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The Schematic Development of Old Testament Chronography: Towards an Integrated Model

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Abstract

The chronological figures in the OT have been of considerable interest to early and modern scholars, but there has been little success in developing an overarching model to account for their historical development. Through a synthesis of past approaches and new insights, an attempt is made in this paper to develop a model that explains the emergence of OT chronology and accounts for the divergences that exist in the figures found in different OT textual traditions. The position taken is that OT chronology was, from its very beginnings, largely schematic in form. Further, it is argued that subsequent adjustments to the chronology were motivated mainly by changing schematic interests rather than 'rational' concerns such as the resolution of internal anachronisms or 'secret' systems of calendar reckoning (as some scholars have proposed). These schematic considerations are viewed in terms of the changing political, theological and sectarian interests of Palestine and the diaspora between the 6th century BCE and the 2nd century BCE.

Despite the prominence of chronological material in the Old Testament and the ontological importance placed on time and history in early Jewish thought, an understanding of Old Testament chronography remains one of the least developed areas in Judaic studies. For example, despite numerous attempts, there is still no coherent explanation for why the three principle surviving Old Testament versions – the Masoretic Text (MT), the Greek Septuagint (LXX) and the Samaritan Pentateuch (SP) – should present such radically divergent chronologies in the books of the Pentateuch. The explanation often given by scholars – namely, that these divergences are the result of rational solutions to internal anachronisms and contradictions in the OT chronological material¹ - fails to take into account the schematic patterns that are evident in all three chronological traditions – patterns that point to a symbolic mode of representing various political, theological and sectarian concepts through the use of numbers.

¹ See, for example, S.J. De Vries (1962), Ralph Klein (1974), Jeremy Hughes (1990) and Gerhard Larsson (1983, 2000).

In this paper, a general framework is put forward for conceptualising the development of OT chronological material in the Pentateuch, with particular attention to the ‘age of begetting’ figures found in Gen. 5 and Gen. 11. It is the begetting figures that have long formed the basis for calculating a time line of Israelite history, enabling ancient Jews and Samaritans to date significant events from the time of their supposed Creation (expressed as *Anno Mundi* (AM), or ‘year of the world’).² It will be proposed that the variations that emerged in the begetting figures were the outcome of a series of chronological revisions of an ‘original’ Progenitor Chronology devised in the late monarchical period. These revisions, it will be argued, were made primarily to accord with numerical schemas that held special symbolic importance in terms of the changing theological, political and historical considerations of the times, with ‘rational’ considerations being, for the most part, of only secondary importance.

While the argument that the surviving OT chronologies emerged from a Progenitor Chronology and are fundamentally schematic in character is not new (see, for example, Jepsen 1929; Hughes 1990), the model put forward in this paper to explain precisely how these versions emerged is the first attempt to place Old Testament chronology within a comprehensive developmental framework. This framework not only integrates many of the past findings made by scholars regarding the form taken by earlier Old Testament chronological versions, but includes a number of important new insights. For example, it will be argued that a progenitor Old Testament chronology was modified in the fourth century BCE by Jewish editors to accord with a jubilees schema similar to (although not identical with) the one that survived in the later *Book of Jubilees*. This revised chronology then underwent a series of further modifications in the third and second centuries BCE, and ultimately resulted in the four main chronological systems that have survived to our present era – the MT, LXX, SP and *Book of Jubilees* chronologies (see Figure 1).

² The lifespan figures in Gen. 5 and Gen. 11 are not dealt with at length here. These figures possibly had a separate path of development from the begetting figures.

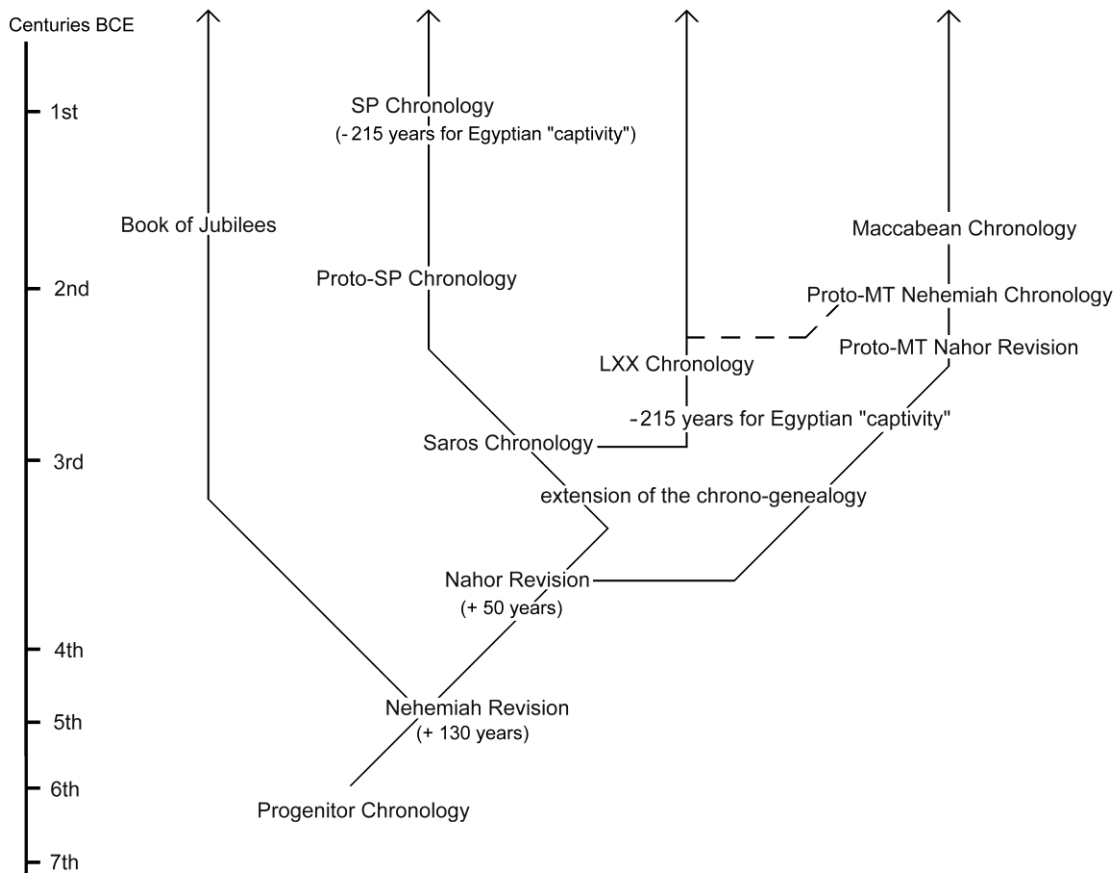


Figure 1. *Postulated Development of the OT Chronological Tradition*

Because the model put forward in this paper represents something of a synthesis of several past theories (often seen by their supporters to be conflicting), it will be helpful to begin with a brief survey of these approaches to show how they shed light on the development of OT chronology. Of particular importance will be the work of Alfred Jepsen, whose largely neglected reconstruction of the original ‘Priestly’ chronology holds the key to the developmental model that is put forward.

1. Jepsen’s Progenitor Chronology

Alfred Jepsen’s reconstruction of the Progenitor Chronology centred on a fairly straightforward assumption – namely, that the earlier OT chronology consisted of the lowest set of figures that can be gleaned from the various surviving OT manuscripts. More specifically, Jepsen combined the SP figures for the ante-diluvian generations in Gen. 5 and the MT figures for the post-diluvian generations in Gen. 11 (see Appendix). He also calculated the birth of Arpachshad as occurring three years after the flood,³

³ Jepsen based this calculation on the statement in Gen. 11.10 that Arpachshad was born two years after the flood, and he then allowed an extra year for the duration of the flood itself.

and incorporated the MT's 430-year calculation for the Egyptian period (Ex. 12.40) and its 480-year calculation for the period between the Exodus and the foundation of the 1st temple (1 Kgs 6.1). Jepsen's reconstruction produced the series of schematic dates for several key OT events shown in Table 1.

Table 1. *The Progenitor Chronology*

Flood	1307
Abraham's birth	1600
Exodus	2320 ⁴
Temple foundation	2800

An interesting aspect of Jepsen's chronology is the way in which the Exodus occurs three-fifths of the way between the time of Abraham's birth and the laying of foundations for the 1st temple. Also of interest is the pronounced 40-year schema within this chronology, with the figures given for Abraham's year of birth, AM 1600 and the foundation of the first temple, AM 2800, each being the product of 40 (1600 being 40 x 40, and 2800 being 70 x 40). This 40-year schema accords with the importance that the Deuteronomist writer placed on 40-year periods in general (such as the 40 years surrounding the life of Moses, the periods served by several of the early Judges, and the reigns of David and Solomon).

