimensional space is not likely even the proper means to envision an emergence, since there is necessarily a time element to it. Likely then the real question is what is a perpendicular pair of lines in three-dimensional space with forward time effect. That is way beyond my topology, but visualizations I have seen of a spatial movement in time have been shown as a spiral or helix in an attempt to display a fourth dimension of movement (on a two dimensional page). Like Ms. Willard's spiral staircase, instead of a perpendicular elevator.

✓ But here's the thing: Kip Thorne wasn't asked to explain why the universe is 'designed' or evolved so that black holes exist. He was asked to provide scientific thought on how to accurately portray a black hole in a film, and from that sprang certain insights that apparently had not occurred to anyone before his team tried to accurately visualize a black hole on film.[5] Likewise, GGDM only has to simulate emergent technology in a game. Thus only a vision of the concept is needed.

There is a parallel sense between what Kip Thorne did for the movie Interstellar (2016) and what I have done in GGDM, see The Problem of Immersion discussion 1 Culture, p. 352, *supra*. The difference is one of orders of nature, differences in perceived empirical respectability between first and fourth order knowledge, resources and current cultural interests in the topics.

✓ "[Dr. Who] was created to fill a gap between children's and young adult programming." – from Wikipedia article, "An Unearthly Child." "The programme was originally intended to appeal to a family audience as an educational programme using time travel as a means to explore scientific ideas and famous moments in history." – from Wikipedia article, "Dr. Who." Dr. Who has moved a long way from its intended 'no bug-eyed monsters' function; time-travel fiction cannot help but to be existential, and when the existential is avoided, it just becomes silliness. GGDM's evolution over time has paralleled that of Dr. Who, conversations about civilization cannot help but to become existential; when avoided, they just become gloss and cliché.

➢ Uber Emergents: Each Uber Alles consists of two parts, one is related to activation of the Technology Power and the second is not related directly to the Technology Power. The pairing of Technology Power and non-Technology Power effects provides endless interesting combinations of effects (with no explanation necessary, it is effectively 'magic') and sufficiently simulates the perpendicular nature of emergences. Ten pregenerated Uber Alles are

provided for each category so that the Concierge may simply generate – either randomly or by considered choices – new Uber Alles pairs for each Era. It may also be possible for participants to create new Uber Alles effects.

➢ Diagonal Play: Imagine playing a game of chess or checkers without diagonal movement? The knight is a pretty darned good piece, but is very limited, imagine a game without bishops or pawn captures? There is probably a sociopolitical reason why bishops move diagonally.

  ✓ I play Hashira, a tile falling game like Tetris (there is a "Let's Play Hashira" video on YouTube). One of the keys to my modest success (I have barely topped 100,000 points a couple of times) is playing the diagonals. I first noticed that exploiting diagonals tended to 'fix' problems with the current board, bringing things into alignment and sometimes creating chain reaction eliminations. As I became more cognizant, I understood that chain reactions are extremely important not only for scoring, but for keeping the board from filling up which ends the game. I became more aggressive, creating diagonals instead of letting them occur naturally, it works as long as it is integrated with the other plays and the cat doesn't jump on your desk and hit your face with his tail while you are trying to play – the universe engages in diagonal plays too!

To humans, diagonal represents the 'other direction' in a two-dimensional game that we import into our lives in thinking about our time and space and future possibilities.

  ✓ Cats are a little short on cause and effect; there is no way I can make him understand that whatever I am doing with my hands has anything to do with what is occurring on the computer screen in front of me, or of any importance to what he wants at the moment, and he doesn't care (i.e. has no reason to look). Comprehending causality and caring outside ourselves (even for selfish reasons) are both diagonals of sapience (and the super-organic) that we teach children.

"Finnerty shook his head. 'He'd pull me back into the center, and I want to stay as close to the edge as I can without going over. Out on the edge you see all kinds of things you can't see from the center.' He nodded, 'Big, undreamed-of things – the people on the edge see them first.'"

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"It was an appalling thought, to be so well-integrated into the machinery of society and history as to be able to move in only one plane, and along one line."

