INDUCTIVE AND DEDUCTIVE METHODS
AS APPLIED TO OT CHRONOLOGY

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Constructing an OT chronology for the four and one-half centuries from the beginning of David's reign to the release of Jehoiachin from prison is a formidable challenge. By following a deductive methodology of resolving the problem, nonevangelical critics of the Bible have proposed that the task is impossible because of errors in the OT text. By seeking a solution through starting with observations rather than presuppositions, an inductive approach is more complex, but obtains much more satisfactory results. Among evangelicals who have used an inductive method successfully are Edwin Thiele and Leslie McFall, whose works have achieved a long-sought-after rational explanation of the chronological data of the Hebrew monarchies, an achievement that demonstrates that the Scriptures were not written by late-date authors and editors who lived long after the events they described. The method of Decision Tables, described in the present article, adds to these solid accomplishments by producing a methodology by means of which all the possibilities that are inherent in the scriptural texts may be fully explored. Such an inductive methodology has made it possible to assemble 124 items of exact chronological data from Kings, Chronicles, Jeremiah, and Ezekiel into a consistent and harmonious chronology of a period of over 400 years. The methodology has been so successful that it has served as a corrective for some chronological problems in Assyrian and neo-Babylonian history.

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The Problem

From the beginning of the Davidic dynasty to the release of Jehoiachin from prison, mentioned at the end of 2 Kings, represents a period of about four and one-half centuries. For this time period, the books of Kings, Chronicles, Jeremiah, and Ezekiel provide over 120 dates, lengths of reign, and synchronisms that form the raw material for constructing a chronology of these times. For anyone who tries to assemble these data into a chronological scheme, it soon becomes clear that is a formidable task. Some older interpreters such as Martin Anstey[1] handled the apparent discrepancies in the numbers by introducing interregna, that is, periods of time during which no king was assumed to be on the throne. This is like using scissors to fashion fill-in pieces as needed for a picture puzzle that otherwise does not seem to fit together. To the credit of such interpreters, they genuinely regarded the Bible as the Word of God, and their aim in writing was to explain the text and to strengthen the faith of God's people by attempting to produce a harmonious chronology from the received text.

However, interpreters emerged who did not share this goal of building up others in the faith. Their goal was to discredit a supernatural explanation of the origin of the Scriptures and the miracles recorded therein, replacing matters of "faith" with what they were quick to label as a "scientific" approach to religion. But the science of those writers was not the science that brought about the scientific revolution of modern times, because the method of true science starts with observation, whereas they started with a theory and then used that theory to reconstruct history. They either trampled on or ignored such observations as were beginning to come from archaeological findings in the ancient Near East. Thus De Wette had no archaeological findings or any other historical facts to support his theory that the Book of Deuteronomy was invented during the days of Josiah;[2] the theory merely supplied an explanation to replace the supernatural alternative, namely that it was a revelation to Moses during Israel's wandering in the desert. Neither did Wellhausen build his theory of the development of Israel's religion on a study of ancient Near Eastern inscriptions; instead an imposition of Darwin's evolutionary ideas and Hegel's dialectic was used to construct an imaginative scheme for the history of Israel and the formation of the OT canon.[3]

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[1]Martin Anstey, *The Romance of Biblical Chronology* (London: Marshall Brothers, 1913).

[2]W. M. L. de Wette, *Dissertatio critica, qua Deuteronomium a prioribus Pentateuchi librus diversum, alius cuiusdam recentioris auctoris opus esse demonstrator* (Jena, 1805), reprinted in *Opuscula Theologica* (Berlin: Georg Reimer, 1830).

[3]Julius Wellhausen, *Prolegomena to the History of Israel* (New York: World, 1961). Originally published as *Prolegomena zur geschichte Israels* (Berlin: 1882). See also the influence of the would-be anthropologist Edward Tylor on Wellhausen, as documented in Don Richardson, *Eternity in Their Hearts*, rev. ed. (Ventura, Calif.: Regal Books, 1981) 141-42. Richardson's entire chapter, entitled "Scholars with

Deductive Methodology as Applied to the Problem

Wellhausen's Documentary Hypothesis and its later offshoots (the traditio-historical school, the socio-economic approaches, etc.) are examples of the deductive method. Deduction is "inference in which the conclusion about particulars follows necessarily from general or universal premises."[4] One universal premise of such an approach is that the Scriptures did not come in a supernatural God-with-man encounter or revelation, at least in the sense of God speaking to and through Moses as stated in the Pentateuch. Divine revelation was replaced by various explanations of how writers from a later time fabricated stories about miracles and revelations that they ascribed to dimly-remembered heroes from their nation's past. With this view of the origin of Scripture, it would necessarily follow that the authors who put together the Books of Kings and Chronicles could not possibly have handled correctly all the historical details from the time of the Hebrew monarchs. Thus, with regard to the chronological data in the Books of Kings, the following conclusions were reached by several scholars of the redaction-critical school:

- R. Kittel: "Wellhausen has shown, by convincing reasons, that the synchronisms within the Book of Kings cannot possibly rest on ancient tradition, but are on the contrary simply the products of artificial reckoning. . . ."[5]
- Theodore H. Robinson: "Wellhausen is surely right in believing that the synchronisms in Kings are worthless, being merely a late compilation from the actual figures given."[6]
- S. R. and G. R. Driver: "Since, however, it is clear on various grounds that these synchronisms are not original, any attempt to base a chronological scheme on them may be disregarded."[7]
- Karl Marti: "Almost along the whole line, the discrepancy between synchronisms and years of reign is incurable."[8]

Strange Theories," shows the tremendous harm that theological and sociological theorizing that was not based on observation had in the ideologies and wars of the twentieth century.

