A striking light is cast by implication on the aforementioned issue of the coincidence between the birth of agriculture and the coming to the fore of "female spirituality" in the first chapter of The Religion of Technology: The Divinity of Man and the Spirit of Invention

by David F Noble, of which few pages are however freely accessible at google.books. [www.pagetwister.com/paper.cfm?st=3617&s=1&sort=1](http://www.pagetwister.com/paper.cfm?st=3617&s=1&sort=1) had the good idea to reproduce it, but the Web site turns out to be aptly named, because the reproduction is partial, not to mention the scambled footnotes.

What we experience today is neither new nor odd, but rather, a continuation of a thousand-year-old Western tradition in which the advance of the useful arts was inspired by and grounded upon religious expectation. Only during the last century and a half or so has this tradition been temporarily interrupted--or, rather, obscured--by secularist polemic and ideology, which greatly exaggerated the allegedly fundamental conflict between science and religion. 4

For modern technology and modern faith are neither complements nor opposites, nod do they represent succeeding stage of human development. They are merged, and always have been, the technological enterprise being, at the same time, an essentially religious endeavor. 4-5

Rather, it is meant literally and historically, to indicate that modern technology and religion have evolved together and that, as a result, the technological enterprise has been and remains suffused with religious belief. 5

Perhaps nowhere is the intimate connection between religoin and technology more manifest than in the United States, where an unrivaled popular enchantment with technological advance is matched by an equally earnest popular expectation of Jesus Christ's return. ...the two obsessions are often held by the same people, many among these being technologists themselves. 5

Artificial Intelligence advocates was eloquent about the possibilities of machine-based immortality and resurrection, and their disciples the architects of virtual reality and cyberspace, exult in their expectation of God-like omnipresence and disembodied perfection. ... All of these technological pioneers harbor deep-seated beliefs which are variations upon familiar religious themes. 5

A pattern of coherent, continuous, and cumulative advance in the useful arts, as opposed to a slow, haphazard accumulation of isolated specific inventions, emerged uniquely in the European Middle Ages. This unprecedented enterprise reflected a profound cultural shift, a departure from both classical and orthodox Christian belief, whereby humble activities ...came to be dignified and deemed worthy of elite attention and devotion. ... was rooted in an ideological innovation which invested the useful arts with a significance beyond mere utility. Technology had come to be identified with transcendence, implicated as never before in the Christian idea of redemption. ... Thus the emergence of Western technology as a history force and the emergence of the religion of technology were two sides of the same phenomenon. 9

According got Augustine, the original Adam, having been created in God's image, was immortal, a distinctly diving characteristic forfeited with the Fall. Christ, the "son of Man...come in the glory of his Father with the angels, " was identified by Paul as the "last Adam," whose true divinity and immortality were revealed with the Resurrection, and was symbolically made accessible to his followers through the ritual of baptismal regeneration. 10

Recalling the divine likeness of the first Adam, the advent of Christ promised the same destiny for a redeemed mankind. this was made explicit in the millenarian Book of Revelation, which prophesied a happy ending to the biblical story wherein all the righteous would regain their divinity in a succession of resurrections. "And God shall wipe away all tears from their eyes, and there shall be no more death." (see note three chapter the divine likeness) 10-11

Gregory of Nyssa wrote in the fourth century "We shall say that Christianity is the imitation of the divine nature...For the first making of man was according to the imitation of God's likeness...and the promise of Christianity is that man will be brought back to the original happiness." For Christians, then, human efforts to recover Adamic perfection and imitate the life of Christ were one and the same: the pursuit of divinity.

[ not quote here] Augustine marked the difference between living a virtuous life and going to Heaven, and developing skills in the physical world. [end] "Quite apart from hose supernatural arts of living in virtue and of reaching immortal beatitude which nothing by the grace of God which is in Christ can communicate to the some of promise and heirs of the kingdom," he wrote in City of God, "there have been discovered and perfected by the natural genius of man, innumerable arts and skills which minister not only to the necessities of life but also to human enjoyment." (city of god pg 526-527).