– Kurt Vonnegut, Player Piano (1952)

Player Piano: The receipt of one Act or Scene per undisrupted Government Title (see On the Soapbox, 3 The Sidereal Stage, p. 122, *supra*) is intended to be a challenging management problem for most of the game. Scarcity leads to discipline and innovation. It is also intended to realistically – if that is possible – represent the complexity and political will of nascent interstellar civilizations. But, of course, at some point the limit may become an impediment to the game.

  ✓ Scenes especially represent inbuilt systemic inefficiencies: The larger a position becomes, the lower the percentage of colonies (and population) that will be subject to Power Activations each Regular Turn (or regularly), like being the only child vs. being one of ten; many familial problems are caused when the only child is no longer.

➢ <u>More or Less</u>: Technology has multiplied the effectiveness of each person in doing a job. For example, half a century ago, each attorney had a secretary who filed, took phone calls and spent much of the day typing from a Dictaphone.

✓ Emperor Napoleon I had a dozen male secretaries, who would take turns in his office scribing letters as he dictated them. Napoleon Bonaparte dictated letters, laws, orders, dispatches, for 12 or more hours a day.

✓ Adolf Hitler had four female secretaries.

Now one secretary works for multiple attorneys, some attorneys do not have secretaries, much is done by email, and most young attorneys are proficient at doing their own typing and formatting. Legal research is done online, instead of the associate going to the law library or the firm keeping an expensive hardbound law library which takes up office space.[6]

✓ But we all still have the same amount of minutes in a day. What technology does – theoretically – is to allow us to do more in the same amount of time. Many would dispute the truth of that, and say what we have to do in a day has simply shifted or that the newfound time has been quickly filled with other complexities. Because to add technology to solve problems is to add layers of complexity (*à la* Joseph Tainter).

The scarcity of Acts and Scenes and Power Activations in GGDM should be interpreted as a time function, a day in the life of a civilization. Since we all still have the same number of minutes in a day as each person had in the Middle Ages, participants should be *very careful* about changing the established rules on Acts, Scenes and Power Activations. The most direct way to gain time in a day is time travel, if you could be in two places at once, even for short times, you could make your day into 25, 26, 30 hours. It may also be possible that time gained from the multiplying effect of technology does outstrip the additional complexity so that there is some modern benefit (which explains the apparent acceleration of our lives), and that certainly might be the case with the technology assumed to exist in GGDM.

Within GGDM, the Concierge may optionally, allow more Acts and Scenes to positions that have reached the 2nd Era, for example, one Act plus one Act or Scene received per undisrupted Government Title. And in the 3rd Era, either two Acts or two Scenes (a choice to keep it interesting) received per undisrupted Government Title. This would definitely separate positions of different Eras *by an order of magnitude* and provide positions with an incentive to advance quickly through the technology Eras. It would also penalize positions that fall behind, like the fictional medieval state in the modern world in Leonard Wibberley's 1955 novel, <u>The Mouse that Roared</u>.

This does not equate to a position receiving more ***Power Activations*** in a Regular Turn (cf. Gone with the Wind discussion in 1 Government Titles, p. 582, *supra*); extra Acts and Scenes represent only the *power of opportunity* – technology and 'advanced cultural sophistication.' Early in the game, there will be turns where positions do not use all Power Activations, either holding back building-up for expensive Power Activations or because they have expended Acts and Scenes in a flurry of activity. The effect of the extra Acts and Scenes will be fuller use of available Power Activations, less fear of more expensive Power Activations.

✓ See additional scarcity discussions, Shoestring Production, 3 The Sidereal Stage, p. 122, *supra*, and Corporation Games, 1 Corporations, p. 1243, *infra*.

➢ <u>Technological Unemployment</u>: Everyone knows that when employers can pay less people to do the same work, they will; long term savings is the selling point of capital investment and software upgrades, social responsibility much less so. This is generally called Technological Unemployment, and demonstrates that the increase in productivity which leads to additional Acts and Scenes is also an opportunity for creative Interventions by the Concierge.