[4]*Webster's Ninth New Collegiate Dictionary* (Springfield, Mass.: Merriam-Webster, 1989).

[5]R. Kittel, *A History of the Hebrews* (London: Williams & Norgate, 1896) 2:234. This and the following four quotes are cited in Edwin Thiele, "Synchronisms of the Hebrew Kings," *AUSS* 1 (1963):124–25.

[6]Theodore H. Robinson, *A History of Israel* (Oxford: Clarendon, 1932) 1:454.

[7]S. R. and G. R. Driver, "Bible, Old Testament, Chronology," in *Encyclopedia Britannica*, vol. 8, 14th ed.

[8]Karl Marti, "Chronology, Old Testament," in *Encyclopaedia Biblica* (New York: Macmillan, 1899–1903) 1:779.

- Cyrus Gordon: "The numerical errors in the Books of Kings have defied every attempt to ungarble them. Those errors are largely the creation of the editors. . . . [T]he editors did not execute the synchronisms skillfully."[9]

Such conclusions about the unreliability of the chronological data of the kingdom period follow logically once the presuppositions of these scholars are granted and their deductive method pursued. The advantage of the deductive approach is that it is readily adaptable to whatever is currently fashionable in intellectual circles. At present that seems to be the socio-economic approach to historical interpretation. The disadvantage of the deductive approach is that nothing is settled for certain; the results obtained are as diverse as the presuppositions of the scholars, since diverse presuppositions produce diverse results. This is readily evident from the discordant opinions regarding the origin of the text given by scholars who follow the traditio-historic, socio-economic, and other literary-critical methods that force *a priori* assumptions on the biblical data.

The Inductive Method

However, some scholars have followed an inductive approach in biblical and chronological studies. Induction is "inference of a generalized conclusion from particular instances—compare DEDUCTION."[10] Broadly speaking, deduction starts with principles, whereas induction starts with observation. When studying the chronology of the Hebrew monarchies, one should observe some of the following pieces of evidence if an inductive course is to be pursued:

1. There is evidence from Jewish writings that the New Year might be reckoned from the spring month of Nisan, and other evidence that it might be measured from the fall month of Tishri.[11] An unbiased approach would consider both these options.
2. The field of Egyptology yields evidence that sovereigns, during their lifetime, occasionally invested their son with the royal office, thus forming a coregency.[12] The years of the son's reign might be counted from the year he became coregent instead of from the first year of his sole reign. There is some *prima facie* evidence in the Scriptures for coregencies (1 Kgs 1:34, 2 Kgs 15:5; 1 Chr 23:1). An

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[9]Cyrus H. Gordon, *The World of the Old Testament* (New York: Doubleday, 1958) 194.

[10]*Webster's Ninth*.

[11]*Rosh HaShanah* 1a; Josephus, *Ant.* I.iii.3; *Seder Olam* 4.

[12]See, for example, Donald B. Redford, "The Coregency of Tuthmosis III and Amenophis II," *JEA* 51 (1965):116; Peter Der Manuelian, *Studies in the Reign of Amenophis II* (Hildesheim, Germany: Gerstenberg, 1987) 24; E. Ball, "The Co-Regency of David and Solomon (I Kings 1)," *VT* 27 (1977):272-79.

inductive approach should consider the possibility of coregencies, and the possibility that the years of a king could be measured either from the beginning of a coregency or from the beginning of a sole reign.

3. The field of Egyptology demonstrates the existence of rival reigns—reigns for which the years of the pharaohs cannot be added together because two pharaohs were ruling simultaneously from different capitals.[13] Such a phenomenon is reported in the Bible for the reigns of Tibni and Omri (1 Kgs 16:21-22).

4. Two ways existed for reckoning the first year of a king's reign—whether that year was reckoned as year one of his reign, or whether it was reckoned as his "accession" or "zero" year. The two possibilities are called the non-accession and accession methods, respectively. Since there is evidence for both usages in the ancient Near East,[14] a proper methodology that starts from observations should not rule out either possibility for the kings of Judah and Israel.

5. The final source of evidence for the inductive method would be the texts of Kings, Chronicles, Jeremiah, and Ezekiel that give chronological data for the kingdom period. These texts (in the MT[15]) should be accepted as raw data (observations) unless they can be shown to be self-contradictory or contradictory to established external dates.

