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"Certainly an inventor ought to be allowed a right to the benefit of his invention for some certain time. Nobody wishes more than I do that ingenuity should receive liberal encouragement. In the arts, and especially in the mechanical arts, many ingenious improvements are made in consequence of the patent right giving exclusive use of them for fourteen years."

– Thomas Jefferson [1]

Technosolution: Technosolution is the dogmatic unspoken belief (and ideology of modernity) of nascent industrialized technological societies that all problems, including social problems, will eventually be solved by *technology* (e.g., Bob Moser quote, bottom or Twilight Zone episode, "Number Twelve Looks Just Like You," 1964).[2] Technosolution is a special modern subset of Forward Expectations, see 1 Disruption, p. 255, *supra*. It is the core of scientific utopian dreams.

Technosolution seems to be related to scientism (like a non-identical twin), which term itself is an implied critique of exaggerated expectation of *science* in the realm of human affairs; Case, Diamond, Elwell, and others featured previously argue against scientism in their own ways:

- ✓ Merriam-Webster online dictionary at *scientism*: **2:** an exaggerated trust in the efficacy of the methods of natural science applied to all areas of investigation (as in philosophy, the social sciences, and the humanities). First use was in 1870.
- ✓ "Scientism is the promotion of science as the best or only objective means by which society should determine normative and epistemological values. The term scientism is generally used critically, implying a cosmetic application of science in unwarranted situations considered not amenable to application of the scientific method or similar scientific standards. ... In the philosophy of science, the term scientism frequently implies a critique of the more extreme expressions of logical positivism..." – from Wikipedia article, "Scientism," captured April 23, 2020.
- ✓ "The roots of scientism extend as far back as early 17th century Europe, an era that came to be known as the Scientific Revolution. Up to that point, most scholars had been highly deferent to intellectual tradition, largely a combination of Judeo-Christian scripture and ancient Greek philosophy. But a torrent of new learning during the late Renaissance began to challenge the authority of the ancients, and long-established intellectual foundations began to crack. The Englishman Francis Bacon, the Frenchman Rene Descartes, and the Italian Galileo Galilei spearheaded an international movement proclaiming a new foundation for learning, one that involved careful scrutiny of nature instead of analysis of ancient texts." – Thomas Burnette, "What is Scientism," American Association for the Advancement of Science (AAAS), undated.

- History Patented: During the development of modern Europe, every sovereign struggled with the instinctive need and urges to control a phenomenon they barely understood. There were a lot of moving parts to this problem – and states both feared and needed the powder keg potential of the new European obsession with tinkering on which they sat. The Republic of Venice is held to have issued the first statutory patent system in 1450, the basic principles of which still exist today in all patent systems. The English monarch (and probably others) issued patent decrees which amounted to Crown monopolies until 1624 when all monopolies were revoked by the Statute of Monopolies.

The first U.S. Patent Law was passed in 1790, (Colonial Legislatures issued individual patents before the Revolution) and the first French Patent law was established in 1791. Throughout the 18th Century, patent law was refined to require public specification in patents, to allow patents for improvement to existing machines and processes, and in the 19th Century, the addition of patent examination. Finally, in the 18th Century, governments, who had previously been pushed and jostled along by technological developments, affirmatively embraced and encouraged technology advances, often and usually, for the advancement of their struggles with rival nations.

- ✓ George III of England (reigned 1760-1801), much maligned in the Thirteen Colonies, may have been one of the first monarchs to have a keen interest in and understanding of science and technology; he was mocked in the press for his interest in mundane matters, such as agriculture. The expectation of being titled and proudly useless was already established in Europe, see Arrears in Aristos discussion, top of 2 Entropy, p. 234, *supra*. He is also the first of the House of Hanover kings born and raised in England, who spoke native English. George I and II were born in Germany and had to learn English.
- ✓ Some fact information gleaned from Wikipedia article, "Patents," March 16, 2018.
- ✓ See discussion of the Longitude Act of 1714 and Mr. Harrison's invention, 2 Eras, EN 2, p. 776, *infra*. The Longitude Act prize seems to be a sea change in sociopolitical acceptance of technology, at least as to the Anglo-sphere.