Generally technological progress has been a see-saw ride, each person can do more, but with explosive growth in populations and complexity, and knowledge, there is much more to be done as well. This pattern is well established. As Joseph Tainter notes, improvements in agriculture in the Proto- and Pre-Classical times to solve the food problem only resulted in increases in population, starting the cycle over again (see 2 Government Titles, EN 9, p. 604, *supra*, for full quote).

    ✓ "Cultural factors that develop independently from environment are the wildcards that have made history unpredictable. The use of the QWERTY keyboard and Chinese pictographic writing represent cultural developments independent of environment that have actually had relatively negative effects on societies – our inefficient typing system and the lower levels of Chinese literacy due to the difficulties of their writing system." – Jared Diamond, <u>Summary of Guns, Germs, and Steel</u> (2017), pp. 45-46, Kindle Edition.

Technology multiplies the power of individuals in all endeavors, but also multiplies the complexities and demands of our civilization. GGDM civilizations are likely not immune from all of that.

The relationship of technology, social change, unemployment, capitalization and economics is a huge and hotly-contested intricate subject into which participants can delve on their own. Charles Dickens wrote during the time in which England was being most affected by the Industrial Revolution (see Gradgrind, 1 Colleges, p. 463, *supra*), but the process of enclosures, tenancies, and population shift to urban areas had already begun two centuries before with the Agricultural Revolution intensification that allowed less farm workers to produce more food per acre, and additionally, to work more farmland (see enclosure discussion and Raymond Birn quote in 3 Reformation, EN 3, pp. 1404, 1412, *infra*). The most famous starting point in the debate are the so-called Neo-Luddites, named after the Luddites of the 19th Century; the Luddites were also an anti-technology faction in a science-fiction space wargame (called Third Foundation) I played long, long ago! But there are many arguments across many disciplines on this, the most important socioeconomic subject of the 20th Century.

    ✓ "Anita had the mechanics of marriage down pat, even to the subtlest conventions. If her approach was disturbingly rational, systematic, she was thorough enough to turn out a credible counterfeit of warmth." – Kurt Vonnegut, <u>Player Piano</u> (1952).

➢ <u>Watching the Wheels Go Round and Round</u>: There are other thresholds for increasing Acts and Scenes which might define a new Era of the game or for a position, in a non-technological sense. For example, the Concierge may determine that all positions get the first increase in Acts and Scenes after Turn 20 and maybe the second increase after Turn 40 or 60, if the game lasts that long. Or the increase may be based on position population thresholds, such as 300, 500, or 1000 total population factors on Converted, Friendly and Naturalized Colonies.

Other possible markers for the end of an age in GGDM, might include all positions having made First Contact (see A Bump in the Night, 1 Diplomacy, p. 1099, *infra*), or perhaps radical shifts in Structural Government Titles (see Home-Wreckers, 6 Government Titles, p. 651, *supra*). Or possibly even physical extinction of one or more of the Major Races in the Galactic Space (see Countdown to Extinction, 1 Resolution, p. 1462, *infra*). Most likely, a combination of factors will be in play.

There are also many hybrid thresholds that might be devised. Inherent in GGDM, as with most competitive games, is the potential for the big to get bigger, the rich to get richer and everyone else to get smaller and poorer (or drift away), and the first positions to gain the extra Acts and Scenes will have a definite advantage over the long term. The participants will need to decide what sort of game they like, what flavor to add to their own GGDM game.

"The French and Hussites had already demonstrated the power of artillery in the field, and now the fall of Constantinople gave proof that the mightiest walls no longer offered a refuge against gunpowder. Yet that May morning in 1453 is remembered as more than a tactical landmark. For a last spiritual link with the ancient world had been broken, and henceforward men would feel free to turn their eyes toward the future rather than the past."