From this list of observations, it is clear that the inductive approach faces a great difficulty. That difficulty lies in how to handle the various possibilities

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[13]Modern Egyptologists believe that whole dynasties of pharaohs were ruling simultaneously, such as the Ninth and Tenth Dynasties with the Eleventh, or the Sixteenth and Seventeenth with the Fifteenth, even though the overlap is not stated in Manetho's king-lists nor in the Turin Canon of Kings (Kenneth Kitchen, *The Third Intermediate Period in Egypt (1100–650 B. C.)* [Warminster: Aris & Phillips, 1986] xxxi).

[14]The *Seder Olam*, chs. 4, 11, and 12, assumes that all years for Israel's kings and judges were given by non-accession reckoning. This method is generally assumed in the Talmud. Babylonia and Assyria usually used accession reckoning. Tiglath-Pileser III, however, used non-accession reckoning, contrary to the customary practice in Assyria. This example serves as a warning that the choice of whether to use accession or non-accession reckoning was quite arbitrary, and the choice was probably made by the king himself. Applying this to Judah and Israel would suggest that whether a king used accession or non-accession years must be addressed anew for each king; it is not sufficient to assume that because a certain king used one method, his successor must have used the same method. To assume uniformity in this matter would be consistent with the deductive method of making arbitrary assumptions, but a careful study of the scriptural data shows that it is an improper assumption.

[15]The LXX translators attempted to harmonize various readings of the Hebrew text that seemed to be contradictory, and in doing so, they produced various readings that cannot be assembled into a coherent chronology without postulating multiple arbitrary emendations. See Edwin Thiele, *Mysterious Numbers of the Hebrew Kings*, 3d ed. (Grand Rapids: Zondervan/Kregel, 1983) 89-94, for a discussion of the unreliability of the LXX in chronological matters. For an example of the emendations and assumptions that are necessary when trying to use the various texts of the LXX traditions, see M. Christine Tetley, *The Reconstructed Chronology of the Divided Kingdom* (Winona Lake, Ind.: Eisenbrauns, 2005) chap. 2.

inherent in a proper treatment of all the observations just listed and their multiple combinations. The easy way to handle this complexity is to make simplifying assumptions. Thus the *Seder Olam* and the Talmud assume that all reign lengths are measured from the start of the king's sole reign. Gershon Galil made the opposite assumption by presuming that all regnal years when a coregency is involved were measured from the start of the coregency.[16] An even greater simplification was invented by Wellhausen, who ruled out coregencies altogether, even the plainly-stated coregency of David with Solomon.[17] The consequences of this kind of procedure are obvious: the scholars who make such simplifying assumptions will not agree with scholars who make other, contradictory assumptions. The simplifications will also produce chronologies that contradict scriptural texts at some point or another; scholars will then, unjustifiably, claim that the Scripture is in error because it does not fit their scheme.

Successes of the Inductive Method

In contrast, scholars who have used the inductive approach attempt to make no *a priori* assumptions. Instead, they employ scriptural texts to determine the method used by the ancient authors, taking into account the different archaeological and historical evidences listed above and not ruling out any possibility until valid reasons for doing so surface. In the 1920s Professor Coucke of the Grand Seminaire de Bruges determined from a careful analysis of the data in Kings and Chronicles that Judah began its regnal years in Tishri, whereas Israel began its regnal years in Nisan.[18] He also determined that the reign lengths of the first kings of Judah and Israel were in harmony with each other if these first kings in Judah used accession reckoning while their counterparts in Israel were using non-accession reckoning to measure their years of reign.

Some years later an American scholar, Edwin Thiele, discovered the same principles, although when he began publishing his findings, he was not aware of Coucke's earlier work. Thiele was able to determine the chronology of the kings of Israel and Judah in a more satisfactory way than Coucke, and his principal work, *The Mysterious Numbers of the Hebrew Kings*, went through three editions. The

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[16]Gershon Galil, *The Chronology of the Kings of Israel and Judah* (Leiden: Brill, 1996) 10.

[17]Wellhausen was followed in this presupposition by two more recent authors of OT chronological studies: Jeremy Hughes, *Secrets of the Times: Myth and History in Biblical Chronology* (Sheffield: Sheffield Academic, 1990) 99, 103, and Tetley, *Reconstructed Chronology* 117. After such rejection of well-established practices from the ancient Near East in order to make things simpler, such scholars find it necessary to make a plethora of secondary assumptions in order to explain the disagreements of their systems with the data.

