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Pre-scientific Chronology: The Bible and the Origin of the World¹

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I fear that the reading of this paper may lead to my expulsion from this Society: for the Society since its foundation has been expressly devoted to “useful knowledge,” and it is doubtful whether either Benjamin Franklin or Thomas Jefferson would have considered biblical chronology to be useful knowledge, or indeed to be knowledge at all. The only person I can appeal to for assistance is, perhaps, Sir Isaac Newton, whom they would both have respected. Newton devoted much time and effort to biblical chronology, and indeed at one stage, actually in his early thirties, made it his “dominant concern” and allowed it to crowd out his work on mechanics, optics, and such things.² Moreover, I am encouraged by a happy recent event: namely, that the well-known scientist Stephen Jay Gould in a recent book has also gone back to the subject of biblical chronology and indeed has done me the honor of quoting my earlier writings on this matter.³ So perhaps I shall not be expelled after all.

Anyway, what I want to say is that, though biblical chronology may in modern times seem to be an area for cranks and crackpots, in older times it occupied some of the greatest minds. Alongside Newton we may mention Martin Luther, who wrote a *Supputatio annorum mundi* or Reckoning of the Years of the World,⁴ and the great classical scholar Joseph Justus Scaliger (1540–1609).⁵ In the English-speaking

¹ Read 24 April 1997.

² See Maurice Wiles, “Newton and the Bible,” 334. For full references, see the bibliography.

³ S. Jay Gould, “Fall in the House of Usher,” 181–93; see references to J. Barr, “Why the World was created in 4004 BC: Archbishop Ussher and Biblical Chronology,” 188, 190, 192.

⁴ On Luther’s work see J. Barr, “Luther and Biblical Chronology.”

⁵ On Scaliger see the magnificent two-volume study of Anthony Grafton, *Joseph Scaliger. A Study in the History of Classical Scholarship* (Oxford-Warburg Studies; Oxford: Clarendon, 1983 and 1993). The second volume is devoted to the Historical Chronology.

world, however, the most familiar name is that of James Ussher, archbishop of Armagh in Ireland (1581–1656), who calculated that the creation of the world took place in the year 4004 B.C. and, to be precise, on Sunday 23 October of that year. This sounds laughable, but Ussher had worked it all out very carefully, and wrote two thousand pages of Latin to explain it.

Now, to get a good starting point from which to understand why the matter was important, we can go back to Egypt two thousand years ago, important because Egypt was then much the most important centre of Jewish population within the Greek-speaking world. Some people said that the Jews were newcomers on the scene of world history and therefore had no status within civilization such as the Greeks had. Not at all, wrote the Jewish historian Josephus: the Jews have been here all the time and, unlike the Greeks, who have a lot of different and contradictory books, the Jews have one precise and unified history, one single narrative that goes back to the creation of the world about five thousand years before. The central point was the *one book* that gave a clear, or fairly clear, sequence in years from the absolute creation of the world down into later history. This same interest was taken over by Christianity and used in *its* arguments within the Greco-Roman world. Newton much later was still arguing the same thing: “The narrative Bible histories, for example, became a literary support for the astronomical proofs of his revision of world chronology, which sliced some 500 years off the traditional antiquity of the Greeks and ensured the uncontested priority of Israel’s civilization, a priority that brought the Jews closer to the divine source.”⁶

Within Christianity another aspect became more prominent: if one could know the origin of the world, could one not know also when it would end? In the Old Testament or Hebrew Bible the main emphasis had been on the beginning: from the Creation one could reckon, mostly by a fairly simple process of addition, to the number of years from Creation to some great event, like the Flood or the migration of Abraham or the building of Solomon’s Temple; and Jewish dates today still take the same form: this year is the year 5757 from Creation, implying a date of 3761 B.C. for Creation. These are called A.M. dates, dates reckoned Anno Mundi, by the year of the world. Within Christianity there was sometimes a much greater interest in the end of the world: supposing it was to last four thousand years, or six thousand, or some other such figure, the coming of the end could be calculated. This tendency is called chiliasm, an interest in thousands or millennia—when

⁶ Frank E. Manuel, *The Religion of Isaac Newton* (Oxford: Clarendon, 1974), 86.