Augustine wrote in The city of God that "there have been discovered and perfected, by the natural genius of man, innumerable arts and skills which minister not only to the necessities of life by also to human enjoyment." He recognized the "astonishing achievements" that had taken place in cloth-making, navigation, architecture, agriculture, ceramics, medicine, weaponry and fortification, animal husbandry, and food preparation; in mathematics, astronomy, and philosophy as well as in language, writing, music theater, painting, and sculpture. 11-12

In the early middle ages, for reasons that remain obscure, the relationship between technology and transcendence began to change. Over time, technology came to be identified more closely with both lost perfection and the possibility of renewed perfection, and the advance of the arts took on new significance, not only a evidence of grace, but as a mans of preparation for, and a sure sign of, imminent salvation. Historian Lynn White suggested that the changing attitude toward technology might have begun with the introduction of the heavy plow in the Frankish Empire. This major technological innovation radically reversed the relation between man and nature by making the capacity of a machine rather than human need the standard of land division. 12 "Formerly he had been part of nature; now he became an exploiter of nature. This

alteration of attitudes might be guessed from the heavy plough itself. The iconography of the new

calendars confirms the change. Neither the heavy plough nor the new style of calendar was known in

Byzantium." (emphasis mine) (see aslearningdesign.net/3888/wp-content/uploads/2018/02/05-White-Annotate-2.pdf. Editor's Note) Shortly thereafter, around 830, a new form of calendar illustration began to appear among the Franks which highlighted this new attitude toward nature. Pictures of ploughing, haying, and harvesting represented, coercive, dominating posture. "Man and nature are two things, and man is master." (quoted at research.gold.ac.uk/28587/1/MED\_thesis\_Mackie\_2009.pdf, p. 151. The "giant trees" theory put forward in [www.youtube.com/watch?v=XDD92yWeHF4](http://www.youtube.com/watch?v=XDD92yWeHF4) is debattable to say the least; however, it shows late 19th and early 20th century photos of lumberjacks near redwoods they have just cut down, and the [for lack of a better term] Promethean look in their eyes is chilling. Editor's Note) At the very same time, during the Carolingian age, there appeared what White described as "the earliest indication that men thought advancing technology to be an aspêct of Christian virtue." (emphasis mine)

In the Utrecht Psalter, illuminated near Rheims around 830, there is an illustration of Psalm 63, which gives technological advantage to those on the side of God (crank grinding stone) -- made by benedictine monk, "who were earnest advocates of the arts int he service of spiritual ends." 12. Ernest Benz noted that "it is one of the most amazing facts of Western cultural history that the striking acceleration and intensification of technological development in post-Carolingian Europe emanated from contemplative monasticism."(see note 9) 13

The benedictine monks in the sixth century "made the practical arts and manual labor vital elements of monastic devotion, alongside liturgical praise of God..." 13

"It is one of the most amazing facts of Western cultural history," noted Ernest Benz, "that the striking acceleration and intensification of technological development in post-Carolingian Europe emanated from contemplative monasticism." (see note 9 the divine likeness) 13 Ernst Benz, Evolution and Christian Hope (Garden City, N.Y. Doubleday, 1975, p 128)

Charlemagne imposed the Benedictine Rule on all religious houses in his realm, and his son Louis the Pious, was the original patron of the monastic-reform movement which was to sweep through Europe in the tenth and eleventh centuries. Under the first imperial, and then feudal and papal auspices, the Benedictines eventually turned their religious devotion to the useful arts into a medieval industrial revolution pioneering in the avid use of windmill,s watermills, and new agricultural methods. 14

..this social elevation of the arts signified at the same time an ideological elevation of mankind above nature. 14

The Carolinian philosopher Erigena used "artes mechanicae" in his commentary n Martianus Capella's fifth century "The Marriage of Philology and Mercury. "He not only recognized the various useful arts as constituting a distinct class of activity but also, in stark contrast to Capella, accorded them an unprecedented status equal to that of the seven liberal arts 15

The new view of the useful arts, as distinct, dignified divinely inspired and of value for salvation, was first fully articulated in the ninth century, in the work of the Carolingian philosopher Erigena," and it was used later by "Hugh of St. victor in his enormously influential classification of knowledge." 15 By the end of the 12th century it "became the normal term for technological arts" used by such philosophers as Abelard, Duns Scotus, Bonaventura, Albertus Magnus, and Raymond Lully." 15