Jepsen (1929: 255) was of the opinion that the Progenitor Chronology was probably devised sometime late in the seventh century BCE prior to the destruction of the 1st temple and the Babylonian captivity. This would account for the chronology's lack of emphasis on events surrounding the destruction of the 1st temple, the Jewish return from exile in Babylon and the construction of the 2nd temple. It would also suggest that Palestine – more specifically Jerusalem - is the probable location of its composition.

There is good reason for believing that Jepsen's reconstructed Progenitor Chronology does indeed represent a very early stage in OT chronological development and is the progenitor of the four main surviving chronological traditions. As shall be demonstrated, later findings by OT scholars have provided further support for this view, even though these scholars themselves appear to have been unaware of the significance of their findings in terms of supporting Jepsen's Progenitor Chronology.

⁴ This calculation is based on adding 430 years to 1890 AM, which was the year Jacob entered Egypt (at the age of 130). See Gen. 47.9.

2. Murtonen's Maccabean chronology

In the 1950s, A. Murtonen (1954: 137) argued that the MT chronology could not have attained its final form earlier than 164/5 BCE – the date of the Maccabeans' rededication of the 2nd temple. He based his argument on his finding that, if the MT chronology was extended beyond the Babylonian exile period - using the ancient Near-Eastern king lists (see Appendix) that were likely known to Jews in the Maccabean era - it yields the highly significant date of AM 4000 for the Maccabean rededication of the temple. The logical assumption one can make from this correspondence is that, unless prophetic powers are attributed to the ancient Jewish chronographers, the composition of the MT chronology must be dated *after* the event it describes (i.e. sometime after 164/5 BCE). As Joseph Blenkinsopp remarks:

Unless this is just a remarkable coincidence, it indicates a very late date for the insertion of the chronological data, or at least for the final revision of an existing schema. (1992: 48)

Appending the Near-Eastern king lists to the OT chronology was a rather straightforward process for Murtonen (as it was no doubt for the ancient Jewish chronographers themselves), given that various dates for certain 6th century BCE Assyrian, Babylonian and Persian kings already existed in the OT. In particular, the fall of Jerusalem, which is calculated as AM 3575 in the MT chronology, is dated by the OT as occurring in Nebuchadnezzar's 18th (Jer. 52.29) or 19th year (2 Kgs 25.8; Jer. 52.12), a date which can be synchronised with the Near-Eastern king list's own date for Nebuchadnezzar's reign. The MT chronology could then be extended forward through the Persian and Greek eras to include the date provided in *1 Maccabees* 4.52 for the rededication of the 2nd temple (i.e. 148 S.E., according to the Seleucid dating system, or 164/5 BCE in modern historical reckoning).⁵

It should be noted, however, that the synchronisation of the MT's date of AM 4000 with the date of the 2nd temple rededication in 164/5 BCE is not an exact match, because the year AM 4000 actually falls on 161 BCE (if AM 3575 is calculated as Nebuchadnezzar's 18th year) or 162 BCE (if AM 3575 is calculated as Nebuchadnezzar's 19th year). However, the OT chronology is flexible enough to allow the addition of two or three years. For example, two or three years can be added for Shem's age at the birth of his first born – a calculation that, as noted earlier, Jepsen believed was made in the Progenitor Chronology.

⁵ For the method of converting Seleucid dates to modern dates, see Bickerman (1984: 61).

Blenkinsopp's reference above to a 'final revision' of the MT chronology is important, as it allows for the possibility that this 4000 years was added to a previous OT chronology. Murtonen himself points out that the 4000-year schema could have been achieved through a few key alterations to an earlier chronological system (1954: 137). Evidence of the form that this earlier 'proto' MT chronology may have taken can be found in the work of von D. W. Bousset (1900), who noticed that if 215 years (rather than 430 years) are attributed to the Egyptian captivity period in the MT chronology, the result yields a date of AM 2451 for the Exodus (rounded off to AM 2450). Significantly, this is a period equal to a 'jubilee of jubilees' (i.e. 50×49 years), which is the culminating date in the *Book of Jubilees*.

The association of the jubilee dating with the Exodus is well established in Jewish chronography: the 1st century Jewish historian Flavius Josephus calculated this same date for the Exodus in several instances (*Ant.* bk.1, ch.6.5; bk.2, ch.15.2; bk.10, ch.8.4-5). Jeremy Hughes (1990: 250) also notes this alternative method of calculating the MT figures and its correspondence with Josephus' calculation. However, with little justification, Hughes rejects Josephus' calculation here as a scribal error and makes no further mention of the possibility of an earlier Proto-MT 'Jubilees' Chronology. The reason why Hughes was sceptical about the existence of such a chronology may have been because it seemingly contradicts Jepsen's reconstruction of the Progenitor Chronology (a reconstruction that Hughes heavily favours), which posits a period of 430 years for the Egyptian captivity. Instead, the Proto-MT 'Jubilees' Chronology seems to suggest that the LXX and SP's 215-years was the original calculation.

There is, however, an alternative solution - namely, that the original calculation of 430 years in the MT was subsequently replaced by a 215-year period, only to be reinstated in the Maccabean era when this particular calculation proved useful for devising the Maccabean timeline. In fact, because the 430-year calculation had already been established in previous versions (and, as will be shown, was still circulating in various non-MT chronologies during the Maccabean era), the Maccabeans may have felt justified in re-introducing it into the MT tradition in order to legitimise events in their own time.

The existence of an earlier Proto-MT 'Jubilees' Chronology, as postulated by Bousset, is the 'missing link' between the Progenitor Chronology uncovered by Jepsen and the Proto-MT Maccabean chronology uncovered by Murtonen. Further, such a chronology could represent one of two identifiable 'Jubilee' offshoots from Jepsen's Progenitor Chronology, with the other offshoot - which will be referred to as the 'Nehemiah Chronology' - forming the basis of the LXX and SP chronological traditions, and also the chronology that survives in the *Book*

of *Jubilees*. To understand how a Proto-MT ‘Jubilees’ Chronology could have developed from the Progenitor Chronology, it is necessary to take a closer look at the Nehemiah Chronology and the jubilee schema that it followed.

3. The Nehemiah Chronology

Scholars have been baffled by the extra generation added in the LXX to the post-diluvian period – namely, the generation of Cainan (who is said to have begat Shelah at the age of 130).⁶ This extra generation does, however, appear in the 2nd century BCE work of the *Book of Jubilees*, a book that in other chronological respects owes little to the LXX. The existence of this second, independent source should suggest some caution in treating the extra generation of Cainan as merely a later interpolation made by LXX chronographers. Indeed, according to F. Bork (1929), the extra generation of Cainan was present in an earlier OT chronological tradition, but was later removed from the SP (although not the LXX), a viewpoint that is confirmed by the reconstructive model offered here.

The significance of the Cainan addition becomes clear when Cainan’s 130 years are added to the Progenitor Chronology uncovered by Jepsen. The result yields a rather schematic timeline (see Table 2).

Table 2. *The Nehemiah Chronology*

Flood	1307
Abraham’s birth	1730
Jacob in Egypt	2020
Exodus	2450
1 st Temple foundation	2930
Jerusalem fall	3360 ⁷
2 nd Temple completion	3430 ⁸
Nehemiah’s mission	3500 ⁹

⁶ See Hasel (1980) and Cassuto (1961: 251).

⁷ This calculation is based on adding together the reigns for the Judean kings provided in the MT *Book of Kings/Book of Chronicles*. The result is 430 years from the foundations of the 1st temple in the 4th year of Solomon’s reign (1 Kgs 6.1) until the fall of the Judean kingdom.

⁸ The date for completion of the 2nd temple can be calculated either by simply adding the 70 years of Babylonian captivity (Jer. 25.11; 2 Chron. 36.21) to the date of the fall of Jerusalem, or, with the aid of the Near Eastern king list, counting 70 years from the destruction of the 1st temple in Nebuchadnezzar’s 19th year (Jer. 52.12; 2 Kgs 25.8) to the completion of the 2nd temple in Darius’ 6th year (Ezra 6.15).