you think about it, an appropriate subject for us to be thinking about when the end of this millennium is just two or three years away. But if one looked in this direction, into the future, the Hebrew Bible was less clear. On the one hand it had prophets, who were understood to have spoken about future events; on the other hand these prophets seldom gave exact dates of the sort we found working from Creation down to later history. The major place that offered figures was the Book of Daniel, but these were figures of days and not of years: "From the time that the continual burnt offering is taken away, and the abomination that makes desolate is set up, there shall be 1290 days. Blessed is he who waits and comes to the 1335 days [Daniel 12.11–12, right at the end of the book]."

To say that a "day" in Daniel meant a year was the first essential step, and, if one can assume that he was talking about the end of the world,⁷ here was the key. However, in traditional biblical chronology there was a difference between those whose main interest was in the origins and their relation to subsequent times, and those whose greatest interest was in the coming end of the world. Ussher belonged to the former category and so did Luther. Newton, while very interested in the origins, was even more devoted to the fulfilment of prophecy. But for the rest of this paper, as the title indicates, I shall be more interested in the origins of the world than in its end, or, more correctly, in the relationship between the beginnings of the world and the great events of later history. That is where the major work of pre-scientific chronology lay.

Now, as I have said, in biblical chronology Creation was the datum point: the question was not: how long ago did the world begin? but, given the beginning of the world, how long was it from then to some later event such as the Exodus or the building of Solomon's temple? And a chronology could be constructed by a fairly simple addition from the ages of persons when they had their first son⁸ or their ages

⁷ "Bentley [the distinguished classical scholar] offended Newton by asking him to prove the self-evident truth that a day in prophecy means a calendar year, and as a consequence there was a breach in their relations for a time," writes Manuel, 90.

⁸ It is important to note this point: the earlier part of the chronology works not from the total years to which a person lives, but from the age at which he had his first son. Adam, for instance, lived 930 years in all, but he was 130 years old when he had his first son Seth (the first who counted in the genealogy of Genesis 5; there were, of course, Cain and Abel, but they did not figure in the chronological section). The ages of the patriarchs when their first sons were born can be simply added up to provide a chronology. The eight hundred years that Adam lived after the birth of Seth are an interesting puzzle, but do not enter into the basic reckoning.

when they did something important, e.g., when Abraham migrated into the land of Canaan. If it was as simple as this, why was there not an agreed chronology from the start? There were three main problems:

1. Some biblical passages were not absolutely clear. The whole thing worked on the assumption that the Bible was without errors and its figures should in general be taken literally, but this tended to break down where the Bible had two references to the same event and these did not quite agree.

2. Second, the Bible existed in at least three textual traditions, which differed in the chronological figures, especially in the important ones at the beginning, from Adam down to Noah and from Noah down to Abraham. Thus for the period from Creation down to the Flood the traditional Hebrew text, as translated in our Bibles, gave a period of 1,656 years. But the Greek text or Septuagint, created in Egypt in Ptolemaic times, gave for the same period a figure of 2,242 years. In Christianity some authorities basically followed the Hebrew text, some the Greek; hence there can be big differences of six hundred years or so. In more modern times, in fact in the seventeenth century, a further difference was made when the Hebrew text of the Samaritans came to be known in the West. For if the Greek text had higher figures than the traditional Hebrew for the period down to the Flood, the Samaritans differed in the opposite direction, having the lower figure of 1,307 years for the same period. The discovery of the Samaritan text created a stir at the time, for it seemed to be very ancient; moreover, its figures agreed at some points with the New Testament and with some other sources, then coming to be known, such as the Book of Jubilees, a sort of rewrite of Genesis discovered through exploration in Ethiopia, where it was counted as a full part of the Bible. Today some scholars think that the best ancient chronology is to be found by a judicious combination of the Jewish and the Samaritan Hebrew. Anyway, one can see that the differences of text form a difficulty.