[18]V. Coucke, "Chronique biblique," in *Supplément au Dictionnaire de la Bible*, Louis Pirot ed., vol. 1 (1928), cited in Thiele, *Mysterious Numbers* 59 n. 17.

chronology of the northern kingdom, Israel, remained the same through these three editions, and later conservative writers such as McFall have offered only minor modifications such as narrowing the date for the fall of Samaria and the end of Hoshea's reign to the first half of the year beginning in Nisan of 723 B.C., rather than allowing for the full year as did Thiele.[19] Thiele's chronology of the northern kingdom has stood the test of time, and in particular his date for the beginning of the divided monarchies is widely accepted by conservative and non-conservative scholars alike.[20]

However, for the southern kingdom, Judah, Thiele failed to recognize that the synchronisms of Hezekiah of Judah and Hoshea of Israel in 2 Kings 18 imply that Hezekiah at this time was coregent with his father Ahaz. This was a blind spot on Thiele's part, because he recognized that Hezekiah's father, grandfather, and great-grandfather had coregencies with their fathers, and Hezekiah had a coregency with his son; why then rule out a coregency of Hezekiah with Ahaz? But even though Thiele's colleague Siegrfied Horn[21] and many other scholars pointed out this explanation of the synchronisms in 2 Kings 18, Thiele refused to accept that solution and did not even discuss it in the final two editions of his book. The time of Ahaz and Hezekiah was the one place that he declared that the scriptural texts dealing with chronology were in error.

It remained then for others to complete the application of principles that Thiele used elsewhere, thereby providing a chronology for the eighth-century kings of Judah that is in complete harmony with the reign lengths and synchronisms given in 2 Kings and 2 Chronicles. The most thorough work in this regard was Leslie Mc-Fall's 1991 article in *Bibliotheca Sacra*.[22] McFall made his way through the reign

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[19]Leslie McFall, "A Translation Guide to the Chronological Data in Kings and Chronicles," *BSac* 148 (1991):35.

[20]Among the many scholars who have accepted Thiele's date for the beginning of the divided monarchies are T. C. Mitchell, "Israel and Judah until the Revolt of Jehu (931–841 B.C.)," in *CAH* 3, Part 1, 445-46; John H. Walvoord and Roy B. Zuck, eds., *The Bible Knowledge Commentary, Old Testament* (Wheaton, Ill.: Victor, 1983) 632; McFall, "Translation Guide" 12; John MacArthur, *The MacArthur Study Bible* (Nashville: Word Publishing, 1997) 468; Galil, *Chronology* 14; Jack Finegan, *Handbook of Biblical Chronology* (rev. ed.; Peabody, Mass.: Hendrickson, 1998) 246, 249; Kenneth Kitchen, *On the Reliability of the Old Testament* (Grand Rapids: Eerdmans, 2003) 83.

A further development, not considered by any of these writers, has provided an independent verification of Thiele's date of 931 B.C. for the start of the divided monarchies, thus authenticating the correctness of Thiele's basic approach and the reliability of the Scripture's chronological data. That development is the agreement of the years for Solomon and his Temple activities, based on his death before Tishri of 931, with Israel's calendar of Jubilee and Sabbatical cycles. See Rodger C. Young, "When Did Solomon Die?" *JETS* 46 (2003):599-603, or a more complete exposition in Young, "The Talmud's Two Jubilees and Their Relevance to the Date of the Exodus," *WTJ* 68 (2006):71-83.

[21]Siegfried H. Horn, "The Chronology of King Hezekiah's Reign," *AUSS* 2 (1964):48-49.

[22]McFall, "Translation Guide" 3-45.

lengths and synchronisms of Kings and Chronicles, and using an exact notation that indicated whether the years were being measured according to Judah's Tishri years or Israel's Nisan years, he was able to produce a chronology for the divided monarchies that was consistent with all the scriptural texts chosen. That was the logical outgrowth of Thiele's work, and it attained a holy grail that had been sought for twenty-two centuries, namely a rational explanation of the chronological data of the Hebrew monarchies that was consistent with the scriptural texts used to construct the chronology, and also consistent with several fixed dates from Assyrian and Babylonian history.

Significance of the Successes of the Inductive Method

The significance of Thiele's work and its logical extension in McFall's article can hardly be overestimated. One way of emphasizing the significance is to consider just how improbable such an accomplishment was when starting from the premises of the critics who were cited earlier in this article. They, and many others who could be quoted, believed that it was impossible to construct a coherent and rational chronology from the data given in the received text. The primary reason for this belief (or unbelief) must have been because they saw little reason to pursue all the hard work that Coucke and Thiele had to struggle with before they determined the methods of the biblical authors; why spend time trying to determine if there was a reasonable explanation of the texts when they were sure that late-date writers, such as they supposed were the authors of the Scripture, could not have produced an accurate chronology for long-past events?

In this conclusion they were correct, if their starting assumption is granted. If late-date authors and editors who lived long after the events they were describing put together the Scriptures, such authors and editors could not have produced chronological data of the complexity found in Kings, Chronicles, Jeremiah, and Ezekiel that harmonize with each other and are also consistent with several dates in Assyrian and Babylonian history. The critics have declared implicitly or explicitly that these presumed writers could never give a consistent chronology for the kingdom period. However, such a chronology has been produced, and so the critics have established by their own statements that their initial assumption about the late-date origin of the textual sources used in Kings and Chronicles was false.