"In 1972, the federal government even blessed the emerging field of futurism with a new research agency, the congressional Office of Technology Assessment, which reviewed proposed legislation for its long-term effects. Futurists were optimistic about lawmakers' new interest in the long term.... Newt Gingrich has long been enamored of science fiction – he wants to build a moon base. But when Mr. Gingrich, a Georgia Republican, became speaker of the House in 1995, he quickly shut down the Office of Technology Assessment. The government no longer had any place for futurists, and every decision about the future was viewed through the unforgiving lens of partisan politics....

'It is ridiculous that the United States is one of the only nations of our size and scope in the world that no longer has an office that is dedicated to rigorous, nonpartisan research about the future,' Ms. [Amy] Webb [founder of Future Today Institute, Prof. NYU Stern School of Business] said. 'The fact that we don't do that is insane.'"

– Farhad Manjoo, "Why We Need to Pick Up Alvin Toffler's Torch," New York Times, July 6, 2016

<u>So Comes the Future</u>: People 'know' you shouldn't drive drunk, but they do anyway. They make it home and it's all right, so they forget about it. Then one day, they don't make it home driving drunk and everything is never going to be all right ever again. So comes the future.

- ✓ It's *insane* to drive drunk, you are a danger to yourself and others, and that's why they toss you in a cell. Maybe that's why we are still on Earth, humanity is a danger to itself and others. We confine people to jail and mental hospitals (and euthanize sick animals) for that very reason.

The Patent Process: The Patent is the process by which players may create and introduce new milestone technologies into the game in relation to the position's technology grid (i.e. Matrix). A Patent is an Interpretation, and a successful Patent – which is not published – must be used as the Interpretation accompanying the Technology Power activation used to prosecute the successful Patent on the Regular Turn it is introduced. If the Patent is not successfully prosecuted, a News Event must be used as the Interpretation for the Technology Power on that turn (though what the News Event reports is up to the players). Both must be provided with the position's Regular Turn actions.

It costs a lot of RPs, Acts, and Power Activations to get to the new Patent prosecution. Players should carefully consider the proposed Patent so as to create a useful, game-changing technology. All the basic technologies of interstellar civilizations are already present in the Existential Patents. So go for something crazy; Patents should be non-trivial.

- ✓ For example, the baseline against which to compare the Existential Patents is nothingness; they create 'things' in the game by their existence and that is non-trivial to the game. One might naturally also compare them to our early 21st Century technology.

While it is hard to estimate during the game design, probably each position may successfully prosecute 6-10 *original* (i.e. non-Existential) Patents per game. Taken together then, all of the Patents of all of the positions in the game may advance interstellar technology significantly.

- ✓ There is a video on PBS Space Time channel titled, "Should we build a Dyson sphere?" We cannot. We wouldn't even be able to start. We don't have the resources or technology and possibly won't ever. So I don't understand the question?

- The Patent Application: To begin the Patent process, the proposed Patent must be submitted to the Concierge with the position's Actions, and the Technology Power must be activated on the same Regular Turn for the purpose of Patent Prosecution. The proposed Patent must contain all of the elements of the Patent, except the User Manual, at the time of the submission. Other than the Power Activation cost, there is no other cost to prosecute a Patent Application.
- Patently Different: Patents in GGDM, unlike real world patents, never expire during the game, and only their secrecy grants the holder exclusive rights – until they are reverse engineered or shared.

  - ✓ For example, Delenn offered to share Minbari anti-gravity technology with other races in the press conference in the Babylon 5 episode, "Rising Star" (1997), to entice them to join the Interstellar Alliance.