Erigena departed from The Augustinian view by arguing that the useful arts were indeed part of mankind's original endowment, his God-like image, rather than merely a necessary product of his fallen state. thus teh mechanical arts rightfully had an honored place in divine creation. Erigena insisted that knowledge of the arts was innate in man, as aspect of his initial endowment, but that it had become obscured by sin since the Fall of Man and was now but a vestige of its original perfection. He believed, however, that through practical effort and study, mankind's prelapsarian powers could be at least partially recovered and could contribute, in the process, to the restoration of perfection. In other words, Erigena invest the arts with spiritual significance, as elements of man's God-likeness, and identified them as vehicle of redemption. As one scholar summarized Erigena's thought, "In pursuing the study of the arts...on progresses in perfection since the arts are innate in man. Knowledge of them has been clouded by the Fall. Their recovery by study helps to restore man to his pristine state." see note 15 the divine likeness. 17

The arts, Erigena wrote, are "man's link with the Divine, their cultivation a means to salvation." 17

Erigena's boldly innovative and spiritually promising re-conceptualization of the arts signaled a turning point in the ideological history of technology. As one Eriogena scholar noted, "it would be difficult to over-estimate the significance of this development. The new emphasis on the place of the arts in Christian education must be seen as one of the chief factors animating the ninth century's intense interest in the arts." This new "christianization of the arts" for the first time gave the means of mortal survival a crucial role in the realization of immortal salvation. see note 16 the diving likeness. 17

It the first half of this (twelfth) century, the monastic technical tradition found its greatest written expression in a technical treatise by the German Benedictine Theophilus. A skilled metallurgist and general craftsman as well as a monk, Theophilus was "the first man in all history to record in words anything approaching circumstantial detail of a technique based on his own experience., according to metallurgist and historian of technology Cyril Stanley Smith. De Diversis Artibus, was a "religiously motivated codification of all the skills available for the embellishment of a church", including machine design, metal casting, enameling, painting, glass-making, wire-drawing, and tinning. 18

Hugh of St. Victor in his innovative classification of knowledge, the Didascalicon gave "unprecedented psychic dignity and speculative interest to the mechanic arts. Hugh borrowed Enigena's rubric "mechanical arts" as a "generic term for all crafts." He specified in detail the seven mechanical arts offered by Philology to Mercury in return for the4 seven liberal arts. These included cloth-making, armaments and building, commerce, agriculture, hunting and food preparation, medicine, and theatrics. see note 21

19

Hugh also "linked the mechanical as well as the liberal arts directly to salvation and the restoration of fallen man." 19 In a departure from Augustine, he argued that the useful arts constituted a means of recovering mankind's perfection, his original divine image.

For Hugh, according to Elspeth Whitney, "the mechanical arts supply all the remedies for our physical weakness, a result of the Fall, and like the other branches of knowledge, are ultimately subsumed under the religious task of restoring our true, prelapsarian nature. see note 22 19

This theme was sustained in the thirteenth century by Michael Scot, who held that "the primary purpose of the human sciences is to restore fallen man to his prelapsarian position." 20 Accordingly, the technological invention was duly incorporated into biblical commentary and thus Christian history. 21

The Christian notion of the millennium is based upon the prophecy of the Book of Revelation, the last book of the Bible (known also as the Apocalypse of St. John), which was itself derived from ancient Hebrew prophecy. In his vision, John of Patmos foretells a thousand-year reign on earth of the returned Messiah, Christ, together with an elite corps of the saintly elect. 22

Millenarism is, in essence, the expectation that the end of the world is near and that, accordingly, a new earthly paradise is at hand. 23

n.q. (church attempted to suppress millenarianism, formally condemned as heresy in 431 at Council of Ephesus (cite) 23

In the high Middle Ages..a rigorist Church reform movement, the Crusades, and renewed external threats to Christendom, millenarianism regains a degree of elite respectability, especially among the new religious orders, which made use of apocalyptic mythology to validate their identity and destiny, and thereby magnify their significance. 24

The founding prophet of this renewed expectation was a Cistercian abbot from Calabria, Joachim of Fiore. Inspired by a vision while reading the Book of Revelations, Joachim formulated what has been described as the "most influential prophetic system known to Europe until Marxism," which "ignited the greatest spiritual revolution of the Middle Ages." In the Exposition on the apocalypse, he wrote the millenarian meaning of history, God's plan for humanity, was revealed to him. He taught that the divinely predetermined structure of history could be known through study of biblical prophecy, particularly the prophecy of St. John. In this light, there was a discernible pattern to history; it had momentum, direction, and meaning based upon the final events toward which it moved--the millennial reunification of man with God. 24