Their error can be demonstrated as follows. Imagine someone cutting a series of arbitrary shapes out of cardboard—in the present case, more than 120 such shapes—and then hoping that somehow the shapes would fit together in a picture puzzle. Better than the analogy of a picture puzzle is that of a logic puzzle. Figure 1 shows a logic puzzle. The example given deals with trying to match five professors with their classes and their eccentric ideas. The clues, given in sentences one through seven, provide sufficient information to solve the puzzle. An instructive exercise would be to try to make up clues for this puzzle before determining the answer to the

puzzle. If this is attempted, it will soon be concluded that late-date editors cannot invent clues and have them all fit together; before clues are provided, the answer must be known that will fit together into a solution. Furthermore a sufficient number of clues must be given so that someone else can solve the puzzle.

Figure 1. Example of a Logic Puzzle[23]

Amy takes five classes (including history) at Bimbleman University, each taught by a different professor. At first she was baffled by the fact that each instructor (including Professor Bookwerme) has a different eccentric pet theory, but by now she has gotten used to their digressions. Can you determine each professor's class and theory?

1. Amy's psychology professor is not Dr. Weissenhimer.
2. Her philosophy class meets just after that of the professor who claims that dinosaurs were really aliens who got stuck here on a field trip.
3. Her political science class meets just before the class with the professor who insists that Shakespeare's plays were really written by someone named Larry.
4. Professor Smartalecq believes that gravity is a hoax perpetrated by the hot-air balloon industry; Professor Noetalle does not teach history.
5. Amy's psychology professor firmly believes that the lunar landing was faked on a North Dakota prairie.
6. As one professor orated about dinosaurs, Amy slipped out to attend her next class, led by Dr. Eguehedd.
7. The history professor, who isn't Dr. Weissenhimer, believes that the earth is flat.

	Biology	History	Philosophy	Political	Psychology	Dinosaurs	Earth is flat	Gravity	Lunar landing	Shakespeare
Bookwerme										
Eguehedd										
Noetalle										
Smartalecq										
Weissenhimer										
Dinosaurs										
Earth is flat										
Gravity										
Lunar landing										
Shakespeare										

This illustration is relevant to the chronological texts related to the divided monarchies. The OT texts form, in every respect, a logic puzzle. They provide approximately 124 clues to help determine a chronology of the time, compared to the nine clues in the seven sentences of the logic puzzle of Figure 1. Since experimentation will show that no one can produce arbitrary clues that will have any good chance of success for a simple logic puzzle of nine clues unless he knew the answer beforehand, how could someone produce 124 clues that make up the scriptural logic puzzle, and have all the clues consistent with each other, unless he or she already knew the answer and then was very careful in giving a sufficient number of clues to lead to the answer?

How does one solve a logic puzzle like that of Figure 1? One way is to try various combinations to see if they fit the clues given. But even for a fairly simple logic puzzle like this, it soon becomes obvious that there are so many ways to combine things that one's patience gives out. In frustration, then, he takes a bold step of making assumptions! Surely no professor of philosophy would believe that gravity is a hoax, and any professor of biology would know that dinosaurs evolved from frogs and after that they evolved into birds and flew away. After a few more such bold assumptions, working out a solution becomes possible. When that solution conflicts with some of the clues originally given (and it almost inevitably will), someone could declare that the original clues are mistakes introduced by an incompetent editor who did not know the facts of the case. This is similar to the authors cited earlier who could not solve the chronological puzzle and who then declared that the scriptural texts contained numerous errors.

The other way to solve the puzzle is to use the inductive method. That is, start with the clues given and see if they can be combined to give a reasonable solution, without trampling on the clues or throwing out some of them, as in the deductive method. That is the more difficult process. But when it comes up with a solution, one that is consistent with all the clues given, who can doubt that it is the right method? And who can doubt that the Thiele/McFall chronology of the divided kingdom that made sense of all the date-formulas chosen in Kings and Chronicles is to be preferred over the chronologies of those who followed the deductive method and introduced several assumptions in order to justify their schemes? Those were assumptions that Thiele and McFall did not need to make, since they were basically limited only to the observations that were necessary for the inductive method.[24] Would not all calm and rational minds conclude that a solution that is consistent with the data and which makes the fewest assumptions is preferable to solutions that are not consistent with the data and that make several unjustified assumptions?

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[24]McFall makes some debatable assumptions about side issues such as the figures for the age of Ahaziah when he became king ("Translation Guide" 22), but these are not critical to the building of his chronology.

Here then is a great mystery: the Author of the chronological puzzle in Kings and Chronicles knew the answer, and He was careful to provide enough clues so that an answer could be found after suitable mental exercise. The chronological texts of the kingdom period are revealed as an example of something quite awesome: purposeful design. In other words, Intelligent Design. No other way exists to explain how all the texts can fit together, and how a sufficient number of clues has been given so that the chronology can be solved without having to resort to the arbitrary assumptions of the deductive method. But just as opponents of Intelligent Design grasp at straws with a sort of blind faith that their own presuppositions must be right, so practitioners of the deductive method will never see the design inherent in the chronological texts of the kingdom period unless they give up their wrong approach and their wrong presuppositions regarding the origin of the text.