  Also, Patents in GGDM are non-commercial, so many of the real world issues, such as submarining patents, patent thickets, patent ambushes, are avoided; there is no basis in GGDM for making a claim against another position due to 'patent infringement.' Thus, Patent as used in GGDM has only the loosest relationship with the concept as understood in the real world (see feature quotes, endnotes, and Violating the Laws of Man and Nature, 3 Temporal Technology, top of p. 828, *infra*, for discussion) and the game depends upon the Concierge to keep it all reasonable and consistent.

  - ✓ The stark difference between real world patents and GGDM patents is this: a real world patent describes something that works or is projected to work (i.e. not in violation of any established scientific principles) and would do so regardless of whether or not it is patented; whereas, a GGDM Patent describes the operational qualities of

game objects and those game objects cannot exist without a successful GGDM Patent Prosecution. And the scientific principles? ... well, they are optional.

"The books of the Ionian scientists are entirely lost. Their views were suppressed, ridiculed and forgotten by the Platonists and by the Christians who adopted much of the philosophy of Plato." – Carl Sagan, Cosmos, Episode 7 [3]

Existential Patents: It is assumed that all positions in the game represent some technologically advanced society and that each position enters the game with the necessary technological background required to engage in interstellar colonization and culture. These existential technologies are represented by a special type of Patent, the Existential Patents, that are available for purchase using Inheritance Points during the game set up.

- ✓ See Patents for Sale, 7 Beginnings, p. 72, *supra*, for 'purchase' of Existential Patents through Applications during the setup process. The Existential Patents serve as a rules and setting nexus connecting Beginnings, Technology, Patents and Eras.
- ✓ Positions receive, in addition to the Existential Patent, one or two Applications to place on the Matrix from the Patent's Theory. This represents a sort of 'crossing the threshold' to the 1st Era, most of the Existential Patent technology is pre-1st Era, with the addition of a couple of nifty inventions, discoveries, or innovations.

The Existential Patents are the only 'pregame' technologies allowed, players may only develop new technologies after the game starts. The game can run on the Existential Patents alone; the Patent process allows players to shape the technology of the game and/or improve Existential Patents. The Existential Patents are provided in Appendix EPAT.

- ✓ One of the most immediately notable differences between the original Star Trek *Enterprise* and Star Trek: The Next Generation *Enterprise* – I recall this as my first impression on seeing ST TNG – was the feel and look of the ship design, especially the bridge. The Next Generation series felt relaxed, comfortable (sometimes too slick and particle-of-the week comfortable), accepting of technology, whereas the original Star Trek was always gadgety, Spartan, and, like the audience, not quite comfortable with technology. As soon as I began watching The Next Generation, the original Star Trek that I had grown up loyally watching on PBS instantly seemed clunky and old.

- ➢ Patent on Posterity: It is impossible for any position to 'purchase' all of the Existential Patents with their Inheritance Points (IPs, not to be confused with, Resource Points/RPs). Any Existential Patent not obtained during set up **may not** be later 'purchased' by any means, but must be submitted, and processed as a regular Patent by any position once that position has the correct alignment of Applications on the 1st Era Matrix required by the Patent.
  - ✓ As will be explained later in 1 Eras, all Existential Patents must be completed to advance to the 2nd Era of technology. A position should start with as many Existential Patents as possible and is initially restricted from prosecuting new Patents.
  - ✓ See Temples of Science, 1 Technologies, p. 690, *supra*, and The Matrix, 1 Eras, p. 756, *infra*, regarding the Era Matrix.
- ➢ Needful Things: There is somewhat of an order of precedence among the Existential Patents, for example, it would not do a position any good to have the Scout Ship or 1st Era Warship

Existential Patent, before having the Generic Stardrive Existential Patent and Ship Systems Existential Patent. A position could begin *slow* with Generic Stardrive Existential Patent and Scout Ship Existential Patent, without having the Ship Systems Existential Patent.

- ✓ See 2 Stardrive and 3 Movement generally, *infra*, for the Existential Patents mentioned in this section.