3. Third, and this is the most important problem, in a certain sense one cannot make a biblical chronology without going outside the Bible, not one by which one can reckon back from later times. The chronological scheme of the Hebrew Bible in the end fades away: it works fairly well from Creation down to the end of the Hebrew kingdoms, but after that it has only vague and scattered hints, and in the Persian Empire, though it mentions various Persian emperors, no one can tell from the Bible alone how many Persian kings there were or how long the Persian Empire existed. This is why the Jewish reckoning of today, implying a creation in 3761 B.C., has a lower figure than a chronology like Ussher's: for Jewish sources estimated the total dura-

tion of the Persian Empire at fifty-two or even thirty-two years, when in fact it lasted about two hundred.

Even if one takes the New Testament into consideration, it also gives us no clear idea of how much time had passed since the last dated events of the Old. Even the so-called apocryphal books reach back in dates only to about the time of Alexander. In order to construct a chronology that would be based on the Bible but would also come down into post-biblical times, it was necessary to go back through classical sources until one could find a point at which classical (or, indeed, astronomical) information provided a fix with an element known from the Hebrew Bible. And this is what the chronologists like Ussher did: his work contained hundreds of pages that went through the careers of Julius Caesar and Alexander the Great, plus numerous less famous individuals, in order to build up a detailed base into which would fit the series of dates coming down from Creation and provided by the Bible. For Ussher the essential synchronism was the year of the death of Nebuchadnezzar and his succession by his son Amel-Marduk.

Now I mentioned the word "astronomy" a moment ago, and it is worthwhile to consider the place that this had. Although biblical chronology had a long history behind it, and similar, though not identical, dates to those of Ussher had already been worked out by (say) Bede almost a thousand years earlier, the increasing precision of astronomy made the sixteenth, seventeenth, and eighteenth centuries into the great era for biblical chronology. Kepler, for instance, had revised the date of Jesus' birth to 5 B.C.,⁹ and Newton quoted this with approval. By this time it was known that Herod the Great had died in 4 B.C. and therefore Jesus must have been born before that time. This fact provides the basis for Ussher's date of 4004 B.C. for Creation. There was nothing novel in a period of about four thousand years from Creation to Christ, and anyone who worked with figures based on the Hebrew Bible would have come within a hundred years or so of this time.¹⁰ Moreover, the Talmud contained a saying that "the world is to exist 6000 years: the first 2000 are to be void; the next 2000 years are the time of the Law; and the following 2000 years are the period of the Messiah." This Jewish saying suited Christianity admirably and was repeated again and again in the Renaissance and Reformation. Ussher's triumph

⁹ Manuel, 61.

¹⁰ Luther, living earlier than Ussher, had also used a four-thousand-year scheme, but he differed in that he took the end of the four thousand years to come, not at the birth of Jesus, but at the Apostolic Council related in Acts 15, when, in his view, the (Mosaic) Law was annulled and the era of divine grace began. This fitted very well with his theology.

was that he made it work exactly, with four thousand years from Creation to the revised date for Jesus' birth.

But, you may ask, how did he get to the date of 23 October? The Bible did not say at what time in the year Creation took place. Some thought it would be in the spring, being a good season for growth; but there was a strong opinion that it would be in the fall, for that is when the Jewish New Year is celebrated. The first day of Creation would then start the clock of the Jewish calendar.¹¹ And obviously it was a Sunday, the first day of the week, as Genesis had stated. This is where astronomy came in. Ussher looked in "the astronomical tables," which, as I am informed by Professor J. D. North, were almost certainly the Rudolfin tables of Kepler and Brahe, for the autumnal equinox of the year 4004 B.C., and the first Sunday after the equinox was 23 October. It was on that day that light was created, the first act of creation. It was—at this point—all quite scientific.

Biblical chronology was a subject that occupied some of the greatest minds of older times. Why then, we may ask, did it fade away, as it certainly did? There were several reasons, some of which I have touched on briefly. The Samaritan text cast doubt upon the apparently unitary figures of the Hebrew Bible; the New Testament also cast doubt, partly because it agreed at points with the Samaritan, partly because it was less concerned about chronology than the Old Testament had been, and could not provide an exact sequence even of the life of Jesus. In 1656 there appeared Isaac la Peyrère's book *Men Before Adam*, which argued that Adam was not the first man anyway. He might be the first biblical man, or the first Jewish man, but there had been men and women before him. This solved all sorts of puzzles in the Bible, but only at the cost of completely abandoning a biblical chronology for the origin of the world. And, finally, within modern science it was geology that really changed the world-picture, in this respect much more than the later controversies over evolution. Even people who thought the Bible to be in other respects infallible came to think that in its handling of the beginnings of the world it was approximative rather than precise.