Some Refinements to the Thiele/McFall System

In speaking of the Thiele/McFall chronological system, the discussion above stated that it was consistent with all the texts that McFall used to build his chronology. However, McFall did not use some texts out of the approximately 124 of an exact nature that are the clues for this period. My own efforts were directed toward examining all these texts and making it the first priority to determine the methods of the authors of Scripture. In order to manage all the data and their possible combinations without making *a priori* assumptions, introducing the method of Decision Tables that I had used in my work as a systems analyst was necessary. Decision Tables had proved invaluable in handling the complexities of the last major system that I designed at IBM. Fresh from this experience, I saw that Decision Tables could be used to explore all the combinations of the chronological parameters that were presented earlier in this paper. Decision Tables allow the exploring of all possibilities that are consistent with the investigator's basic assumptions, and they show which combinations of those assumptions are not compatible with the data. The "data," in this case, are the texts being studied and fixed dates from Assyrian and Babylonian history. The method of Decision Tables is entirely logical, and, if used properly, entirely impartial; it provides the final step that is needed in the inductive methodology for examining these chronological texts.

The first contribution of using Decision Tables was a resolution of some discrepancies in Thiele's figures for the regnal years of Jehoshaphat, Ahaziah, and Athaliah.[25] The second contribution dealt with the end of the monarchic period, utilizing texts in Ezekiel that were not used by McFall in building his chronology. Ezekiel's texts show that non-accession years are to be used for Zedekiah, contrary to the assumption of Thiele and McFall that Zedekiah's years are given by accession

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[25]Young, "Solomon" 598-99; Rodger Young, "When Was Samaria Captured? The Need for Precision in Biblical Chronologies," *JETS* 47 (2004):578-79.

counting. A continuation of this analysis showed that all the Scriptures in Jeremiah, Ezekiel, 2 Kings, and 2 Chronicles are in harmony for Zedekiah's reign.[26] Decision Tables provided the only convenient way to handle all these texts in a consistent manner. When this method is used, it can be shown that all 124 items of exact chronological data for the period of the Hebrew kingdoms combine to produce a consistent and harmonious chronology for a period of over 400 years.[27]

Skeptics may assert that the harmony of these Scriptures is all an artifact of the method of Thiele and those who followed him, even though that harmony was achieved without the necessity of making various *a priori* assumptions that characterize the deductive method. To take the view that the method of Thiele and McFall was an artificial approach would be like maintaining that a logic puzzle of 124 clues could be put together in an artificial and arbitrary way that did not agree with the original design. Anyone who doubts this should try to make up clues for the simple puzzle in Figure 1 without knowing the answer. The clues will generally fail to fit together unless the person giving the clues knows the answer and is very careful to make all clues consistent with that answer. Similarly, the chronological puzzle could never have been put together by Thiele and those who followed him if the original data were not authentic, that is, true to history. Errors in the original data, such as would be predicted by any theory of limited inspiration, would have meant that neither McFall nor anyone else could have combined all 124 exact statistics into a coherent and rational chronology. But this is exactly what has been accomplished by the scholarly and logical application of the inductive method.

Why Is the Problem So Complex?

But why is the problem so complicated? Why has it taken over two millennia until the work of Thiele, Horn, McFall and others has given a solution for the chronological texts in Kings, Chronicles, Jeremiah, and Ezekiel? And why must

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[26]Rodger Young, "When Did Jerusalem Fall?" *JETS* 47 (2004):21-38. This article is useful in showing the technique used to determine the chronological methods of the various biblical authors who dealt with the closing years of the Judean monarchy, and then showing, once the methods are determined, that all Scriptures dealing with dates for this period are in agreement. It and the "Solomon" and "Samaria" papers and the "Reign Lengths" paper of n. 27 are online at http://etsjets.org/jets/journal/jets.html, accessed 1/12/07.

[27]These 124 exact statistics are summarized in four tables at the end of my paper "Tables of Reign Lengths from the Hebrew Court Recorders," *JETS* 48 (2005):245-48. The purpose of the tables is to show that all synchronisms and reign lengths in the six relevant biblical books are precise, without need of alteration from the numbers given in the MT, and without any need of special pleading for the reasonableness of the resultant chronology. Writers whose schemes do not fit the biblical data often contend that the reason for the lack of fit in their scheme is that the biblical numbers are only approximate. This contention flies in the face of what we know about the official court records of the ancient Near East, particularly those from Assyria and Babylonia, and the great concern that the priests of these nations had in keeping a strict calendar.

a proper methodology to handle all these data include the use of Decision Tables in order to eliminate wrong assumptions and to show all the possibilities that must be explored before the best solution can be determined?

The same questions regarding methodology could be asked of any non-trivial logic puzzle. It would be very difficult to solve the logic puzzle of Figure 1 without first learning how to use the grid that is included below the puzzle. All puzzle-solvers learn to use these grids. They are really Decision Tables. If Decision Tables are necessary to solve logic puzzles, how can the complicated chronological data of Jeremiah, Ezekiel, Kings, and Chronicles be handled without making use of a similar logical method?

