CHAPTER SIX

THE HEBREW CALENDRICAL BOOKSHELF OF THE
EARLY TWELFTH CENTURY: THE CASES OF ABRAHAM BAR ḤIYYA
AND JACOB BAR SAMSON

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1. Introduction

In this article I examine two central books on the Jewish calendar which were composed in the 1120s. The first tract was written by the Spanish polymath Abraham bar Ḥiyya in 1122/3, which is the year 4883 in the Jewish calendar—the last year in the 257th cycle. Textual evidence suggests that it was written in Northern France.\(^1\) Around the same time, Jacob bar Samson, a well-known rabbinic scholar from Northern France, and a student of the famous exegete Rabbi Solomon Isaaci (RaSHi) from Troyes (1040–1105) also composed a treatise on the Jewish calendar. Although both texts were written around the same time, and possibly in geographical proximity, I will show that their composition was not correlated.\(^2\)

My analysis aims to go beyond a mere juxtaposition of the two texts. In fact, I wish to refute Avraham Grossman’s assertion that Bar Samson used Bar Ḥiyya’s calendrical work. Grossman’s exact claim is that although there is no evidence given by Bar Samson for using Bar Ḥiyya’s tract, this is what arises from comparing the two texts. It is true that nowhere in Bar Samson’s calendrical work does one find Bar Ḥiyya’s name explicitly mentioned whereas other sources are indicated, for example, calendrical rules by Saadya Gaon (ca. 882–942).\(^3\)

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\(^{1}\) The term used in the introduction to this book is Ṣarfat, which in the medieval literature could refer to either Provence or Northern France.

\(^{2}\) The materials and analysis presented here belong to my joint work with Israel Sandman on Bar Ḥiyya’s text and my own research on Bar Samson’s book. This is part of the AHRC-funded project on medieval monographs on the Jewish calendar, carried out at the department of Hebrew and Jewish Studies at University College London under the direction of Sacha Stern. The excerpts from Bar Samson’s text presented here are my own edition and translation and those taken from Bar Ḥiyya’s book are based on Israel Sandman’s edition and translation. Apart from the edition that is currently being prepared at University College London, there is an earlier edition: Avraham b. Ḥiyya (ha-Nasi), Sefer ha-ʿIbbur, ed. H. Filipowski (London, 1851). I thank Sacha Stern and Israel Sandman for helpful advice.

\(^{3}\) Oxford, Bodleian Library, Opp. 317, folios 93a–b, 95a, 96b, 97b and 99a.
Grossman specifies that his comparison was made between the contents of the books and not their language, and this is precisely where his argument fails. Thematic similitude in our calendrical case is no proof of textual dependence at all simply because any two treatises on the fixed Jewish calendar possess a large common calendrical denominator by the very nature of this genre. In every tract on the Jewish calendar we will always find some of the issues that constitute the kernel of the Jewish calendar such as moladot, tequfot, and rules of deferment. Furthermore, it is actually through the analysis of the language, the underlying perception of the calendrical themes at hand, and other features, that dependence can be ruled out, as I will show in this article.

2. The Two Authors

Abraham bar Hiyya from Barcelona (ca. 1065–ca. 1136?) was a prolific writer on a wide range of domains: mathematics, astronomy, astrology, the Jewish calendar and philosophy. He was even crowned the ‘father of Hebrew mathematics’ by the late mathematician and linguist Gad ben Ami Sarfatti, because Bar Hiyya was the first author we know of who composed mathematical treatises in Hebrew. Due to the paucity of Hebrew mathematical terminology at his time, Bar Hiyya coined hundreds of terms, mainly in arithmetic and geometry. Jacob bar Samson from Northern France (ca. 1070–ca. 1140) was a prominent Talmudic scholar, whose works have survived only in part. We shall see that Bar Samson’s calendrical text reveals unexpected non-trivial mathematical knowledge. 

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5 Molad (plural: moladot) is the new moon.
6 Tequfah (plural: tequfot) refers to the equinoxes and solstices, the turning points of the seasons. The term tequfah also appears in the notions of ‘the tequfah of Samuel’ and ‘the tequfah of Rav Ada’, which designate different lengths of the solar year, as will be explained later.
7 I.e. rules that impede Jewish holidays from falling on certain days for religious reasons. For example, the deferment rule LO ADU ROSH (or LO IDO ROSH) means that Rosh ha-Shana, the Jewish New Year, may not fall on Sunday, Wednesday or Friday. For a detailed discussion of the Jewish calendar, its rules and its history, see Sacha Stern, Calendar and Community: A History of the Jewish Calendar, 2nd Century BCE–10th Century CE (Oxford: Clarendon Press, 2001).
8 For a detailed analysis of Bar Hiyya’s life, scientific and linguistic contribution see Gad ben Ami Sarfatti, Mathematical terminology in Hebrew scientific literature of the Middle Ages (Jerusalem 1969) [Hebrew, with English summary], pp. 61–129.