There are two striking things about the biblical figures that should be mentioned at this point. The first is that the relevant figures, those

¹¹ The reader may perceive a snag, in that 23 October is very late for the Jewish New Year to fall. Ussher, however, had a very good reason for his thinking here. It is connected with the difference between the Julian and the Gregorian calendars. In Ussher's time there were ten days of difference, but extrapolated to about 5,600 years earlier there were about thirty-two days. See on this my article on Ussher, 592.

for the life of a man up to the birth of his first son, or for the period of a king's reign, are always or almost always expressed as an exact number of whole years. People do not normally live for an exact number of years, with no extra months or days. To give a schematic example, if we had four successive kings who reigned for twenty years each, that would give a chronological result of eighty years. But suppose two of them reigned for twenty years and three months, and one of them for twenty years and six months, then the effect would be a total figure of eighty-one years. How then would exact chronological reckoning be possible?

The probable explanation is that a scheme of dating was used that reckoned not from the actual dates of birth, accession, or death, but from the New Year of the year in which these events took place. The years of a king were reckoned from New Year to New Year: if he died in the middle of his last year, that whole year was counted as his (or the other way round: both "post-dating" and "ante-dating" are evidenced, and the difference does not matter for our present purpose).¹² Such a scheme, operative for the reigns of kings, was used also for the births and deaths of persons like Abraham and Jacob. Seen in this way, the use of whole numbers for lives and reigns becomes intelligible. The occasional king who reigned for only a few days or months thus made no difference to the total chronology.¹³

The second striking thing about the biblical figures is the extreme longevity of the early humans according to the data used for biblical chronology. Adam was 130 years old when he had his son Seth and he lived 800 more after that. Methuselah was the record-breaker, living to 969 years of age. This sounds like a long time. But it was as nothing when compared with figures known from Mesopotamia. By the Sumerian King List, the first king ruled for 28,800 years and the second for 36,000. A total of eight kings took up 241,000 years, and then the Flood swept over the earth. This is known from modern discovery, but similar facts had been known from the writings (in Greek) of the Mesopotamian priest Berosus (believed to have had his *floruit* about 290 B.C.). This seems to indicate a common myth, with immensely long times culminating in a disastrous flood. The Hebrew figures for the first period are very much lower but still roughly proportional and belong to a similar legendary world.

¹² Such schemes were used also for regnal chronology in Mesopotamia. See detailed discussion in J.R.M. Hughes, *Secrets of the Times*, 21, 81–90, 179–82.

¹³ This explanation, being based on Mesopotamian data, would be unknown to Ussher, to whom the periods expressed in numbers of whole years, as in the Bible, were inerrant and thus final.

That is not to say that all the biblical figures are mythical, or “symbolic” as people often say. Many of the biblical figures, for example in the reigns of individual kings, may well be historical and accurate; but others are—I would prefer to say “schematic” rather than “symbolic.” The figures were literally meant, but they were not literally true.

This is significant for the question of modern “creationism,” which will certainly be in the minds of some of you. Modern creationists commonly want a world with a shorter duration than evolutionary theory requires, a world perhaps twelve thousand or fifteen thousand years old. Such a figure would be *more like* the biblical world but would not agree with it exactly or literally. A literal biblical chronology would mean a world created in seven days about 4000 B.C., give or take one or two hundred years. But many creationists do not want to be biblical *literalists*. Of course the Bible in a general way is a big source of inspiration for their movement, but the exact figures of the Bible are not a matter of principle for them, as I understand them. In my opinion it was a big mistake for many of the mainline religious organizations when they opposed the creationists by saying that the Bible should not be taken literally. This is not what the creationists do. It is, on the contrary, what the churches and other organizations *should do*: that is, to argue that, in this respect, the Bible’s figures *should* be taken literally, because it is when they are taken literally that it becomes clear that they are not historically or scientifically true.

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