⁹ This calculation is based on synchronising the date provided in Neh. 2.1 (i.e. ‘the 20th year of King Artaxerxes’) with the Near East King list that has survived in Ptolemy’s Canon (see Appendix).

It can be seen from Table 2 that with the addition of Cainan, the Exodus is dated to AM 2450 or 50 jubilees (a jubilee being equal to 49 years), and the return from Babylon and/or completion of the 2nd temple is dated to AM 3430 or 70 jubilees. These dates accord with the Proto-MT ‘Jubilees’ dates for these respective events noted by Bousset (1900), while not requiring that any alterations be made to the figures contained in Jepsen’s Progenitor Chronology. In fact, it seems likely that the Nehemiah Chronology actually *precedes* the Proto-MT ‘Jubilees’ Chronology noted by Bousset, serving as its inspiration (rather than its emulation).

To understand why a reviser might want to modify the Progenitor Chronology to produce the Nehemiah Chronology, it is necessary to understand the theology underlying the Nehemiah Chronology’s timeline, and to do this, it is instructive to examine the events and schemas it emphasises. Of key interest is the motive for replacing the 40-year schema of the Progenitor Chronology with a 49-year jubilee schema. The answer would seem to be that the reviser held in high regard the laws and observances surrounding the year of jubilee (which are outlined in detail in Lev. 25 – part of a section that scholars generally identify as the ‘Holiness Code’). It is particularly appropriate in this respect that the jubilee schema in the Nehemiah Chronology should be associated with the Exodus, given that the command to observe the jubilee was, according to Lev. 25, actually given to Moses at the time of the Exodus. It is also appropriate because the requirement to free Israelite slaves and to return ‘borrowed’ land to its original owners accords well with the key events of the Exodus itself – namely the freeing of the Israelites from their Egyptian captivity and the restoration of the land of Canaan. The association of the jubilees schema with the return from Babylon makes sense for the same reason, given that this return involved the release of Jews from their captivity in Babylon and the return of Jerusalem to their possession.

Another point of interest is the date given by the reviser to Nehemiah’s mission – namely, AM 3500. This figure is significant in that 3500 years represents half of a 7000-year period. Later (circa) 1st century CE Jewish works attributed great significance to a 7000-year period, considering it as constituting the total duration of world history, a notion that may have been derived from the same tradition underlying this earlier chronology.¹⁰ The emphasis that the reviser placed on Nehemiah’s mission is also consistent with the emphasis placed on the jubilee in the chronology, for it was Nehemiah after all who ‘reminded’ the Jews to observe the code of conduct characteristic of the jubilee regulations (Neh. 5.1-13).

The Nehemiah Chronology was probably composed by Levites in Jerusalem not long after Nehemiah’s mission, perhaps sometime late in the fifth century BCE (i.e. nearing 400 BCE). The reason for identifying a

¹⁰ See 2 Enoch 33.1-2, the *Testament of Abraham* (recension B) and *Liber Antiquitatum Biblicarum* 28.8.

Levitical authorship is the chronology's emphasis on Nehemiah and the regulations of the jubilee, which are consistent with a Levitical theology. The Levites are thought to have been immensely loyal to Nehemiah, and it was he who promoted the Levites to senior posts within the temple. The Levites also had a special regard for the jubilee regulations, which preserved their 'perpetual right to redeem houses' in their towns (Lev. 25.32).

It would seem that the jubilees schema continued to govern chronological reckonings throughout the post-exilic period, and was the tradition that spawned both the Proto-MT 'Jubilees' chronological tradition noted by Bousset (1900) and the *Book of Jubilees* chronology (the latter inheriting the Nehemiah Chronology's ante-diluvian chronology and its extra generation of Cainan). But while the Nehemiah Chronology indicates a 49-year cycle for the jubilee, it seems that a modification that supported a 50-year interpretation was made by subsequent chronographers - a modification that would be preserved in the later LXX and SP chronologies and, according to Bousset (1900), would also briefly feature in the proto-MT chronology. This modification shall now be examined in more detail.

4. *The Nahor Chronology*

B.W. Bousset (1900) suggests that, at some point, the Proto-MT 'Jubilees' Chronology included an extension to Nahor's age at the birth of his first-born.¹¹ Working with the MT chronology, Bousset's reconstruction involves substituting the 29 years given for Nahor's age when his son Terah was born, with the figure of 79 years found in the LXX and SP. Bousset also ignores the 430 years given in the MT for the Egyptian captivity period (Exod. 12.40, 41), and instead employs the LXX's and SP's calculation of 215 years for this period. These modifications produce the following variant 'jubilee' timeline.

Table 3. *The Nahor Chronology*

Exodus	2500
1st Temple Completion	3000 ¹²
2nd Temple Completion	3480

While the proto-MT tradition most likely did include this modification (for reasons that will be discussed later), this tradition was certainly not the first

¹¹ See also Marshall Johnson (1988: 35).

¹² This is dated 20 years after the temple's foundation, as stated in 1 Kgs 9.10; 2 Chron. 8.1.

OT chronology to utilise it. In fact, it is my contention that this modification was made at an early stage in the pre-LXX/SP tradition, where an extension to Nahor's age of begetting from 29 years to 79 years resulted in the same timeline as noted by Bousset (i.e. Table 3), but without any adjustment needing to be made to the 430-year period spent in Egypt and using the same chrono-genealogical figures found in the Nehemiah Chronology.

The Nahor Chronology shifts the date of the Exodus to AM 2500 and results in a dating of AM 3000 for the completion of Solomon's temple. These dates mirror the 50 jubilees and 70 jubilees of the Nehemiah Chronology respectively, but count a jubilee period as 50 years in duration rather than 49 years. Incidentally, this conflict of interpretation over the correct length of the jubilee period is one that continues to divide scholars and theologians to this day (Gooder 2000: 97), just as it divided rabbis in earlier times.¹³ The lack of significance accorded to the 2nd Jerusalem temple and Nehemiah's mission might suggest that an anti-temple cult rationale underlaid the chronology. However, there is not enough evidence to conclude that the Nahor Chronology was devised outside Levite circles, or even outside the Jerusalem temple cult itself. In fact, the lack of emphasis on the foundation of the 2nd temple and Nehemiah's reforms may have simply been a means of stressing the continuity between the 2nd temple and the 1st temple - a continuity that seems to have come under question by rival groups (most notably the Samaritans¹⁴) during the 4th century BCE, and hence was in need of scriptural reinforcement.¹⁵

It is also interesting to note that the AM 3000 date for completion of the 1st temple seems to be confirmed in the text of the 2nd Book of Esdras (generally dated c.1st century CE), in which it is written:

The woman you saw in Zion, which you now see as a city complete with its buildings. She told you she was childless for thirty years; that was because three thousand years passed before any sacrifices were offered in Zion. But then, after the three thousand years, Solomon built the city and offered the sacrifices; that was when the childless woman bore a son. (10.44-46)

If this passage is taken at face value - that is, as a precise time-reckoning rather than an approximation - it would suggest that the AM 3000 dating for the temple completion in the Nahor Chronology (or a later version that preserved this date) was known to later writers. The Nahor Chronology's

¹³ See, for example, Talmud tractates *Rosh Hashanah* 9a; *Arakin* 12b; and *Abodah Zarah* 9b.

¹⁴ The Samaritans, who may have been building their own temple at Mt. Gerazim at the time (Bright 1981: 410), are described in Ezra 4 as having tried to sabotage the rebuilding of the Jerusalem temple.

¹⁵ This is a motive that some scholars (such as Williamson 1985: xxxv) believe prompted extensive revisions to the books of Chronicles, Ezra and Nehemiah around the same time.

terminus ad quem is the 3rd century BCE, by which time its descendant, the LXX chronology, had developed (see below). But the Nahor Chronology was probably devised some years before that time, perhaps sometime in the 4th century BCE, as there was yet one more stage of development that took place to the pre-LXX/SP chronological tradition before the LXX and SP chronologies emerged. This stage was marked by an expansion to the post-diluvian generations, which produced a timeline that will be referred to as the ‘Saros Chronology’.

5. *The Saros Chronology*

The Nahor Chronology was revised at some point to include an additional 600 years, which involved adding an extra 100 years for each generation from Arpachshad to Serug (with the exception of Cainan, whose age at the birth of his first born was not altered). This addition is preserved in both the LXX and SP chronologies, which some scholars (e.g., De Vries 1962: 581; Harrison 1969: 149; Klein 1974: 257-258) believe to have been a rational alteration intended to avoid the problem of Abraham’s forefathers still being alive when he left for Canaan (as is the case in the MT and presumably in the earlier chronologies). However, the addition of 600 years to the chronology produced a discernable schema (as shown in Table 4) that also needs to be considered as a motivating factor for the modifications made.

