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Coffee with the Cantor Jewish Influence on Secular Society

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Judaism and Agriculture

From the Encyclopedia Judaica

The study of the history of ancient agriculture in the Land of Israel has been the focus of a great amount of research in recent decades. Much more data is now available as a result of an intensification of data-collection and the use of new methodologies during archaeological excavations and surveys, especially in regard to the development of rural settlements (villages, hamlets and farms) and their landscapes (fields, terraces, access routes to markets), and the technology of agricultural implements (digging tools, ground stone objects) and installations (wine and oil presses). The intensive gathering of plant and wood remains at sites using flotation procedures has helped to enlarge knowledge about the variety of cultivations and fruits trees available during different archaeological periods. Botanical remains are frequently found on the floors of houses and storage buildings, on the surfaces of courtyards, in fire-pits and in silos. Inventories of crops are thus produced and this helps towards a reconstruction of agrarian practices and dietary patterns. Further insights into the history of agriculture have also emerged as a result of inter-disciplinary work with geomorphologists, agronomists, and botanists. The analysis of Phytoliths – fossilized mineral particles produced biogenetically within plants – under microscope, has been found to be useful in the study of cultivated cereals. Palynological studies have also contributed to the investigation of landscape changes and the overall effect humans have on their environment, though usually only on a regional scale. Pollen studies are less helpful in elucidating changes on a micro-environmental level. Pollen cores have hitherto been taken from the Dead Sea and from the Sea of Galilee.

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In Pre-History

Some archaeologists date the beginnings of agriculture in Palestine to the Mesolithic



period, when the Natufian culture made its appearance with its bone and flint artifacts, some of which have survived to the present day. In the Kabara caves on Mt. Carmel, a flint sickle with its handle shaped to represent a fawn's head has been found. To that same period belong the sickles, mortars, and pestles which have been discovered in other localities in Palestine. According to these scholars, all these artifacts indicate the cultivation of cereals. According to others, however, these utensils were used merely to reap and mill wild grain. Archaeological finds testifying to soil cultivation and cattle raising become more numerous in the Neolithic Age, the period of caves and huts, agricultural implements, and cleaving tools. All these are evidence of settled communities which produced and stored food. To this period, likewise, belong excavated, prehistoric locations such as the Abu Uzbah cave on Mt. Carmel, the Neolithic cave near Sha'ar ha-Golan in the Jordan Valley and the lower strata of Jericho. In the Chalcolithic period, the transition between the Neolithic and the Bronze Age (4000 B.C.E.), agricultural settlements in the valleys, especially in the proximity of water sources, increased. Settlements were established in the plains of Moab (N.E. of the Dead Sea) where the Telleilat el-Asul (Ghassul) were found – mounds covering simple buildings, grain storages, agricultural implements, and artisans' tools made of calcareous or flint stone. By the later Chalcolithic period copper vessels like those found in Tel Abu-Matar near Beersheba appeared. In this area and at nearby Khirbet al-Bitar, excavations have unearthed ricewheat (*Triticum dicoccum*), einkorn (*Triticum monococcum*), two-rowed barley (*Hordeum distichum*), and lentils (*Lens esculenta* Moench). Elsewhere, olive and date kernels, grape seeds, and pomegranate rinds have been discovered.

From the Beginning of the Bronze Age to the Conquest of Joshua

This period includes the early (3000 B.C.E.), middle (until 1550 B.C.E.), and part of the late Bronze Age. The earliest literary evidence of local agricultural activity is provided by an inscription on the grave of the Egyptian officer Weni, who conducted a military expedition in Palestine during the reign of Pepi I (beginning of 24th century B.C.E.) "The army returned in peace after smiting the country of the sand dwellers [the inhabitants of the coastal plain]... after he had cut down its figs and vines." At that time the King's Highway running along the coastal plain and through the Jezreel and Jordan valleys became increasingly important, and many settlements were established along its length. Settlements were also founded in the south of the Judean mountains, for example at Tell Beit-Mirsim, apparently the biblical Debir. The Sanehat Scroll (20th century B.C.E.) described the travels in Palestine of this Egyptian officer and the document proves that, in the southern regions of the country, there were settlements which supported themselves by farming and cattle raising. Evidence of many settlements during the 18th century B.C.E. is furnished by the Egyptian "Execration Texts." During the Hyksos occupation, the Habiru, apparently the Hebrew tribes of the patriarchal era, are first mentioned. They were nomads who did not establish any permanent settlements. Some occupied the marginal grasslands and occasionally sowed there. Thus Isaac planted in the Nahal Gerar region "in that year," and, as a result of plentiful rain fall, reaped a "hundredfold" harvest (Gen. 26:12). Other scriptural



references suggest that the land was closely settled and highly valued at this time. Abraham's and Lot's shepherds quarreled with each other while the "Canaanite and Perizzite dwelt then in the land" (Gen. 13:7). For a burial plot he wanted to purchase, Abraham had to pay Ephron, the Hittite, the full price (ibid., ch. 23), and Jacob similarly had to pay a large sum for the section of the field in Shechem where he pitched his tents (ibid., 33:19). The depiction at the Temple of Amon of Thutmose's expeditions in Palestine (c. 1478 B.C.E.) and his famous victory at Megiddo includes reliefs of the plants he brought from Palestine (the Karnak "Botanical Garden"). An inscription states that "the amount of harvest brought... from the Maket [plain of Jezreel] was 280,000 heqt of corn [150,000 bushels] beside what was reaped and taken by the king's soldiers."