– Lynn Montross, <u>War Through the Ages</u> (3rd Ed., 1960), p. 195

<u>Bulwark of the Past</u>: Constantinople was the most powerful city in Europe for most of the Middle Ages. The Crusades passed through and became entangled in Constantinople, the Fourth Crusade attacked and sacked the city in 1204, destroying or carrying off countless historical treasures that are now lost. Constantinople was the last link to the Roman Empire and the Classical Ages. It could be considered a *Symbolic Constructural Element* in GGDM terms, within the worldview of 'feudal Europe.' Conquest of Constantinople (renamed Istanbul) also provided a gateway to Europe allowing the Ottomans to conquer all the way to Hungary; the Habsburg-Ottoman-Polish contest over two centuries shaped modern Eastern Europe, especially Romania.

✓ "After the sack, many feared other European Christian kingdoms would suffer the same fate as Constantinople. Two possible responses emerged amongst the humanists and churchmen of that era: Crusade or dialogue. Pope Pius II strongly advocated for another Crusade, while Nicholas of Cusa supported engaging in a dialogue with the Ottomans. The Morean (Peloponnesian) fortress of Mystras, where Constantine's brothers Thomas and Demetrius ruled, constantly in conflict with each other and knowing that Mehmed would eventually invade them as well, held out until 1460. Long before the fall of Constantinople, Demetrius had fought for the throne with Thomas, Constantine, and their other brothers John and Theodore.

Thomas escaped to Rome when the Ottomans invaded Morea while Demetrius expected to rule a puppet state, but instead was imprisoned and remained there for the rest of his life. In Rome, Thomas and his family received some monetary support from the Pope and other Western rulers as Byzantine emperor in exile, until 1503. In 1461 the independent Byzantine state in Trebizond fell to Mehmed." – from Wikipedia article, "Fall of Constantinople," captured August 12, 2019.

Thomas died in 1465 and his son (and royal beggar) Andreas Palaiologos (brother of Sophia (Zoe Palaiologina) whose marriage to Ivan III of Moscow was arranged by the Pope) sold his crown and all rights in 1494 to the King of France. Had Constantinople been 'liberated' after 1494, it would have been claimed by Charles VIII of France and several French kings thereafter claimed to be Emperor of Constantinople (for what it was worth) until 1566 (at which time the claim was considered extinct and pointless). Andreas Palaiologos allegedly sold his crown and rights a second time to Queen Isabella I of Castile and King Ferdinand II of Aragon (of Christopher Columbus fame).[7] Despite all, he died in poverty in Rome in 1502 and no members of his family claimed right to Emperor of the East. Just like the last Western Roman Emperor.

> *"The pomp of chivalry had increased in proportion to its weakness, and at Agincourt in 1415, the French host of 40,000 was literally an army with banners. But even though a pennon or standard fluttered over every contingent, the display only served to commemorate one of the last great efforts of a dying feudal age."* – Lynn Montross, <u>War Through the Ages</u> (3rd Ed., 1960), p. 182

A Dying Age: All of the things that we know gradually and collectively marked the end of the Middle Ages would not have been apparent to the combatants at Agincourt as they trudged through the mud on a soggy cool fall day in 1415. Not one person present would have had reason to think that the world as they knew it would not go on forever (or at least into the time of their grandchildren's children, which is the same as forever for most people) unchanging.

There were reportedly some primitive cannons and handguns at Agincourt, but not enough to be more than a noisy curiosity. The walls of Constantinople were yet to be battered down by Turkish cannons (in 1453), rendering all castles and fortified cities in Europe vulnerable to the same fate as the power of cannons improved over the next century (and leading to the centralization of government power). The Portuguese had not yet reached India (in 1498), and as we all learned in school, Columbus had not yet discovered the New World (in 1492).[8] The War of the Roses was still 40 years in the future, two generations hence. Sir Francis Bacon wasn't to be born for another 145 years, and his vision had to wait another century after his death to emerge.

The events that might have been worrisome to the sages of the age would have been the Black Death, which passed through France, reaching England in about 1349-1350, a dark, continuing nightmare for which there seemed no cure and no end. The very concerning Western Schism of the Papacy (1378-1417) was finally nearing an end in 1415. And the last part that would have concerned the sages of the day, the Ottoman advance into the Balkans around the ailing, feeble Byzantine Empire,[9] and the ultimate failure of the Crusader States in the Holy Land and Cyprus.