Table 4. *The Saros Chronology*

Flood	1307
Abraham’s birth	2380
Exodus	3100
1st Temple completion	3600
2nd Temple completion	4080

Of particular note is the AM 3600 dating for the completion of the 1st temple. The figure 3600 held special significance to later Palestinian religious thinkers, and certainly had significance in terms of Babylonian mathematics and astronomy, which were known to Jewish scholars (many of whom resided in Babylon). The Babylonians referred to this number as a ‘saros’ (hence the name ‘Saros Chronology’ that is given to this particular timeline in this paper). Given that 360 degrees represented a complete geometric circle in Babylonian mathematics, the Saros reviser may have viewed the number 3600 as representative of the concept of cyclic completion in regard to the temple’s construction. 3600 also marks 72

cycles of 50-year ‘jubilee’ periods, significant because the number 72 was known to have a prominent place in Jewish symbolism. It is also possible that there is a symbolic connection between the AM 3600 date for completion of the 1st temple and the 3600 chief officers that Solomon chose to supervise construction of the temple (stated in 2 Chron. 2.2 and LXX’s 3 Kgdms 2.25, although MT 1 Kgs 5.16 gives 3300).

As noted in regard to the Nahor chronology, the lack of schematic significance accorded to the Babylonian return/2nd temple is also evident in the Saros chronology, which again raises the question of whether the reviser was critical of the Jerusalem temple cult. However, it must be kept in mind that, as the basis for the later LXX chronology and pre-SP chronologies, the Saros Chronology probably wielded a great deal of ‘official’ authority (assuming, of course, that the SP and LXX are directly descended from an ‘official’ priestly text).¹⁶ For this reason it is likely that this chronology formed part of the official temple OT edition, and that its author, like the Nahor Revisor before him, was simply downplaying the exile and the foundations of the 2nd temple in order to highlight the continuity between the first and second temples.

It is also possible that twenty years were added to Methuselah's age of begetting in a later version of the Saros Chronology (a modification that was thereafter preserved indirectly in the LXX and MT chronologies). This would have resulted in a date of AM 2400 for Abraham's birth and AM 3600 for the foundation of the 1st temple, hence conforming overall to a neat 1200-year schema.

The *terminus ad quem* of the Saros Chronology is the 3rd century BCE. By this time, the chronology had been modified to accord with the timeline that survives in the existing manuscripts of the LXX.

6. The LXX Chronology

The Saros Chronology was revised at some point in the 3rd century BCE to include yet a further extension to the timeline. This revision has been preserved, with perhaps some semblance of its original form, in the surviving LXX manuscripts. The LXX Chronologer(s) made a number of significant changes. First, and most noticeably, an extension was made to the ante-diluvian period (i.e. the period before Noah), with the LXX chronology adding 100 years to each ante-diluvian generation from Adam to Enoch, an extra 100 or 120 years for Methuselah, and an extra 135 years for Lamech.¹⁷

¹⁶ Eugene Ulrich, for example, views the LXX as largely ‘a faithful, not innovative in content, translation of the sacred text’ (1999: 42).

¹⁷ Norbert Lohfink (1994) attributes rational motives for the extension to the ages of begetting in the LXX, arguing that this enables all the ante-diluvian ancestors (with the exception of Adam and Noah) to

A second modification made by the LXX Chronologer was a reduction of the Egyptian captivity period to 215 years. This change may have reflected the views of the 3rd century BCE Egyptian historian, Manetho, who talked of the invasion, reign and eventual expulsion from Egypt of the ‘Hyksos’ kings, who are said to have subsequently established the city of Jerusalem.¹⁸ Egyptologists tend to date the start of the Hyksos era to the second intermediate period, in the mid-17th century BCE, and it is the Hyksos (or ‘Shepherd’) kings of this period whom Josephus, a 1st century CE Jewish historian, associated with the Israelite migration to Egypt in the time of Jacob (*Contra Apionem*, bk.1, ch.14). Earlier Jewish chronographers may have arrived at a similar conclusion and, noting that the 430-year captivity of the previous timeline placed the migration at least two centuries too early, reduced the Egyptian period by 215 years. By also reducing the period from the Exodus to the foundations of the 1st temple by 40 years (giving a total of 440 years altogether), the revisors thus managed to coincide the migration with the start of the Hyksos period. Employing these figures, it is possible to work back from the fall of Jerusalem (which in modern Julian reckoning occurred in 586/7 BCE) and see that the LXX’s calculation of 1085 years prior to this event (i.e. 430 years for the Judean reigns + 440 years + 215 years) places the Egyptian migration in 1671/2 BCE, near the beginning of the Hyksos era as dated by Egyptologists.

It has yet to be established, however, whether 3rd century BCE Jews were actually familiar with a timeline of Egyptian kings similar to the one reconstructed by modern Egyptologists.¹⁹ At any rate, in contrast (or in addition) to the Hyksos hypothesis - which can be considered a ‘rational alteration’ on the part of the reviser(s) - attention should be paid to the schematic patterns that are also produced by the modifications made. Unfortunately, an examination of the schematic form of the LXX chronology is complicated by the fact that this chronology survives today in several different versions that contain minor, yet numerous, variations, none of which have yet been definitively established as representing the ‘original’ LXX version. Even the 5th century CE text of the Codex Alexandrinus (LXX^A), which is the earliest surviving manuscript containing the chrono-genealogy²⁰ (and the chronology most supported in the other LXX manuscripts), contains variable figures for Enosh’s and Methuselah’s age of begetting. However, if the variations in the LXX^A are examined, traces of schematic development are revealed that (if accepted as

be alive to witness Enoch’s assumption into heaven (1994: 158). However, a simple extension to their life spans would have achieved the same result.

¹⁸ Preserved as a fragment in Josephus’s *Contra Apionem*, bk.1, ch.14.

¹⁹ Unfortunately, Manetho’s Egyptian king list, which is the only ancient source that posits a date for the Hyksos period, seems to have suffered considerable corruption, given that the fragments preserved by Africanus, Eusebius and Josephus significantly disagree with one another (see Waddell 1940).

²⁰ The Vatican version (LXX^B) is lacking Gen. 1:1 - 46:28.

being of early antiquity) can give us some indication of the schematic thinking of the LXX chronologer in the 3rd century BCE.

The first variation can be seen in the original surviving text of the LXX^A, which gives 90 years for Enosh's age of begetting and 167 years for Methuselah's age of begetting. This produces a chronology (see Table 5) that, if two years are deducted somewhere along the timeline for the ante-diluvian era, results in a AM 3500 date for Jacob's migration to Egypt (an event which undoubtedly held a great deal of significance for Jews who had migrated to Egypt).

Table 5. *Original LXX^A Chronology*

Flood	2140
Abraham's birth	3210
Abraham in Canaan	3285
Jacob in Egypt	3500

A second variation of this chronology is the one known to some of the early Christian writers such as Theophilus (late 2nd century CE)²¹ and Eusebius (early 4th century CE),²² and is preferred as the original figures by some modern scholars (e.g., Hughes 1990: 14n.; Klein 1974: 259-60). This variation consists of a 190-year (corrected) reading for Enosh's age of begetting. Interestingly, this alternative reading, which dates the flood in AM 2242, also reveals a schematic pattern in the chronology – namely, that if two years are deducted from the timeline (as in the 'original' version noted above), Jacob's entry into Egypt would have occurred in AM 3600, which neatly fits in with the saros schema discussed earlier.

The third version of the chronology is found in the corrections that appear in the surviving LXX^A manuscript for Enosh and Methuselah's ages of begetting (given as 190 years and 187 years respectively), and it is possible that the early editor who inserted these corrections was familiar with a 'superior' reading of the text in which these figures were found. Indeed, the 'corrected' LXX^A version of the ante-diluvian generations agrees with the figures put forward by a number of early Christian writers, such as Josephus (1st century CE),²³ Julius Africanus (3rd century CE),²⁴ Epiphanius of Salamis (late 4th century CE)²⁵ and St. Augustin (early 5th

²¹ *Theophilus to Autolytus*, bk. 3, chs. 24 and 28.

²² See Eusebius of Caesarea's *Chronicle*, bk.1 (Schoene 1967[1875]: 125).