This does not answer the question of why the data are so complex that it is necessary to be very careful to use a logical methodology that includes Decision Tables in order to handle them and to show which combinations are feasible and which produce contradictions. One might as well ask why it is necessary to master the methods of calculus to gain even a preliminary understanding of the motions of the planets, and beyond that to master both Special and General Relativity if more exact refinements in planetary and satellite motion are to be handled. Does anyone say that these laws are not valid, just because it takes effort and discipline to understand them? Perhaps in matters of chronology, one would have liked the Scriptures to be easier to understand, so that there would not have been so many interpreters declaring that the Scripture is in error simply because the interpreters were incompetent in determining the methods of the authors of Scripture. In matters essential to salvation, the Scriptures are plain enough that a wayfaring man, though a fool, need not err therein. But in other areas such as the one presently under discussion, God's ways are not our ways, and His thoughts are higher than our thoughts. It was not in the Holy Spirit's design to make all portions of Scripture easy to understand. It was in His design to make all Scripture so it is without error.

Successes of the Inductive Method with Respect to External Dates

In a 1996 article, Kenneth Strand wrote, "What has generally not been given due notice is the effect that Thiele's clarification of the Hebrew chronology of this period of history has had in furnishing a corrective for various dates in ancient Assyrian and Babylonian history."[28] The purpose of Strand's article was to show that Thiele's methodology accomplished more than just producing a coherent chronology from scriptural data. His chronology, once produced, proved useful in settling some troublesome problems in Assyrian and Babylonian history. As Strand pointed out, this outcome was quite the opposite of what some of Thiele's critics asserted, namely that Thiele merely juggled the scriptural data until he could match generally accepted

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[28]Kenneth A. Strand, "Thiele's Biblical Chronology As a Corrective for Extrabiblical Dates," *AUSS* 34 (1996):295.

dates from the surrounding nations.[29] In the scientific method, the final stage in validating a new theory is when the theory is able to go beyond the explanation of already-observed phenomena and predict new phenomena that follow as a logical consequence if the theory is true. Something very akin to this resulted from Thiele's painstaking work in determining the chronological mechanisms used in Scripture. Strand's article summarized several areas in which Thiele's research, instead of bending its results to fit prevailing opinions in Assyrian and Babylonian chronology, provided instead a corrective for such prevailing opinions. In three significant areas, the adjustments have been shown to be correct when further archaeological data have come to light. Such verifications correspond, in historical research, to the successful prediction of new phenomena for a theory in the physical sciences. Some areas are still controversial (see below), but the successes that have already been achieved as a result of the Thiele/McFall chronology form a chapter in biblical interpretation and literary analysis that is perhaps without equal in the history of modern biblical studies. It would be difficult to cite any similar successes from the deductive method that forms the basis for much of current biblical criticism.

Are These Findings Negated by Any Fixed Near Eastern Dates?

In the past, various "fixed dates" have supposedly conflicted with Thiele's chronology, such as the date of the Battle of Qarqar, initially wrongly assigned to 854 B.C. Although there is still controversy over some synchronisms to surrounding countries, the credibilities of the remaining challenges to the Thiele/McFall chronology suffer, in all but one case, from a lack of consensus among scholars for a single alternative for the date in question. The exception to this is the timing conjectured for Menahem's tribute to Tiglath-Pileser III, mentioned in 2 Kgs 15:19-20 (where Pul = Tiglath-Pileser). The date assigned by most Assyriologists to this event has the advantage of a fair amount of scholarly opinion in its support, without the divergence of ideas such as are found for other chronological problem areas. The year for Menahem's tribute favored by the Assyriologists, 738 B.C., is in conflict with the Thiele/McFall chronology that places the death of Menahem in the six-month period before Nisan 1 of 741 B.C. This issue has emerged as the greatest obstacle to many scholars in accepting Thiele's method and chronology. The most extensive

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[29]Another criticism is that Thiele's and McFall's approach is "too complicated." See the preceding section for a consideration of whether this argument is valid. It should also be noted that critics who do not make an effort to understand the inductive method end up producing explanations of the scriptural texts that call for numerous assumptions and emendations. When these are all written down the system is invariably more complicated than the system that has been built on the five starting points of the inductive method that were listed at the beginning of the present article.

modern analysis of the time of Tiglath-Pileser is that of Hayim Tadmor.[30] Following is a brief summary of the facts regarding the controversy, as derived primarily from Tadmor's work.

1. Tiglath-Pileser's records state that he received tribute from various western kings when he was in the city of Arpad. According to Luckenbill's translation, the only entry in the Assyrian Eponym Chronicle (AEC) that indicated when Tiglath-Pileser was "in Arpad" was the entry for 743 B.C., a date consistent with Thiele's and McFall's dates for Menahem. The full entry for 743 as given by Luckenbill is: "in the city of Arpadda. A massacre took place in the land of Urartu."[31] Tadmor wrote the following regarding Luckenbill's translation: "This translation of this crucial line, however, has been disputed by several scholars. It should most likely be taken to mean that the army of Urartu suffered a defeat in (the land of) Arpad, so that the earliest occasion for the payment of such tribute would be 740, when Arpad fell following a three-year siege."[32] However, Tadmor's translation contradicts the customary usage in the AEC of the phrase "in (a place)." This normally means that the reigning king of Assyria was in that place. Furthermore, the determinative for Arpad is *uru*, meaning a city, not the determinative for a land. It is also difficult to accept that Urartu (Ararat/Armenia) was defeated in the city, consistent with the rest of Tadmor's translation. For all these reasons, Luckenbill's translation is to be preferred, and that translation is consistent with Menahem's tribute being delivered when Tiglath-Pileser was "in Arpad," in 743 B.C.