"The toe bone's connected to the foot bone,
The foot bone's connected to the ankle bone,
The ankle bone's connected to the leg bone,
Now shake dem skeleton bones!
The leg bone's connected to the knee bone,
The knee bone's connected to the thigh bone,
The thigh bone's connected to the hip bone,
Now shake dem skeleton bones!"

– James Weldon Johnson & J. Rosamond Johnson, "Dem Bones" (1928)

The Parts of a Patent: A Patent form consists of five parts (see Appendix EPAT1 for samples of Patent formats), as follows:

- Theory: The Patent must specify the Matrix location and research type of at least two Applications currently on the position's current Era Matrix. The number of Applications specified will depend on various factors, such as the Operational Qualities of the Patent, the Applications available, and other possible factors.
  - ✓ All Applications specified on the Patent must be adjacent on the Matrix and must be in the precise order specified on the proposed Patent. This is more bothersome with Existential Patents, players have more freedom with their own Patents.
  - ✓ Any two Applications on the proposed Patent may be **confirmed or unconfirmed** (see below); confirmed Applications make it more likely the Patent will be successful, but there are other balancing factors that weigh in favor of trying unconfirmed Applications.
  - ✓ *A single Application may be used for any number of Patents, if its Matrix position allows* but cannot be used twice in the same Patent. Clever players will form Patents looking at lines of Applications already existing on the Matrix.
    - See 3 Patents, p. 747, *infra*, for 'connecting the dots' to make a Patent.
- Operational Quality: There are four possible Operational Qualities for any technology: Physical Item Technologies (PITs), Enhancement Technologies (ETs), Continuous Operational Technologies (COTs), and Technological Devices (TDs). Each Patent must specify only one Operational Quality. The type of technology chosen for the Patent is the major controlling factor for the number of Applications, the Effects, and Cost of the Patent.
  - ✓ Operational Qualities will be discussed in greater detail in the next part, 2 Patents. All that is important at this point in the rules is that it is a required part of the Patent and affects other parts of the Patent.

- Effects: The Patent must specify a number of Effects of the technology equal to the number of Applications *minus one*. Each Effect of the technology is a short, straightforward description, without qualifications or reservations (simple sentences), of the operational capabilities – of what the new technology is 'supposed to do.' For each Effect, the Patent must specify one Application type from Applications section, followed by the statement, and the Effect statement must be reasonably related to the Application type. Together, the short, simple statements of Effects, must form a group picture of the technology that is reasonably complete and can be readily understood by the Concierge. See Appendix EPAT1 for examples.
- eXistenZ: Any Patent which gives the ability to construct a new thing in the game (and by extension, introduces a new physical thing to the game), must begin with a statement creating the existence of the thing and the Power Activation required to build it. Additionally, any activity relating to the new thing must contain a statement as to the Power Activation required for that activity to occur. Not all Patents create new things in the game.
    - ✓ A tribute to the 1999 movie eXistenZ, which aired on Sci-Fi Channel, that was written and directed by the same person who wrote and directed the 1983 surreal movie Videodrome that I watched in the theatre when I was 15 years old. It is somewhat shocking now that I was able to buy the movie ticket by myself, I think the movie was definitely rated R; there was no accompanying adult supervision.
- Costs: The costs are the balancing factors of the technology. There are two types of costs. All costs sections must contain a cost per unit or a cost of implementing the technology, expressed in RPs, which is based on the chosen Operational Qualities. In short, if the Patent were for a new type of ship, it would require that the cost of building each ship of that type be part of the Cost section of the Patent.
    - ✓ The second type of 'Cost' is one limiting (negative, converse, offsetting) statement, corresponding to each of the Effect statements. The Cost statements must be in the same general form (straightforward, simple statements) as the Effect statements and correspond one for one to the Effects. See Appendix EPAT1 for examples.
- User Manual: The User Manual consists of the operational notes and rulings of the Concierge to flesh out the technology as the game progresses. Players may submit in the User Manual suggestions as to how the technology will operate in the game, but the Concierge is not bound by any such suggestions. Further, the Concierge will not make or offer any advanced rulings on how the technology will operate in any given situation; notes will only be added to the User Manual as necessary, as situations arise that require an interpretive ruling.
- Patent Truths: All of the statements of the Effects, Costs, and User Manual sections are assumed to be absolutely true unless they are designated as absolutely false. Statements on the Patent may each only be either absolutely true or absolutely false. Patents are official Interpretations and like other Interpretations, create the reality of the GGDM in-game universe.