²³ Specifically, the version of *Antiquities* bk.1, ch.3, vs.3, preserved in the 14th century CE Codex Regius Parisinus manuscript.

²⁴ Fragments 3 and 5 in Julius Africanus's *Chronography* (reprinted and translated in Roberts & Donaldson 1957: 131).

²⁵ Epiphanius's *Panarion* (Haer. I).

century CE).²⁶ The corrected figures also agree with the total that can be calculated from the figures provided by the ancient chronographer Demetrius (late 3rd century BCE).²⁷ The (corrected) LXX^A chronology for the pre-settlement period schematic pattern can be seen in Table 6.

Table 6. *Amended LXX^A Chronology*

Flood	2262
Abraham's birth	3334
Abraham in Canaan	3409
Jacob's birth	3494
Jacob in Egypt	3624
Exodus	3839
Israelite settlement	3879

Although there is no evident schema in the pre-settlement time line above, the schematic nature of the chronology becomes apparent when the post-settlement period is calculated using the MT's Judean regnal figures (see Appendix), as can be seen in the following table (Table 7).

Table 7. *Amended LXX^A Post-settlement Chronology*

1 st Temple foundation	4277
Jerusalem fall	4707
2 nd Temple completion	4777

It is the 777 aspect of this final dating that seems to have been the main consideration in the LXX chronographer's reckoning - a figure that probably had importance in Jewish-Greek numeric symbolism generally (with 777 years being the length of Lamech's lifespan in the MT, and a seven-fold division later being central to the structure and symbology of the *Book of Revelation*). The figure may also have had some correspondence with the MT's date of AM 2666 for the Exodus (which will be discussed later).

The AM 4777 dating and the other variations outlined above rely on the figures for the Judean kings found in the pre-LXX chronologies (i.e. those that have survived in the MT) and those that can be calculated from the LXX *Book of Chronicles*.²⁸ In contrast, the regnal figures provided in

²⁶ St. Aurelius Augustin's *City of God*, bk.15, ch.20.

²⁷ Fragment 2, preserved in Eusebius' early 4th century CE work, *Preparation for the Gospel* (bk.9, ch.21).

²⁸ This supports Edwin R. Thiele's (1951: 202) contention that the MT regnal figures are original, with the LXX's variant readings being late modifications.

surviving LXX manuscripts of the *Book of Kings* vary considerably (both from the MT and from each other).²⁹ For example, the regnal chronology found in the LXX^A *Book of Kings* adds 45 years to that found in the MT *Book of Kings*. Interestingly, this extra 45 years accords with the alternative LXX chronologies mentioned earlier, producing dates of AM 4700 for the return from Babylon if the ‘original’ LXX^A figures for Enosh and Methuselah are accepted, and AM 4800 for the same event if the original figure for Methuselah alone is accepted. This latter dating, in fact, marks 1200 years from Jacob’s entry into Egypt until the Israelites’ return from Babylon, and places the former event precisely three-quarters of the way through the total 4800-year period. It is possible, therefore, that even the modified figures produced by the Kaige recension of the LXX^A *Book of Kings* were intended to serve a schematic purpose.

Demetrius himself is of little help in clarifying which figures the LXX originally employed for the Judean regnal period, for the surviving fragments of his work do not preserve his overall calculations for this period, and certainly not for the period where the LXX manuscripts differ. There may, however, be confirmation of the AM 4777 dating (and, hence, of the MT regnal figures that it was probably originally based upon) in the chronological work of Eupolemus, a Palestinian Jewish historian who wrote in Greek in the mid-2nd century BCE (Schafer 1977: 546-7). Eupolemus calculated the 5th year of king Demetrius (not to be confused with Demetrius the chronographer) as AM 5149.³⁰ While scholars debate whether he was referring to Demetrius I or Demetrius II (Hughes 1990: 243-244), it just so happens that the 5th year of Demetrius II (141 BCE) would, according to Eupolemus’s chronology, place the completion of the 2nd temple (515 BCE) in AM 4775 (4775 = 5149 – 374) - just two years short of AM 4777.

Regardless of which reading of the LXX is accepted (and we might keep in mind here the possibility that a number of LXX versions circulated from a very early date), there seems sufficient evidence to conclude that schematic considerations motivated the calculation of the LXX chronology. In fact, in addition to the schematic patterns already discussed, it would seem that, overall, the LXX chronology was attempting to fit into a 5000-year schema of world history - a schema that was, perhaps, influential at the time of its composition. An AM 5000 date would, in the (corrected) LXX^A chronology, fall in c.292 BCE – a few years after Palestine came under the control of Ptolemaic Egypt in 301 BCE, and just a few years prior to the accession of Ptolemy II Philadelphus in 285 BCE (the king who, according to legend, requested the LXX translation be made).³¹ It was probably around this time, then, that the LXX chronology was devised.

²⁹ See Galil (1996: 159).

³⁰ Fragment 5, preserved in Clement of Alexandria’s *Stromata* (bk.1, ch.21).

³¹ See the *Letter of Aristeas* (Thackeray 1902).

It was certainly devised no later than 222-205 BCE, when, as noted above, Demetrius made his calculations in accord with the amended LXX^A chronology (Wacholder 1968: 456).

7. *The SP chronological tradition*

Yet another chronological tradition developed from the Saros Chronology around the same time as the LXX and served as the prototype for the Samaritan Pentateuch (SP) chronology. Whereas the LXX lengthened the Saros Chronology's ante-diluvian generations and halved the period of Egyptian captivity, this proto-SP chronological tradition took the Saros Chronology in another direction altogether. First, the extra generation of Cainan was dropped in accord with the Progenitor and MT chronologies. Second, two to three years were deducted from the dating of the flood (as per the LXX and the MT chronologies). Finally, seven years were subtracted from the chronology somewhere along the timeline (although were later restored). The result was the Proto-SP chronology that John Skinner (1910) has identified, shown here in Table 8.

Table 8. *The Proto-SP Chronology*

Shem's birth	1200
Flood	1300
Abraham's birth	2240
Jacob's birth	2400
Joseph's death	2600
Israel's settlement	3000

Skinner remarks:

[I]f we assume MT of Ex. 12 to be the original reading..., we find that [the SP]... counts from the Creation to the entrance into Canaan 3007 years. The odd 7 is embarrassing; but if we neglect it (see Bousset, 146) we obtain a series of round numbers whose relations can hardly be accidental. (1910: 136)

Skinner goes on to explain the schematic system that he contends lies within this chronology. He writes:

The entire period was to be divided into three decreasing parts (1300 + 940 + 760 = 3000) by the Flood and the birth of Abraham and of these the second exceeds the third by 180 years, and the first exceeds

the second by (2 x 180 =) 360. Shem was born in 1200, and Jacob in 2400. (1910:136)

While the surviving SP text does not proceed beyond the settlement period, there is no reason to believe that its forerunner did not. In fact, when the Proto-SP Chronology is extended, a definite schematic pattern emerges. Assuming that the Proto-SP chronology, like the LXX, calculated 440 years between the Exodus and the foundations of the 1st temple and employed the Progenitor Chronology's (as per the MT's) regnal list, the following key dates are produced for post-settlement events (Table 9):

Table 9. *Proto-SP Post-settlement chronology*

1 st Temple foundation	3400
Samarian famine ends	3500
2 nd Temple completion	3900

The AM 3500 dating is interesting, in that it would fall on the 3rd year of Ahab's reign. According to 1 Kings 18:1, this is the year that Elijah brought an end to the famine in Samaria after his dramatic showdown with the prophets of Baal. Also, the fall of Jerusalem would, according to this reckoning, correspond to AM 3830, and the return from Babylon and/or the completion of the 2nd temple would have taken place in AM 3900. The only significant figure missing from this chronology is AM 3600, which, if present, would have completed the 1200-year schema evident within the chronology.

It is clear, however, that it is a 1300-year rather than a 1200-year schema that is dominant in this chronology. In this respect, the significance of the flood dating (AM 1300) can be noted as comprising one-third of the period from Creation to completion of the 2nd temple. Also, the year AM 2601, which lies two-thirds of the way through this period,³² marks the death of Joseph, the patriarch who was sometimes used in the O.T. to symbolise the northern tribes of Samaria (e.g., Ezek. 37.16, 19). Finally, the culminating date of AM 3900 for the completion of the 2nd temple probably relates to the 390-day/year period allotted for the punishment of Samaria, as prophesied in Ezek. 4.5.³³ Indeed, it seems that an association with punishment is the common feature of the 1300-year intervals of the Proto-SP chronology: first, the flood; and later, the

³² The year of Joseph's death is calculated as follows. According to Gen. 47.9, he was 39 years old when Jacob was 130 years old (i.e. 30 years old when appointed governor as per Gen. 41.46, plus seven years of plenty as per Gen. 41.47, plus two years of drought as per Gen. 45.6), and died at the age of 110 (Gen. 50.26). Hence, Joseph's death occurs 71 years after Jacob's migration.