2. The main reason that Tadmor and other Assyriologists assign Menahem's tribute to 738 is because an inscription from late in Tiglath-Pileser's reign gave a list of tributary kings, including Menahem, just before an entry describing events in the Assyrian monarch's ninth year, 737 B.C. The assumption was made that the tribute from the kings was all given in the preceding year. But this would not necessarily follow if the tribute list was a summary list. Summary lists were very common in Assyria and elsewhere in the ancient Near East. They lump together all the kings giving tribute or all the geographical regions conquered, irrespective of the year in which the tribute was given or the region conquered. Thiele expected that Tadmor's publication of the Iran Stele, which contains the earliest of all extant Assyrian records mentioning Menahem's tribute, would show that the tribute list in the later Assyrian records was a summary list.[33] Thiele died in 1986 and Tadmor did not publish his translation of the Iran Stele until his book on Tiglath-Pileser appeared in 1994. In that publication it was shown that the tribute list of the Iran Stele was definitely a summary list. The implication is that the later list, the list from which Assyriologists make the inference that the tribute was in 738, was also a summary list, copied either from the Iran Stele or from an earlier prototype from which both lists were copied. The Iran Stele therefore vindicated Thiele by its evidence that the tribute lists containing the name of Menahem are summary lists, so that, based only on the

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[30]Hayim Tadmor, *The Inscriptions of Tiglath-Pileser III, King of Assyria* (Jerusalem: Israel Academy of Sciences and Humanities, 1994).

[31]*ARAB* 2.436.

[32]Tadmor, *Inscriptions* 268.

[33]Thiele, *Mysterious Numbers* 162.

consideration of the tribute lists without regard to the other evidence, the tribute could have been given at any time from the first year of Tiglath-Pileser, 745 B.C., until the year before the Iran Stele was erected in 737 B.C.

3. The list that mentioned Menahem's name in the Iran Stele also mentioned tribute from Tuba'il (=Ithobaal II), king of Tyre. Tadmor cited Annal 27 of Tiglath-Pileser as showing that Hiram, who succeeded Ithobaal, was on the throne of Tyre in 738 B.C.[34] This implies that the tribute from Tyre, and probably from Menahem also, was earlier than 738. In order to explain this, Tadmor conjectured that Menahem gave tribute twice, once in 738 and "once in 740 or even earlier."[35] A simpler interpretation is that there was only one tribute, in the "or even earlier" year of 743 B.C.

The question of the date of Menahem's tribute to Tiglath-Pileser deserves a fuller treatment than has been given here. Devoting these few paragraphs to the issue, however, shows that the 738 date for the tribute, which is the most serious of all the objections to the Thiele/McFall chronology, is built on a series of assumptions that are quite *ad hoc*. The relevant data from the Assyrian texts support a date of 743 for Menahem's tribute, a year during which Ithobaal II was on the throne of Tyre, Menahem was king in Samaria, and Tiglath-Pileser was in the city of Arpad to receive tribute from these kings. The date of 743 is also consistent with the biblical texts for this period and the Thiele/McFall chronology built on those texts.

Conclusion

The above study has compared the deductive and inductive approaches to studying the chronology of the divided kingdoms. The inductive approach has been described in detail. The study has shown it to be entirely logical, in contrast to the deductive method that makes unjustified simplifications and then rejects data that do not fit those simplifications. Because the deductive method is limited and unsuitable for this kind of investigation, scholars who have used this method have produced a host of differing chronologies for which no consensus has ever been reached. In contrast, scholars such as Coucke, Thiele, Horn, and McFall started from observed practices of the court recorders in the ancient Near East. As an outcome of their inductive method, a chronology giving exact data and in harmony with all the biblical texts has been achieved for the kings of Israel and Judah. The chronology is also consistent with several fixed dates in Assyrian and Babylonian history. The study has examined in detail the contention of critics that the chronology was accomplished by a clever juggling of the data. To counteract that criticism, a comparison has been made with a logic puzzle. If someone designing a logic puzzle cannot formulate consistent clues for the puzzle without first setting forth the puzzle's solution, neither could modern scholars have developed a consistent chronological structure from the

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[34]Tadmor, *Inscriptions* 266-67.

[35]Ibid., 276.

four centuries of data found in six major books of the Bible. The complexities of 124 exact synchronisms, reign lengths, and dates in 1 and 2 Kings, 1 and 2 Chronicles, Jeremiah, and Ezekiel negate that possibility unless the data were historically authentic. Neither would it have been possible for the final editors who penned the books of Kings and Chronicles to produce the harmony found in those texts unless their sources related an accurate history of the times, exact in the minutest details of chronology.