So here we have a balance of things:

1) Those things that would have been the worldview of the participants on the ground at the time,

2) Those things that we know from hindsight, that historians glowingly state led inexorably to the end of the age or era in question, and

3) Those signs and events that would have been known and worrisome to the wiser and more educated minority of the time.

GGDM is a game (like any of this kind) during which the civilizations (both collectively and individually) may seem to pass through ages;[10] most likely, those ages will be tied approximately to the progression of Technological Eras. And as noted previously, there will be those who see an age coming to an end, those historians who will retroactively mark the end of an age in glowing, finalistic terms, and those on the ground – the ship crews, the colony populations, the soldiers, the explorers, the governments, the corporate types – who think that their current lifestyles will go on forever, generation after generation. It is an important distinction to remember when participating in GGDM that what the players or Concierge may know or see as the approach of the end of an age should not necessarily affect the people on the ground.

At the bottom of much of space-opera and solar system colonization science-fiction literature is the coming-of-age idea of leaving the nest and wandering afar in the galaxy.

> ✓ **Prof. Brand:** So how do you plan on saving the world? **Cooper:** We're not meant to save the world, we're meant to leave it. – Interstellar (2014).

Age and Era are distinguished here only because GGDM uses Eras for Technological Progression. Out in the wild, wide world, the two terms are often used interchangeably, and carelessly.

> ➢ Crusade: Many people bristle now at the mention of 'crusade,' thinking it an anti-Islamic term, and Islamic extremist exploit that idea with their propaganda. In other times, 'crusade' in English has been disassociated from its historical roots and simply means a great, ongoing focused effort, usually against some perceived medical or social problem (another name for the game of whac-a-mole). Historically however, a 'crusade' (a term not invented in English until after 1700 A.D. according to Merriam-Webster online dictionary) was used generally by the Roman Catholic bloc against anyone who wasn't part of Roman Catholic Europe, for example, the Northern Crusades against the Eastern Orthodox Church and various Slavic pagans, or against heresy, such as the Albigensian Crusade against the Cathars in the County of Toulouse and against the Crown of Aragon in Southern France. While crusade is an offensive term in this respect, it is because of militant religious expansion and suppression against *anyone* who didn't share the Roman Catholic beliefs or submit to the Lords Spiritual of Western Europe.

"Her freenom, Gupta, she chose homage a Sanjiro Gupta, an ark administrator of the early First Starfaring Age, who left the system of Sol with a consignment of stellar colonists dredged up from the deepest political dungeons of a consortium of sponsoring national governments, and arrived three generations later as the guiding memory of the sanest political system of the day, the forerunner of our modern transtellar society. Though this model colony ship society did not long survive planetary dispersion, and the proto-Lingo that had evolved soon began to break down into its constituent sprachs, it was Sanjiro Gupta who tossed the first pebble of modernity into the dark pool of that chauvin-ridden age, whose time-amplified ripples are the social mantra of our day." – Norman Spinrad, The Void Captain's Tale, p. 10, Kindle Edition

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Second Starfaring Age: Norman Spinrad published two books (The Void Captain's Tale (1983) and Child of Fortune (1985)) set in the Second Starfaring Age, 3,000 years in the future (the same number is used in the 2016 movie Arrival, a possible nod to Spinrad).

It is clear from his history that the First Starfaring Age consisted of sub-light generational starships. The Second Starfaring Age started with the discovery of the Jump Circuit, from alien

technologies left behind by We Who Have Gone Before (similar to the later Babylon 5 television series, 1993 to 1998, and Race for the Galaxy card game, 2007).

It would be very interesting if Mr. Spinrad were to write even a short story or short novel describing – in his own inimitable manner – how the Jump Circuit was discovered. Mr. Spinrad is one of the few science fiction writers to write challenging novels set in a very distant, very different future trans-stellar civilization.