³³ This period is given in the LXX as 190 days/years.

Israelites' fall from favour in Egypt (marked by Joseph's death). As for the significance within the schema of the Jewish return from Babylon and/or completion of the 2nd temple, this might have served to mark the end of Samaria's period of punishment, for Samaritan tradition (as revealed in the *Samaritan Chronicle*) held that their own Mount Gerazim temple was founded in the same year as the 2nd Jerusalem temple.³⁴

The Proto-SP Chronology is an early version (or forerunner) of the chronology that appears in the surviving texts of the Samaritan Pentateuch. The final version of the SP included the following modifications: a rejection of 430 years in favour of 215 years (in accord with the LXX and proto-MT); the restoration of the 7 years that were removed from the Proto-SP Chronology; and the addition of three years, perhaps to account for Arpachshad's birth after the flood. The resulting chronology that survives in the SP is shown in Table 10.

Table 10. *SP Chronology*

Flood	1310
Abraham's birth	2250
Abraham in Canaan	2325
Jacob's birth	2410
Jacob in Egypt	2540
Exodus	2755
Israelite settlement	2795 ³⁵
Division of the Land	2800

The date of AM 2800 is based on the 5-year period implied in the *Book of Joshua* for the conquest of Israel,³⁶ and was considered by Jepsen (1929: 253) to be the date when the SP Chronology culminates. In light of the Progenitor Chronology's dating of the 1st temple in AM 2800, Jepsen wonders if the Samaritan chronologer sought to establish that a sanctuary at Mt. Gerazim was also built at this time. Indeed, the *Samaritan Chronicle* (vol. 1, ch. 24) states that, upon conquering the land, a synagogue was built by Joshua on Mt. Gerazim to house the tabernacle.

If the Samaritan chronologer did, in fact, emulate the Progenitor Chronology's AM 2800 dating, then it would suggest that Palestinian writers were still familiar with the Progenitor Chronology at a relatively late date. The precise date of the SP Chronology's composition is,

³⁴ See Oliver Turnbull Crane's (1890) translation of T.W.J. Juynboll's (1848) edition of the *Samaritan Chronicle*, ch. 45. For a discussion of the possible ancient origins of this c.14th century CE manuscript, see Macdonald (1969).

³⁵ *The Samaritan Chronicle* (ch. 15) dates the crossing of the Jordan in 2794 AM, obviously adding only two years (rather than three) for Arpachshad's birth after the flood.

³⁶ This 5-year calculation is based on Caleb's statement in Josh. 14.10 that 45 years had passed since Moses sent him to spy on the land - a mission that, according to Num. 13, took place in the first year of the Exodus.

however, uncertain, but the chronology's final form was probably devised in the 2nd or 1st century BCE, when the Samaritan Pentateuch as it is known today seems to have come into being (Cross 1964). Meanwhile, the Jerusalem temple-cult seems to have found favour with the proto-MT chronological tradition, which shall now be discussed in some detail.

8. The MT chronological tradition

Unlike the LXX and SP, the Proto-MT Chronology does not seem to have been an offshoot of the Saros Chronology but, rather, a direct descendant of the earlier Nahor Chronology. Instead of simply preserving the Nahor Chronology, however, the proto-MT chronological tradition followed certain trends found in contemporaneous chronological traditions (most notably the LXX). For example, the ante-diluvian figures were expanded in accordance with the trend to push back the age of Creation (as occurred in the LXX and Proto-SP chronologies). These expansions correspond to the LXX figures, with Jared and Methuselah's ages of begetting being identical, and Lamech's age of begetting being very similar (182 in the MT and 188 in the LXX). The proto-MT chronographer also made the following changes: two to three years were deducted from Shem's age of begetting Arpachshad (in accordance with the LXX and Proto-SP chronologies); the generation of Cainan was omitted (in accordance with the Proto-SP Chronology); and the period of captivity in Egypt was halved from 430 years to 215 years (in accordance with the LXX and SP chronologies).

Although these alterations yielded the same AM 2500 date for the Exodus that is found in the Nahor Chronology, the time of Creation differed in that it was pushed back to an earlier dating and a new date of AM 1656 was established for the Flood. The revised chronology produced the following key dates (Table 11):

Table 11. *Proto-MT Nahor Chronology*

Flood	1656
Abraham in Canaan	2070
Jacob in Egypt	2285
Exodus	2500
1 st Temple completion	3000

According to Jules Oppert (1903), the proto-MT's date for the flood was intended to correspond to the flood date in the king list devised by the 3rd century BCE Babylonian historian, Berossus. Berossus himself drew on

older Sumerian and Babylonian chronological traditions, which, much like the OT chronographers, he appears to have flexibly reworked according to his own schematic leanings.³⁷ Oppert contends that the OT's 1656 years (approximately 86 400 weeks) is a translation of Berossus' figure of 432 000 years for the Flood (= 86 400 sosses).³⁸

If Oppert's reasoning for the dating of the Flood is accepted, and if it can be safely assumed that the proto-MT chronologer derived the Flood date from Berossus and not vice versa, then it suggests that the Proto-MT Nahor Chronology was composed after Berossus' era (c.285-261 BCE), which certainly fits the developmental time frame that has been presented in this paper. The chronology's *terminus ad quem* is the mid 2nd century BCE when the Maccabean revision was carried out.

Prior to the Maccabean revision, however, the Proto-MT Chronology was modified slightly to accord with the 49-year jubilee schema found in the earlier Nehemiah Chronology (which may have continued to serve as the official version for some Jewish groups, such as those in Babylon, even while it underwent extensive modification by the temple priests in Jerusalem). Specifically, the modification involved restoring Nahor's original age of begetting (as found in the Progenitor Chronology and the Nehemiah Chronology), which effectively reduced the overall chronology by 49 years (an adjustment that survives in the present MT). This modification, which accords with the chronology identified by Bousset (1900), places the Exodus in AM 2451, the return from Babylon and/or completion of the 2nd temple in AM 3431, and Nehemiah's mission in AM 3501.

The restoration of the Nehemiah Chronology might possibly be explained by renewed support for the 49-year jubilee period and/or the schematic importance of the 2nd temple and Nehemiah's mission. Alternatively, the restoration may have marked the 'official' acceptance of the updated chronology by the diasporic Jewish community in Babylon, who may have considered themselves to be custodians of the original Nehemiah chronological tradition.

The association of the Proto-MT Nehemiah Chronology with the diaspora in Babylon is largely based on Frank Moore Cross's (1964) view that the proto-MT textual tradition itself developed in Babylon. It also makes sense in this respect that such a long-standing OT chronological tradition (one that seems to have been known to Josephus in the 1st century CE) would have developed in a strong, stable and influential Jewish community such as that which flourished in Babylon, which perhaps avoided much of the political and sectarian turmoil (and the immense

³⁷ For an examination of surviving fragments from these earlier Sumerian and Babylonian traditions, see Lambert (1973), Finkel (1980) and Jacobsen (1981).

³⁸ 1656 years is exactly 86 407.7 weeks.

redactional activity that was perhaps symptomatic of such turmoil) that occurred in Jerusalem throughout the 2nd temple period.

Irrespective of where the proto-MT chronological tradition developed, however, it is almost certain that the final revision of the MT chronology occurred in Jerusalem in the mid-2nd century BCE. It was at this time that the Maccabean family gained power in Palestine and a pro-Maccabean editor revised the Proto-MT Chronology (which was perhaps introduced to Palestine in the Maccabean era) to celebrate the rededication of the 2nd temple. To achieve this end, the 430-year calculation for the Egyptian period was reinstated from the earlier chronologies, producing the chronology that survives in the MT today (Table 12).