  Patents are thus descriptive or factual interpretations *in an odd sort of way*:
    - ✓ "An interpretation is a *descriptive interpretation* (also called a *factual interpretation*) if at least one of the undefined symbols of its formal system becomes, in the interpretation, the name of a physical object, or observable property. A descriptive interpretation is a type of interpretation used in science and logic to talk about empirical entities." – from Wikipedia article, "Interpretation (philosophy)," November 30, 2015.

"We regret nothing we have said or done on this show – not the epic tech fail of our first KFUO broadcast, our poking fun at the phony charges of 'sacerdotalism' or 'liberalism,' our episodes on evolution, or our mocking the false pretensions of church institutions and power structures. Religion needs a good, swift kick in the shins, and we were more than happy to deliver it, even if we did occasionally get bruised in the process."

– Rev. Craig Donofrio and Rev. Bill Cwirla ("The Manly Doctors of Divinity"), from godwhisperers.org [4]

God Whisperers: Though I had not heard of this show before writing this section, it seems that it might have been interesting to listen to once or twice, even if frequently disagreeable to my own thoughts.

GGDM creates things in the game conscience by 'speaking' and the participants are that voice. The creation of things in the mind by speaking is not an alien concept to Western Civilization. The Bible, with which most members of Western Civilization are at least familiar in passing, begins thus (e.g., Genesis, Chapter 1, New International Version, available online for free) – the image of creation is created in the mind of the reader or listener by the words, in mortal imitation of the actual creation of the universe. The power of the spoken word to 'create' images, knowledge, concepts, and feelings has long been known; it is the core of rhetorical theory, storytelling, and lyrical music, and was argued in Plato's Gorgias, around 400 B.C. Without it, the world would be a very literal place, like the opening scene of Charles Dickens' Hard Times (1854), where Mr. Bounderby asks students to describe a horse (see Gradgrind discussion, 1 Colleges, p. 463 and feature quote bottom p. 462, *supra*). In Dune (1965), Frank Herbert continues, "Thoughts have sound, sound has form…"

- ✓ "In the beginning was the voice. Voice is sounding breath, the audible sign of life." – Otto Jespersen, Language, Its Nature, Development and Origin (1922).
  - Is God simply a voice then, or did voice precede God? Heinlein please?
- ✓ "For the one point in which we have our very greatest advantage over the brute creation is that we hold converse one with another, and can reproduce our thought in word. Who therefore would not rightly admire this faculty, and deem it his duty to exert himself to the utmost in this field, that by so doing he may surpass men themselves in that particular respect, wherein chiefly men are superior to animals?" [Cicero reporting the words of Lucius Crassus as repeated to him by Gaius Cotta, meaning it might just as well be fiction, probably is, but the point is still worthy and well-made] – Marcus Tullius Cicero, Of Oratory (55 B.C.), Bk. 1 (trans. E. W. Sutton and H. Rackham) from Patricia Bizzell and Bruce Herzberg, The Rhetorical Tradition (1990), p. 204.

- Word of Man: The causes, sources, and reasons behind societal problems is a huge complex subject. But consider for a moment, in the context of GGDM's underlying themes, that a contributing factor of many societal problems are interpretations. How can technology 'fix' interpretations (both group and individual) that might be behind some societal problems? Any technological solution to societal problems imagined are usually radical and repulsive. If we had the technology, should we put chips in people's heads to control and monitor their

thoughts (*à la* Ender's Game (1985))? How about political subliminal messaging in video and television programs (*à la* Videodrome (1983))? How about Johnny Mnemonic?