Sanjiro Gupta is the Sir Francis Bacon of Spinrad's First Starfaring Age. "Proto-Lingo" is the forerunner to some sort of trans-stellar human language that Spinrad attempts to simulate in his Second Starfaring Age books by mixing about 20% foreign (European) words into English. This is a subject that is only lightly mentioned in GGDM, and sci-fi tends to sidestep the problem with gadgetry such as universal translators, telepathy, or just completely ignores the problem.

- ✓ Notably, Harry Harrison's 1964 short story, "Final Encounter" (discussed in Circumambulation, 1 Expansion, p. 875, *infra*) goes into some detail of an AI-assisted process of translating and reconciling two languages that are discovered to be from the same root Earth language, with hundreds of centuries of linguistic drift.
- ✓ The movie Bladerunner (1982) also gives a brief nod to the problem by mentioning a mash-up language, "Cityspeak" (invented by actor Edward James Olmos, something more substantial than a *street cant*), but then moves on as Cityspeak is just background, setting window dressing.

But considering that Afrikaans is only 350+ years separated from Dutch and already shows significant divergence; within the timescales of GGDM, this drift would soon become a major problem for interstellar civilizations. See Language Drift, 3 Entropy, p. 246, *supra*.

Since the 19th Century, various attempts have been made at forming a universal human language, or forming international auxiliary languages (IALs, 'auxlangs') with limited success – while the languages exist in theory (the most popular being Interlingua, Ido, and Esperanto), very few speak them and they are not easy to learn. Instead, the natural trend has been toward international standardization of existing languages spread by European colonialism (with the usual objections, of course), such as International English and Mediterranean Lingua Franca. What happens when we go to space?

"Every epoch dreams its successor"

– Jules Michelet (1798-1874), French Historian

Endnotes.

[1] Citation & Commentary: "From the verse *Deutschland, Deutschland über alles, über alles in der Welt* ('Germany above all, above all in the world'), from the German national anthem *Lied der Deutschen*, composed by Joseph Haydn in 1797. The verse originally meant that the Germans and their rulers have to overcome existing divisions and keep in mind the goal of a unified Germany." – From Wiktionary entry for "über alles," August 22, 2018 (italics in original). Like any politicized phrase, there are various claims; some claim that the Allies in WWII deliberately mistranslated it for propaganda purposes, others claim that the meaning is a myth. The various inane arguments will not be repeated here (as they are irrelevant to the instant purpose of this text), *Google It!*

[2] Commentary: The award-winning television mini-series, Longitude (2000), tells the story of the invention of the maritime chronometer by John Harrison in 1730 in competition for the prize offered by the Longitude Act of 1714. The film demonstrates an entire political and cultural struggle in early 18th Century England, between science and

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religion, astronomy and astrology, the needs of the Royal Navy (and the fact that no one had even determined the longitude of Jamaica before testing the maritime chronometer), leadership senility, and the entire English system's prejudice against a self-educated Scottish carpenter, John Harrison, winning the Longitude Prize.

[3] Commentary: I had been thinking about Uber Alles off and on for a few days. In mapping out the end route to finish GGDM in March 2019, I had realized that I still needed to create a half dozen Uber Alles, a task, unlike Government Titles or Fundamental Realities, that I had never previously tackled (that is, I had written both of them years ago and revised them during the final edit, so I had at least a concept in mind). For Uber Alles, the question was, how do I simulate an emergence, at least a technological emergence? We have historical examples, which I have used in GGDM, but how do I translate those into a game which does not have a history?

- ✓ Late on March 10, 2019, I watched the movie Annihilation (2018). After I got up, all the sudden it clicked in my mind, the question of how do you visualize an emergence? Annihilation is a very strange movie, and I am glad to have seen it regardless of the subsequent outcome, but what happened in that moment of intuition a very few minutes after the movie? Does the movie contain some kind of *subliminal* messaging? Was it perhaps a practical demonstration of whatever a perpendicular line is in four dimensions? Most people think that time is a fourth dimension, see Humanity in a Box discussion 3 Reformations, p. 1407, *infra*.