Table 12. *MT 'Maccabean' Chronology*

Flood	1656
Abraham's birth	1946/1948
Jacob in Egypt	2214/2216
Exodus	2666/2668
Temple completion	3166/3168
Fall of Jerusalem	3575/3577
2 nd Temple rededication	3998/4000

The AM 2666 date for the Exodus falls two-thirds of the way through the period between Creation and the temple rededication in AM c.4000 (Blenkinsopp 1992: 48), thus contributing to the 'prophetic' nature of the Maccabean rededication of the temple. Also, according to Alfred von Gutschmid (cited in Skinner 1910: 135), the figure 2666 corresponds to the $26\frac{2}{3}$ generations that elapsed between Adam and Moses at the time of the Exodus (Moses being 80 years old at the time, with 40 years of his lifetime remaining).

The significance of the AM 2666 date is probably the reason why the Maccabean chronographer did not wish to definitively reinstate the Progenitor Chronology's additional two or three years for Shem's age at the birth of his first born (an adjustment that would have dated the rededication of the temple at precisely AM 4000, as discussed earlier). By leaving Shem's age at the birth of his first-born ambiguous, both the AM 2666 date for the exodus and the AM 4000 date for the temple rededication could be precisely reckoned from the chronology using alternative systems of calculating Shem's age of begetting (as shown in Table 12).

After the final revision of the MT Chronology, other chronographers added extra dates (although they did not change the basic timeline itself). For example, the dating of Jehoiachin's release from prison in the 37th year of his exile (2 Kgs 25.27; Jer. 52.31), which coincides with the great saros

year AM 3600, may have been inserted at this time.³⁹ An alteration was also made to the length of Saul's reign, which was assigned an unlikely 'two years' (1 Sam. 13:1).⁴⁰ This calculation placed Saul's accession in AM 3100, thus producing a neat 500-year period from his accession to Jehoiachin's release. Yet another chronographer may have inserted Jer. 52.30, which states that Nebuzar-adan carried the people away to Babylon in Nebuchadnezzar's 23rd year – a dating that corresponds to AM 3650 and quite possibly relates to the 365-day solar calendar.⁴¹ Indeed, calendrical schemas seem to have been immensely popular with 2nd-1st century BCE Jewish chronographers, as indicated by schemas of this type found in yet another great chronological tradition that emerged during this period – the *Book of Jubilees*' chronology. It is this chronological tradition - the final one that will be addressed in terms of the developmental model being presented here – that will be examined next.

9. *The Book of Jubilees*' Chronology

The *Book of Jubilees* is an historical account of the period from Creation to the settlement in Israel following the Exodus, providing a chronology of events that is explicitly dated in terms of jubilee periods (of 49-year intervals) and 'weeks of years' (i.e. of seven-year intervals). It generally follows the SP chronological tradition for the ante-diluvian generation figures (see Appendix), and also includes the extra generation of Cainan which is characteristic of the LXX chronology. Consequently, many scholars consider the *Book of Jubilees*' chronology to have borrowed these features from two of its contemporaries - the SP and LXX chronological traditions (Hasel, 1980). However, as the development model presented in this paper indicates, these particular features are also characteristic of earlier OT chronologies from which the SP and LXX later developed, such as the Nehemiah Chronology. In fact, with respect to the Nehemiah Chronology, the *Book of Jubilees*' shares with it a feature not found in the SP or LXX versions at all – namely, its culminating date of AM 2450. For this reason, rather than being a hybrid of the SP and LXX chronologies, it seems more likely that the *Book of Jubilees*' chronology developed relatively independently of them, being instead a direct descendent of the Nehemiah Chronology.

The *Book of Jubilees*' chronology departs in some significant ways from the Nehemiah Chronology, however – a departure that indicates a considerable evolution from the earlier chronology. Most significantly, the

³⁹ Mention of Jehoiachin's release is notably absent in 2 Chron.

⁴⁰ This figure is sometimes amended in modern translations to 'twenty-two years'.

⁴¹ Jer. 52.28-30 is absent in the LXX, and is generally considered to be a late addition to the MT version of Jeremiah (Jones 1992: 548-549).

Book of Jubilees provides a different set of ages of begetting for several post-diluvian generations, ranging from a surprising 12 years for Peleg to 108 years for Reu. There are certain schematic structures evident in the resulting chronology that provide clues to the rationale behind at least some of the changes. These structures become evident upon a close inspection of the *Book of Jubilees'* chronology (as preserved in Ethiopic manuscripts) shown in Table 13 below.

Table 13. *Book of Jubilees' chronology*

Noah (birth)	701-707/708
Flood (start)	1062/1309
Tower of Babel	1590-1633
Abraham (birth)	1876
Jacob (birth)	2046
Jacob in Egypt	2172
Exodus	2410
Israelite Settlement	2450

The first point to note in the above table is the AM 1062 dating for the Noah's flood which, according to the surviving Ethiopic manuscripts of the *Book of Jubilees* (5.22-23), corresponds to the 6th year of the 5th week (of years) in the 22nd jubilee, or, perhaps more significantly, to 3 x 354 'lunar' years (354 being the number of days in a Jewish lunar year). The resulting chronology yields a two-third schema: Noah being born two-thirds of the way through the period between Creation and the start of the Flood (approximately 2 x 354 'lunar' years); the start of the Flood occurring two-thirds of the way through the period between Creation and the construction of the Tower of Babel; and the construction of the Tower itself occurring two-thirds of the way through the period between Creation and the final Israelite Settlement. This schema is reminiscent of the two-third schema found in the Proto-SP chronology (which was marked by the death of Joseph in Egypt) and also found in the MT Maccabean chronology (which was marked by the Exodus). The correspondence between the two-third schema and events involving punishment would seem to reflect a late Jewish theology which might have been drawn from Zech. 13.8 and its message that two-thirds of the people shall be 'cut off' from the land of Israel as punishment for their sins.

Despite their prominence as overarching schemas in the Jubilees chronology, it should be noted that both the two-third schema and the lunar-year schema are likely to have been late modifications, with the AM 1307 date for the start of the Flood suggested elsewhere in the text (Jub.

6.18) likely to be the more original (Hughes 1990: 23)⁴² – a supposition supported by three principle factors. First, an AM 1307 date is consistent with the dates for events preceding the flood, such as Noah's marriage in AM 1207 and his begetting of Shem two years later (Jub. 4.33). Second, the emphasis on a lunar year schema contradicts the strong condemnation of the lunar calendar made in several places in the *Book of Jubilees* (e.g., Jub. 6.32-38). Indeed, Jacob's birth 364 years before the Exodus would indicate that the solar year schema was intrinsic to the chronology (as it is to the *Book of Jubilees'* Flood chronology). The third factor is that the Tower of Babel date – in fact, the whole story surrounding the construction and fate of the Tower – has all the hallmarks of being a late interpolation. For example, the date given for the Tower of Babel (1590-1633) can be seen to contradict the earlier date given for the division of the land (AM 1569), which was probably traditionally associated with the dispersal of the people following the destruction of the Tower.⁴³ The later reviser appears to have tried to downplay this contradiction by shifting the occupancy of the divided land (Jub. 10.28-36) to after the fall of the Tower (Jub. 10.18-27), a shift that results, however, in a rather fragmented and confused narrative that essentially gives two different explanations for why the dispersal of the people occurred. It also results in an anachronism with respect to Noah's death, which is announced prior to the construction of the Tower, but which is not supposed to occur (if the timeframe of the chronology is followed) until several years *after* the destruction of the Tower. Even Jacques van Ruiten (2000), who generally treats the *Book of Jubilees* as an integrated, harmonious account, describes this anachronism as being 'somewhat peculiar' (p.342).

If these interpolated dates are ignored, then an original chronology can be postulated that – with the exception of the AM 2450 date and possibly the 364-year period from Jacob's birth until the Exodus – is rather unschematic in nature. In the absence of any obvious schema that would explain the original chronology then, it could be argued that its extension of the Shemite chrono-genealogy merely reflects the unique challenge faced by a chronologer wishing to employ a reduced Egyptian captivity period (in accord with the kind of historical thinking of the time that seems to have been reflected in, for example, the LXX chronological changes) yet still arrive at a AM 2450 date for the return to the Promised Land.⁴⁴

The interest shown by the *Book of Jubilees* chronographer in a culminating year of AM 2450 continues a jubilees tradition that began with the Nehemiah Chronology and was upheld by the 3rd or early 2nd century BCE Proto-MT Chronology (and a few other 2nd-1st century BCE sectarian

⁴² Charles (1917: 59) simply amends the date in question to the '27th jubilee'.

⁴³ See Gen. 10.25, 32; 11.1-9.