Early Israelite

In contrast to scriptural references, external evidence on the state of local agriculture just before and after the Israelite conquest is rather meager. Yet from all sources, the incontrovertible fact emerges that no radical climatic changes occurred. Huntington's theory of the country becoming increasingly arid from the biblical time until today must, therefore, be rejected. It is not supported by any examination of the sources or archaeological discovery. These indicate that the areas sown and planted then coincide with the regions watered by rain or irrigation today. An intensively farmed, settled area existed in the irrigated regions of the Jordan Valley and another along the Mediterranean coast (where the annual precipitation exceeds 300 mm.), but there were no stable agricultural settlements in the northern Negev. The land there was cultivated once in several years, when plentiful rainfall would yield abundant harvests. The southern Negev and Arabah were waste, except for desert oases and irrigation projects where waters flowing down from the mountains were collected in dams. Such projects were limited during the kingdom, but increased in the Nabatean era (see below). The condition of afforestation was no different then than at the beginning of Jewish colonization in modern times. Forest and woods spread over the hill and rocky regions which were difficult to cultivate and in areas where the lack of security made soil cultivation and the erection of agricultural installations too hazardous. The "vines and figs" of the regions bordering the routes of the traversing armies were pillaged. This explains the presence of woods in the Naḥal Iron (Wadi 'Arah) district mentioned in the expedition of Thutmose III (and later the "large forest" on the Sharon Plain mentioned by Strabo). Broad forests also extended along the north and northeast boundaries of the country – in Gilead, Bashan, and the Lebanon. There, in the vegetation along the Jordan and in the deserts, lurked wild beasts (see Fauna of Israel). During the intervals when the land lay desolate, animals would invade the ruins where forests had begun to grow. Several times the scriptural warning against the danger of a too rapid military conquest had been issued "thou mayest not consume them too quickly, lest the beasts of the field increase upon thee" (Deut. 7:22; Ex. 23:29; Num. 26:12). Having wandered in the desert for many years, the children of Israel were unfamiliar with local conditions and could hardly have been expected to succeed in mastering the intensive farming which obtained, for the most part, in the newly conquered territory. Furthermore, the neglect caused by wars and conquest had temporarily devastated large farming tracts, and these



had been overrun by natural forests – a condition later recalled in Isaiah 18:9. Scrub and woods became widespread, and farmland degenerated into pasture (cf. *ibid.*, 7:28).

During the transition period, the children of Israel, presumably, were primarily engaged in tending flocks, as in patriarchal days. The Song of Deborah yields no trace of extensive occupation with agriculture, even though the soil was tilled. The tribe of Reuben is described as living "among the sheep-folds, to hear the pipings of the flocks" (Judg. 5:16). Scripture also testifies to the existence of broad grazing lands in Gilead, and Bashan in Transjordan, the areas settled by the tribes of Reuben and Gad and half the tribe of Manasseh, all of whom owned much livestock (Num. 32; Deut. 3:19; Josh. 1:14). Although the Bible does portray the land of Canaan as "flowing with milk and honey" (date syrup), no conclusions can be drawn from this expression as to the relative importance of grazing land ("milk") as opposed to soil cultivation ("honey"). Livestock was raised to a limited extent in the border grassland regions and deserts, or was fed on the stubble of the grain fields and the stalks of the vegetable gardens. During the period of the conquest, sheep and cattle were also grazed in the forests which had covered the farm lands. The talmudic sages undoubtedly relied on an ancient tradition when they included, among the ordinances enacted by Joshua, one permitting the grazing of flocks in the wooded areas (BK 81a).

The agricultural prosperity of Israel, however, is determined by the rainfall. This fact is emphasized already in the Bible which praises the country as a land that "drinketh water as the rain of heaven cometh down" (Deut. 11:10–11), in contrast to Egypt which was irrigated. This blessing, however, also entails the danger, repeated several times in the Bible and rabbinical literature, that, on account of sin, rainfall could be withheld, with drought and famine resulting. Although the country is described as "a land of brooks of water, of fountains and depths springing forth in valleys and hills" (*ibid.*, 8:7), there is no evidence that in ancient times there were more than the hundreds of small springs and the few moderate and large fountains which now exist. Scripture praises the plain of the Jordan as "well watered," and so it is, even today (Gen. 14:10).