...the elect needed no longer to just passively await the millennium; they could now actively work to bring it about. see note 5 millennium: the promise of perfection. 25

Thus, despite continued official condemnation, which still put even elite millenarians in jeopardy, the prophetic teaching of Joachim of Fiore steadily became part of the "common stock of European social mythology." 25 see note 7

By the thirteenth century, the millenarian inspiration behind technological development was already being anonymously represented in the work of countless cathedral-builders, the most advanced artisans of their time, whose silent stone images suggest a preoccupation with divine judgment and the world's end. 26

Roger Bacon perceived the advance of the arts ... as a means of anticipating and preparing for the kingdom to come, and as a sure sign in and of itself that that kingdom was at hand. "All wise men believe that we are not far removed from the times of Antichrist," wrote Bacon, who was greatly influenced by the legacy of Joachim of Fiore. It was in this apocalyptic spirit that Bacon counseled the pope to develop the useful arts. At the same time, Bacon believed, fthat the arts with the birthright of the "sons of Adam." "Truth gains strength and will do so until the day of Antichrist," he wrote. 26

[there follows many pages of notable name throughout history who have subscribed to the millennarian thingy

13th and 14t centuries Raymond Lully , Arnau de Villanova, John of rupescissa

16th Century Geronimo de Mendieta Giovanni da Pian del Carpini Chistopher Columbus 14th c. Cardinal pierre d'Ailly 1410 15th and 16th centuries Pico della Mirandola Augustinian Abbot Edigio of Viterbo Cornelius Agrippa Albrecht Dürer Geronimo de Mendieta thomas More, Miguel de ervantes, Giordano Bruno end of 16th Tommaso campanella Johann Andreae and John Comenius

England 17th century wycliffe

Indeed, in the seventeenth century a literal reading of the Bible, in particular the prophetic books of the Old Testament and the Book of Revelation of the New Testament, became "central to all arts, sciences, and literature." 44

A good deal of theological reflection of the period focused upon the Fall, in the firm belief that it could be reverse. Much attention was given to the person of Adam, , in order to understand what he, and hence, mankind, had once been (and might once again become). ....By divine design and authority, he enjoyed a superiority and dominion over all other creatures, and complete control over nature. 45

Contemporary theology thus provided the moral underpinning for that ascendency of man over nature which had by the early modern period become the accepted goal of human endeavor. 45 see note 5

[charles webster??} This unprecedented millenarian milieu decisively and indelibly shaped the dnamic Western concept of technology . It encourage a new lordly attitude toward nature, reflecting the anticipated restoration of Edenic dominion, and the association notion, "which as to become common, that the stuy of the natural sciences will be carried on as an appropriate and important millennial activity."

The monumental studies of the period by Charles Webster have made it abundantly clear that such millenarian preparation had a decidedly applied, utilitarian thrust, emphasizing the enhancement of technological prowess in agriculture, husbandry, mining, metallurgy, chemistry, mechanisms, and navigation. "The technological discoveries of the renaissance, particularly those relating to gunpowder, printing and navigation, " Webster wrote, "appeared to represent a movement toward the return of man's dominion over nature....The Puritans genuinely thought that each step in the conquest of nature represented a move toward the millennial condition."

As Milton insisted, in the course of millennial advance, nature would not merely become known to man but "would surrender to man as its appointed governor and his rule would extend from command of the earth and seats to dominion over the stars." see not 12 48

...he apocalyptically inspired reformers of the age "framed programmers for the development of applied science. Fiore most among them was Kind James's Lord Chancellor Francis Bacon, whose "writing came to attain almost scriptural authority." ...Bacon defined the Western project of modern technology, and his bold vision was "framed with reference to the millennial expectation of man's dominion over nature." 49

If Bacon believe that the useful arts were essential for the advancement of knowledge, he also thought like his forebears, that the advancement of knowledge was essential for salvation and that the promised restoration of perfection, "the entrance into the kingdom of man, founded on the sciences," as he described it, "being not much other than the entrance into the kingdom of heaven." (Francis Bacon, "The Masculine Birth of Time," in Benjamin Farrington, The Philosophy of Francis Bacon (Chicago: University of Chicago Press, 1964), p. 72.) 50