  - ▪ Rhetorical Question: Does subliminal messaging work only if there is a 'teachable moment' in the viewer for that message? Or does it work regardless of whether the viewer has reached the 'teachable moment' for the message? See Teachable Moment, 1 Kairotic Moment, p. 1418, *infra*.

- ✓ The difficulty that the film Annihilation (2018) has with audiences is that the audiences don't think in terms of emergences; the concept is not enculturated yet, we think mainly in straight lines and causalities. The film is about an emergence. Though critics understood the mastery and the risks that the film took, it was considered a box office bomb in 2018; the audiences didn't get it.

  - ▪ Unfortunately, because this impressive adaptation of award-winning novels was a box office bomb (thanks to our current culture milieu), it is very unlikely that the second and third movies will be made in the Southern Reach trilogy (Paramount Pictures owns the movie rights for the entire series). It's that money thing again, the intellectual value of the work is irrelevant next to colorful big budget movies with big explosions, cool gadgets and effects, and empty-minded silliness (e.g., Star Trek 2009, Back to the Future trilogy, etc.).

  - ▪ I have tried very much to develop an internal image of what an emergence looks like, how to recognize them. I would never have thought of the idea behind the movie Annihilation any more than Charles Babbage would envision a modern PC but I could recognize the intent when I saw it, and that will have to do for now. It is like a late medieval painter trying to find another way to do art, who is presented with a humanist work of Raphael from two centuries in the future: We know that one led to the other, but placed side by side, they are clearly much different concepts.

[4] Citation: "Even black holes wear makeup in Hollywood. Last year's hit film Interstellar used real scientific equations to depict what happens when a team of space farers venture near a supermassive black hole. Now, a joint paper published in the journal Classical and Quantum Gravity from the movie's visual effects team and scientific consultant reveal that the real black hole ... was deemed too confusing for audiences, and some of the science had to be toned down. Interstellar's premise was first conceived by physicist Kip Thorne of the California Institute of Technology, who wanted to make a realistic movie about black holes. He got together with director and co-writer Christopher Nolan, and also with London-based visual effects studio Double Negative to create the movie's black hole, Gargantua. ... The most striking element of Interstellar's Gargantua is its accretion disc, the glowing ring of matter that encircles it. The team started out using a simple, rainbow-coloured flat disc to figure out how it would be warped by the black hole, then exchanged it for a more wispy disc with realistic colours. The result looked good, but the central black hole seemed to be squashed up against one side. That's because the movie's time dilation effects meant the black hole had to spin very fast, causing it to drag the light to one side. Nolan didn't like this asymmetry and thought moviegoers wouldn't understand why, so the team slowed it down, says James." – Jacob Aron, "Interstellar's True Black Hole is Too Confusing," New Scientist, February 13, 2015.

- ✓ "Kip Thorne looks into the black hole he helped create and thinks, 'Why, of course. That's what it would do.' This particular black hole is a simulation of unprecedented accuracy. It appears to spin at nearly the speed of light, dragging bits of the universe along with it. (That's gravity for you; relativity is superweird.) In theory it was once a star, but instead of fading or exploding, it collapsed like a failed soufflé into a tiny point of inescapable singularity. A glowing ring orbiting the spheroidal maelstrom seems to curve over the top and below the bottom simultaneously. All this is only natural, because weird things happen near black

holes. For example, their gravity is so strong that they bend the fabric of the universe. Einstein explained this: The more massive something is, the more gravity it produces. Objects like stars and black holes do this so powerfully that they actually bend light and pull space and time with it. And it gets weirder: If you were closer to a black hole than I was, our perceptions of space and time would diverge. Relatively speaking, time would seem to be going faster for me. What does Thorne see in there? He's an astrophysicist; his math guided the creation of this mesmerizing visual effect, the most accurate simulation ever of what a black hole would look like. It's the product of a year of work by 30 people and thousands of computers. And ... the simulation plays a central role in Interstellar, the prestige space travel epic directed by Christopher Nolan opening November 7. Thorne sees truth. Nolan, the consummate image maker, sees beauty. Black holes, even fictional ones, can warp perception." – Adam Rogers, "WRINKLES IN SPACETIME: The Warped Astrophysics of Interstellar," Wired.com, October 2014 (CAPS IN ORIGINAL).