⁴⁴ The *Book of Jubilees* calculates the Egyptian period as 238 years.

texts).⁴⁵ The composition dates for the original *Book of Jubilees* chronology and its ‘lunar’ revision, however, are uncertain, although most scholars date the *Book of Jubilees* to the mid-second century BCE, sometime between 160 and 140 BCE in the early years of the Maccabean revolution (Wintermute 1985). There is also uncertainty surrounding the sectarian leanings of the document. Some scholars (e.g., Nickelsburg 1984: 79) attribute the *Book of Jubilees* to an Enochian sect (so dubbed because of their supposed authorship of *1 Enoch*). However, the fact that the *Book of Jubilees*’ chronology is likely a derivation of the Levite-authored Nehemiah Chronology (from which the Proto-MT Chronology also took its inspiration) supports those who view the *Book of Jubilees* as being a more conservative text (e.g., Wintermute 1985: 48). Given the manner in which some of the dates preserved in fragments of the *Book of Jubilees* found at Qumran disagree with the Ethiopic manuscripts,⁴⁶ however, caution should be exercised in inferring too much from the surviving chronology. More investigation of this matter is clearly required.

Conclusion

The MT chronology, together with the chronological material found in the LXX, SP and *Book of Jubilees*, are our only surviving witnesses to the OT chronological tradition that, as has been postulated in this paper, was developed over a period spanning several centuries. In this paper an attempt has been made to reconstruct this path of development from an originating, ‘progenitor’ version. Towards this end, support has been given to the validity of A. Jepsen’s (1929) reconstruction of the Progenitor Chronology by offering a model of how this chronology might have developed sequentially into later versions. In particular, it has been demonstrated that the Progenitor Chronology was modified in accordance with a jubilees schema that was dominant in the OT chronologies of the 5th to 3rd century BCE. It is these OT-based jubilee chronologies that have been shown in this paper to comprise the ‘missing link’ between the Progenitor Chronology and the final OT chronologies that have survived.

In general, the proposed model has emphasised a progressive development of OT chronology in Scripture, with each chronology being a revision of a prior one. The failure to produce such a developmental model in the past is perhaps the main reason why Jepsen’s reconstruction has not received the recognition amongst Old Testament scholars that it rightly

⁴⁵ A period of ‘ten jubilees’ is allotted for the period from exile to the coming of the Messiah in the Melchizedek Document. The same 490-year period is also suggested by the ‘seventy weeks’ (i.e. 70 x 7) in Dan. 9.24.

⁴⁶ Document 4Q219, for example, dates the death of Abraham in the forty-third rather than forty-fourth jubilee (Attridge et al. 1994).

deserves,⁴⁷ and why the misguided debate over which of the surviving chronologies represents the ‘original’ chronology has failed to be satisfactorily resolved. In particular, this paper has challenged the view current among OT scholars that the major shifts in Old Testament chronology were primarily based on ‘rational alterations’ or ‘secret calendar systems’. Instead, a schematic explanation has been proposed as the most likely rationale for the changes that were made to successive chronologies. In regard to the rational alterations noted by various scholars, it could be argued that rational issues – to the extent that they had any influence at all – were merely a secondary consideration, serving perhaps as a convenient justification for the more schematic-based changes desired by the chronographers for sectarian reasons. With respect to the idea that the OT contains secret calendar systems, as promoted most recently by Gerhard Larsson (2000), this paper has argued that schematic considerations alone (which occasionally included calendrical-based schemas) are sufficient to explain the system of calculating dates employed by the chronographers. To the degree that these schematic systems appear to be ‘secret’, this has been more the result of disturbances to the surviving texts through rescensional activity than to any active concealment undertaken by the ancient chronographers themselves.

A final point that should be made is that although the strength of the model presented in this paper currently lies more in its developmental rationale than in any direct textual or historical support, this is an unavoidable consequence of the fact that little literature has survived from the period between Nehemiah’s mission and the Maccabean era (literature, at least, that can be reliably dated as such) that might either confirm or invalidate the reconstructive model presented here. As for the Qumran manuscripts, they are of little help since they either merely confirm the chronological figures that survive in their final 2nd century BCE form in the *Book of Jubilees*, MT, LXX and SP, or they append their own calculations to the existing OT timelines.⁴⁸ The Qumran texts’ lack of usefulness in regard to chronography is not surprising, given that the manuscripts themselves are generally dated no later than the 2nd century BCE, by which time the main surviving OT chronologies had more or less been finalised. Further, the chronological material in the Qumran manuscripts is very fragmented and mostly refers to the post-Abrahamaic OT timeline, which, since the Progenitor Chronology, had undergone few modifications anyway. We are fortunate, however, to at least have the final form of the chronologies preserved in several different OT traditions, even though the

⁴⁷ See, for example, U. Cassuto (1961: 254) and G.F. Hasel (1980). Two exceptions are Jeremy Hughes (1990) and Norbert Lohfink (1994: 159), who have offered strong support for Jepsen’s reconstruction.

⁴⁸ For example, ‘The Damascus Document’ provides a brief timeline for sectarian events after the fall of Jerusalem (CD 1: 5-9), while the ‘Testament of Levi’ and 4Q559 offer extra chronological details concerning the activities of the generations from Jacob to Aaron.

variable figures found in some surviving manuscripts (particularly in the case of the LXX) leave us somewhat apprehensive of accepting them as representative of the original versions of the pre-Christian era. Nevertheless, the variations within and between OT versions serve as important clues regarding the past developments that led to the composition of these different chronologies.

The comparative analysis that has been undertaken in this paper has made it possible to present a hypothetical model to account for the various chronological developments that have shaped the OT. Future historical and textual research may yet lend further support to this reconstruction. In turn, a developmental model of OT chronology of the type proposed here may provide important clues that will help us better understand the development of OT textual traditions in particular (Klein 1974: 255) and early Jewish history and theology in general.

Appendix. Reference Tables

Table 14. OT chrono-genealogical table (Gen. 5.3-25.26)

Patriarch	MT	SP	LXX ^A	Jubilees	Progenitor
1. Adam	130	130	230	130	130
2. Seth	105	105	205	105	105
3. Enosh	90	90	90/190	90 ⁴⁹	90
4. Kenon	70	70	170	70	70
5. Mahalalel	65	65	165	66	65
6. Jared	162	62	162	61	62
7. Enoch	65	65	165	65	65
8. Methuselah	187	67	187/167	65	67
9. Lamech	182	53	188	55	53
10. Noah	500	500	500	500	500
11. Shem	100	100	100	?	103
12. Arpachshad	35	135	135	?	35
Cainan			130	57	
13. Shelah	30	130	130	71	30
14. Eber	34	134	134	64	34
15. Peleg	30	130	130	12	30
16. Reu	32	132	132	108	32
17. Serug	30	130	130	37	30
18. Nahor	29	79	79	62	29
19. Terah	70	70	70	70	70
20. Abraham	100	100	100		100
21. Isaac	60	60	60		60
22. Jacob					

Table 15. MT Judean King List (1 Kgs 2.11-2 Kgs 24.18; 1 Chron. 29.27 – 2 Chron. 36.11)

King	Reign	King	Reign
1. David	40	12. Uzziah (Azariah)	52
2. Solomon	40	13. Jotham	16
3. Rehoboam	17	14. Ahaz	16
4. Abijah	3	15. Hezekiah	29
5. Asa	41	16. Manasseh	55
6. Jehoshaphat	25	17. Amon	2
7. Jehoram	8	18. Josiah	31
8. Ahaziah	1	19. Jehoahaz/Joahaz	0.25
9. Q. Athaliah	6	20. Jehoiakim	11
10. Jehoash/Joash	40	21. Johiachin	0.25
11. Amaziah	29	22. Zedekiah	11

Table 16. Ancient Near-East King list as derived from 'Ptolemy's Canon'

BABYLONIAN			PERSIAN		
Ruler	Reign	BCE	Ruler	Reign	BCE
Nebuchadrezzar II	43	605-562	Cyrus II	9	539-530
Evilmerodach	2	562-560	Cambyses II	8	530-522
Neriglissar	4	560-556	Bardiya	0.5	522
Labashimarduk	0.25	556	Darius I	36	522-486
Nabodinus	17	556-539	Xerxes	21	486-465
			Artaxerxes I	40	465-425

⁴⁹ In *Jub.* 4.13 it is Seth that is said to beget Kenan, although this is probably a scribal error or a later modification.

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