Two decades later, he likewise explained, in the preface to The Great Instauration (stet), that he sought to show how the mind of man "might be restored to its perfect and original condition." (Bacon, Masculine Birth of Time, P. 72) see note 19 51

Two decades later, he likewise explained, in the preface to The Great Instauration (stet), that he sought to show how the mind of man "might be restored to its perfect and original condition." (Bacon, Masculine Birth of Time, P. 72)

Largely through the enormous and enduring influence of Francis Bacon, the medieval identification of technology with transcendence now informed the emergent mentality of modernity.53

As Margaret Jacob observed, the "millenarian impulse must be recognized as one of the main motivations for the cultivation of scientific inquiry in seventeenth century England....Almost every important seventeenth century English scientist of promoter of science from Robert Boyle to Isaac Newton believed in the approaching millennium." 59 . (margaret Jocob. see not 5 heavenly virtuosi) 59

Robert Boyle, one of the founders of the Royal Society (1660)wrote that "God was pleased to make (man), not after the world's image but his own>" Thus, he urged, mankind must "look upon ourselves as belonging unto God." Boyle believed that this privileged relationship to God was especially embodied in the scientist, "born the priest of nature", whose "inquiry mediates between God and Creation. 64

Charles Babbage, "By the exertion of the highest faculties with which we have been blessed we may make a nearer approach to the knowledge of the will of our Creator." He used the example of his Calculating Engine to demonstrate the probability, and hence the truth of miracles, in particular the miracle of resurrection. 72

Perhaps more important historically, this same spirit now cant to be embodied by another generation of spiritual men and institutionalized anew in yet another brotherhood of the sons of Adam, the Freemasons....evolved out of the guilds of medieval stonemasons, on the one hand, and the occult association of the Rosicrucians, on the other. From the first, Freemasonry derived a mythic identification with artisanry--the "craft"--and a dedication to the useful arts. 73

This same spirit now came to be embodied by another generation of spiritual men and institutionalized anew in yet another brotherhood of teh sons of Adam, the Freemasons. ... the Freemasons embraced the Baconian vision of "Solomon's House," a temple of divine knowledge dedicate at once to the relief of man's estate and the restoration of perfection. ...a secret society and hsifted its focus from the acdtual craft of buidoing to the "moral and mstical intepretation of building" grounded uon worshp of the "great Architect." 74

At the start of the documented history of speculative freemasonry, in the 1720s, one out of every four English Freemasons was a fellow of the Royal Society. 74

"...Lifelong Mason Benjamin Franklin ..was the foremost early promoter of the useful arts in America. His famous "Proposals Relating to the Education of Youth in Pennsylvania," which led dto the establishment o the Academy of Pennsylvania (later the University of Pennsylvania), was 'the best-known early American argument for advanced training in the useful arts and sciences." ... 79

Grand Master DeWitt Clinton, educational reformer....and the major force behind the American Society for th Promotion of the Useful Arts,; Stephen Van Rensselaer, another champion of internal improvement and founder of the firs civilian engineering school in America, Rensselaer Polytechnic Institute; and the prolific inventor and industrial entrepreneur Robert Fulton. 79

freemasons created the Ecole Polytechnique (Antonie Fourcroy (mathematician), Jean Hassenfratz, Claude Berthollet (chemist), and Gaspard Monge (mathematician), all Freemasons. 81

Auguste Comte, "a polytechnician through and through" wrote "Third Essay", "An intermediate class is rising up" (referring to Monge as the prime example) "whose particular destination is to organize the relations of theory and practice." Later he declared that "the establishment of the class of engineers in ins proper characteristics is the more important, because this class will, without doubt, constitute the direct and necessary instrument of coalition between men of science and industrialists by which alone the new social order can commence." 83 see note 31

"We [positivists] are the true successors of the great men of the Middle Ages," Comte proclaimed. 84

Comte was the founder of Positivism, in which factual knowledge is based on the “positive” data of sensory experience, beyond which lie only pure logic and pure mathematics, and the “relations of ideas”. Positivism regards theology and metaphysics as earlier, imperfect modes of knowledge. For Comte, positive knowledge rests on natural phenomena and the empirical experience of their properties and relations. (rewritten from 84-85)