[5] Commentary & Citation: After the movie, the scientific team published a paper in the journal *Classical and Quantum Gravity.*

[6] Commentary: My first job in a law firm was as a part-time law librarian, which involved insertion of pocket parts, hunting down missing books, setting up lunch seminars, and the people at Westlaw who hear only what they want.

[7] Commentary: A similar situation is the premise of the board game Nexus Ops (2005). An explorer sold the claim to a planet four times – to four massive spacefaring corporations. He disappeared with the goodies, and the four corporations went to war over control of the planet. Another wonderful Intervention idea for the Concierge.

[8] Commentary: Foreign colonization and trade lifted Europe out of general poverty, upset the European feudal economy, and most importantly, provided monarchs with a source of income not tied to the feudal system, thus allowing the building of national armies, and other initiatives that eventually consolidated power to the central government, and away from the feudal lords and guilds. Remember this when reading the Commerce section, later.

✓ See previously Why Europe and the West excerpt at the beginning of this section.

[9] Commentary & Citation: Lynn Montross, who was certainly aware of the criticism that his spiritual ancestor Edward Gibbon (The History of the Decline and Fall of the Roman Empire (pub. 1776-1788)) *had entirely neglected the important contributions of the Byzantine or East-Roman Empire*, used two chapters in War Through the Ages (3rd Ed., 1960) in paying handsome tribute to the accomplishments of Byzantine arms, diplomacy and strategic position. It was partially attributable to the Byzantine Empire that the Battle of Tours was fought in 732 A.D.

✓ This same criticism is true in movie-making; critics have noted that there are very few Hollywood movies that show Byzantines or that are about the Byzantine or East Roman Empire. It is as if the West, especially across the Atlantic, *has an inexplicable blind spot to that immense period of history* covering just about any history south of the Danube, except ancient Greece, or north, south or east of the Black Sea; there are hundreds of 'Roman' (as in Western Roman Empire) movies, many of which are considered classics of cinema (e.g., Ben Hur (1959), Quo Vadis (1951)). Movies about the Byzantines are more the subject of local nationalism, e.g., the Bulgarian movie, Khan Asparuh (1984) (heavily edited, reduced, released internationally as 681 AD: The Glory of Khan in 1984) made to mark the 1300th anniversary of Bulgarian nationalism.

✓ The 1968 West German movie, *Kampf um Rom* (aka The Last Roman) focusing on the intrigues between 6th Century Romans (who actually live in Rome), Ostrogoths, and a Byzantine General to reclaim Italy received poor critical reviews. Likewise, the very expensive 2016 Russian movie Viking, about Vladimir the Great, Prince of Novgorod (the Novgorod Republic remains dear to Russian nationalism) features some Byzantine diplomatic contacts and an attack on a Byzantine colony in Crimea, and was panned by critics.

[10] Citation & Commentary: "It was the dawn of the Third Age of Mankind..." – Babylon 5. At some point in the development of the game, I did consider creating a mechanic or cycle to mark the passage of ages or epochs. It was too arbitrary and the game didn't develop in that way, though some of the elements of the game – Technological Eras, and Reformations, and Kairotic Moments, *infra* – possibly evolved from the general idea of ages and epochs. Additionally, the whole general thrust of the game is toward epic civilization.

✓ "The scientific-technical revolution that reinvigorated the industrial revolution at the turn of the 20th century was not due to any one specific scientific discovery or single invention.... While some have named succeeding ages – coal, oil, nuclear energy (and since [Harry] Braverman, the computer and biological revolutions) – it is not these developments that clearly mark the age. Rather, the age can only be understood as one in which science and technology has become an adjunct to capitalism, an age in which science and technology are systematically developed, shaped and exploited to expand capital." – Frank Elwell, Macro Social Theory (2009), Kindle Edition, p. 60.

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