"(The) CEO of … a counter-extremist data firm that's working with Google, expressed wild optimism last fall in a(n) … op-ed. 'By marrying big data with personal empathy,' he wrote, 'our generation can starve extremist organizations of their ability to recruit, and they will wither on the vine and die.' That's Silicon Valley speak for 'technology can fix everything' – including societal problems that platforms like YouTube have made demonstrably worse."

– Bob Moser, "How YouTube Became the World Wide Leader in White Supremacy," New Republic, August 21, 2017

Endnotes.

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[1] Commentary: Patents are not in any way, a governmental control on technology; they instead encourage technological innovation by granting protections, and serve as a public record of innovation for later. This is not the same as arguing that patents 'control' technology by discouraging inventors or researchers from inventing new things that might infringe on an existing patent.

[2] Commentary: I don't know where I picked up the term and concept of "technosolution." I know that I read it somewhere in the early 90s; I did not stumble on this concept myself, this is not one of my GGDM neologisms. The base concept is however, unmistakably a criticism of how modern Western society solves social problems, utopian expectations. It is also related generally to the current German term, *wunderwaffe*, popularized during WWII.

[3] Commentary & Citation: "Boffin" is a British comic slang word for scientist, technician or engineer that I detest and I also tend to acutely dislike boffin characters *in any form of fiction*; e.g., the eye-rolling comic depiction of the two scientists in Pacific Rim (2013) – a parody of the essential role of British scientists in the World War effort of our grandparents – I they felt detracted from the movie. I first encountered the word in a British article title about astrophysics or cosmology a few years ago. Boffin is an example of a term that is driven by media and culture, and I am not a fan of television sitcoms (or even sitcom movies) generally, or of shows that appear to make lowbrow fun of intelligent, educated people such as the sitcom, The Big Bang Theory (2007). I guess that makes me an elitist and I don't care, our civilization has enough low-brow and dumbing-down to fill the dark matter balancing requirement of a galaxy. The term originated as sailor's comical slang, was elevated to somewhat heroic-status during World War II, but absent existential threat and positive media-shaping usage has slowly reverted to the comical. I certainly didn't feel that its use in the article title was complementary of what the scientists in the article were reportedly doing – which raises, I guess, another issue more properly suited for journalism class: to what extent should print article titles be uncomplimentary, disparaging, disrespectful of the subject of the article?

- ✓ I searched a folder where I saved about 9,000 articles over the years. I did not find the article that included "boffins" in the title, but was surprised to find six articles where the word was used, including 'astroboffins' and 'boffinry' variations. All six articles, published between 2012 and 2015, were from The Register, a somewhat controversial, flamboyant, and disrespectful (they certainly push the tabloid-like envelope) "English technology news and opinion website" (Wikipedia article, "The Register," May 3, 2019). It is odd cant that a website that makes its business and reputation reporting the progress of science, the products of technology, and from whose work and technology they exist (a situation akin to religion apologist bloggers criticizing, arguing against, damning, and dismissing science on their webpages), should regularly use a word so disrespectful to the scientists, technicians and engineers producing what they report? It is notable that The Register's logo includes the phrase, "Biting the hand that feeds IT." The Register, I suspect, won't care what I think anyway (reference to their response to Martin Robbins' criticism (with whom I agree regarding their repeated use of 'boffin.'..), as partially reproduced in Wikipedia article. *Id.*).

[4] Commentary: I include their epithet "The Manly Doctors of Divinity" for amusement at the stick-in-the eye implications to the rest of their profession, not for their promotion or for the truth of the matter; it is amusing that some of their colleagues must have been irked by it. The 'men of the cloth' have stumbled over their own robes lately.