Comte's technology-inspired millenarianism was shared by nineteenth-century socialists, who also grounded their philosophical systems on an explicit rejection of religion. Life the Freemasons of the enlightenment, the socialists carried the religion of technology into a more secular age; unlike the Freemasons, they rendered it a popular as well as an elite obsession." 86

Later, Karl Marx would level the post profound intellectual assault upon both religion--the "opiate" of the masses--and the capitalist use of machinery to degrade and enslave human labor. Yet, at the same time, he identified the technical development of the means of production as the underlying historical substrate of deliverance, laying the material basis not only for capitalist accumulation but also for the social revolution that would signal the end of class society and thus the transcendence of history.l

Masons have been among the most prominent pioneers of every American transportation revolution: canals (Clinton and Van Rensselaer); steamboats (Fulton); railroads (George Pullman, Edward Harriman, James J. Hill); the automobile (Henry Ford0: the airplane (Charles Limbaugh); and spaceflight (at least half a dozen astronauts, including John Glenn, the first man to orbit the earth, and Edwin Aldrin, Lunar-module pilot for the first landing on the moon). 88

This, then, was the ideological context of technological development in American, where scientific and industrial revolutions followed in the wake of religious revival. The premillennialists earnestly anticipated and piously prepared for Christ's imminent return and the start of the millennium. The postmillennialists, believing that Christ would return only at the close of the millennium, what had already begun, righteously set about constructing his earthly kingdom. 90

Jacob Bigalow popularized usage of the word "technology."

"Some seventeenth-century puritan theologians argued that what was nature to us was God’s creation. Therefore they rejected the Aristotelian distinction between natural science and productive art and proposed technologia that encompassed both. Among the puritans was William Ames, whose ideas were influential in Massachusetts.[6] In 1829, Boston botanist Jacob Bigelow observed that the word "technology," found in some old dictionaries, was revived among practical men. He delivered a series of lectures entitled Elements of Technology, in which gave a definition with Aristotelian ring: Technology is “the principle, processes, and nomenclatures of the more conspicuous arts, particularly those which involve application of science.”[7] He later sat on the board of trustees of Massachusetts Institute of Technology, the foundation of which in 1861 publicized the concept of technology." from [www.creatingtechnology.org/eng/techne.htm](http://www.creatingtechnology.org/eng/techne.htm)

The engineering mission, declared mechanical engineer George Babcock, is to bring about the time "when every force in nature and every created thing shall be subject to the control of man." 95 see note 15

"The civil engineer is the priest of material development," exclaimed civil engineer George S. Morison; "He is the priest of the new epoch." 95 see note 15

Edward Bellamy 1888, published Looking Backward, one of the best-selling books of the nineteenth century. ... futuristic portrayal of America at the turn of the second Christian millennium was the quintessential "product of America's peak of faith in technology,." as historian Howard P. Segal emphasized. "The United State of the year 2000 is very much a technological utopia: an allegedly ideal society not simply dependent upon tools and machines, or even worshipful of them, but outright modeled after them. ... The purposeful, positive use of technology--from improved factories and offices to new highways and electric lighting systems to innovative pneumatic tubes, electronic broadcasts, and credit cards--is in fact, a critical to the predicted transformation of the United States from a living hell into a heaven on earth." 99 see note 24

Wernher von Braun, German war rocket designer, became a born-again Christian after the U.S. Army shipped him to Fort Bliss, Texas at the close of World War II. Why, then, send men into space? It was Gods purpose, wrote von Braun (who named both Adam and Explorer), "to send his Son to the other worlds to bring the gospel to them." Von Braun had come to view spaceflight as a millennial "new beginning" for mankind, the second and final phase of his divinely ordained destiny. 126

"Only man," von Braun observed, echoing Kepler, "was burdened with being an image of God cast into the form on an animal," a being at once earthly and heavenly. 126

"If man is Alpha and Omega, then is it profoundly important for religious reasons that he travel to other worlds, other galaxies; for it may be man's destiny to assume immortality, not only of his race but even of the life spark itself. . . By the grace of God, we shall in this century successfully send man through space to the moon and to other planets on the first leg of his last and greatest journey..." 126 see note 25