Either through experience or by borrowing the agricultural skills of the indigenous population, the Israelites gradually mastered the cultivation of the soil. The Talmud describes their predecessors as "well versed in the cultivation of the land," saying, "Fill this amount with olives; fill this amount with vines," and interprets their names accordingly: "Hori they that smelled the earth; Hivi they that tasted the earth like a serpent" (Shab. 85a). Even the spies admitted that Israel was a land "flowing with milk and honey and this is its fruit" (Num. 13). The Pentateuch states that the conquerors would enter a land with a highly developed agriculture, fertile soil, and established agricultural installations (Deut. 6:11). Special reference is made to hill cultivation where terraced fields were planted with vines and fruit trees and contained water cisterns, oil and wine presses, and tanks. Since the Canaanites had not yet been ousted from the fertile valleys, the wheat fields were not available to the Israelites (Judg. 1:19, 27–36).



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Hill cultivation is intensive by nature; land holdings are small, and knowledge and experience are needed for such farming to yield a livelihood. These conditions apparently explain why the descendants of Joseph (Ephraim and half the tribe of Manasseh) complained to Joshua that the mountain of Ephraim was too small to maintain them. Joshua advised them to go to the forests of Gilead and Bashan (the land of the Perizzites and Rephaim), fell the trees, and settle there; upon the assumption that in securing the dominating heights, they would succeed in dislodging the Canaanites from the valleys (Josh. 17:14–18). Clearing the forests was by no means easy, and was not yet completed in the reign of David, for this region included the "Forest of Ephraim" where the armies of David and Absalom fought each other (II Sam. 18:6–8). The Israelites did gradually succeed not only in mastering agricultural skills but also in organizing permanent town and village settlements. The nomads, enemies of the Israelites from the desert period, now envied the successful Israelite colonization. Together with their flocks, they raided Israelite territory and plundered the fields. Between each wave, the Israelites harvested their fields in haste and stored the produce in hidden receptacles (Judg. 6:2). Rather than use an exposed threshing floor, Gideon was forced to thresh his harvested wheat in a barn where fleeces were dried (*ibid.*, 6:37–40). He was a well-to-do farmer, owning cattle and sheep, vines, and wheat fields. The ordinary Israelite farmer, however, seems to have been poor. His main diet consisted of barley, and consequently the children of Israel were contemptuously represented in the Midianite soldier's dream as a "cake of barley bread" baked on coals (*ibid.*, 7:13).

The state of agriculture at this time may be deduced from the laws of land inheritance in the Pentateuch, and the descriptions of the settlement of the tribes, the divisions of parcels of land among the various families, and the procedure of redeeming estates recounted in the Book of Ruth. These sources reveal Hebrew agriculture as based on the small single family holding. It depicts an idyllic prosperous village life, although workers were only hired at harvest time, and even the wealthy Boaz personally supervised the stacking of the grain after the winnowing. In the course of time, however, a poor, landless class arose – as Scripture itself had foreseen: "the poor shall never cease out of the land" (Deut. 25:11). The unfortunates were the recipients of the gifts to the poor: the gleanings, the forgotten sheaves, the corners of the fields, the poor tithe. To the priests and levites, the heave offerings and tithes were given. The Book of Ruth reflects this, as well as the redeeming of fields to insure the continuity of family ties with the land. This almost sacred bond tying the Hebrew farmer to his inherited land was characteristic of Israel agriculture in every period. Here, too, is a reason for the speedy recovery of the local agriculture after every period of desolation. It should also be noted that the Israelite farmer always maintained a distinctly high cultural level. This fact is attested to by the "Gezer Calendar", which gives a succinct but comprehensive account of the annual cycle of seasonal agricultural occupations. If the conjecture is correct that this calendar was a lesson transcribed by a boy, it is evidence that formal instruction in agriculture was imparted during the period of the Judges. The Hebrews also acquired agricultural techniques from their neighbors, as may be deduced from Shamgar the son of Anath's smiting the Philistines with an ox goad (Judg. 3:31) – not the primitive



implement made entirely of wood, but one with a metal nail knocked through one end, and a metal spade attached to the other. In later sources, the dorban (also an ox goad) is mentioned as one of the few metal implements the Hebrews were allowed to take to the Philistines to be repaired and sharpened, metal work being prohibited to the Israelites lest they fashion arms to war upon their Philistine overlords (I Sam. 13:19–22). It appears that the children of Israel adopted agricultural skills and the use of the new types of implements brought by the Philistines who invaded the country in the 13th century from the Aegean islands, and who settled in the southern coastal region and the lowlands of Judah. Their main gainful occupation was farming. Although they were the enemies of the Hebrews, they nevertheless refrained from attacking the farms on the hills and in the valleys. A period of agricultural stability ensued. This period provides the background for the Book of Ruth.

First Temple Period

Israelite agriculture was based, as has been shown, on the autarchic family farm. With the rise of the monarchy, this order was threatened with collapse. Samuel warned the assembled people: "He (the king) will take your fields and your vineyards, and your olive yards, even the best of them, and give them to his servants" (I Sam. 8–14), but it is doubtful if the prediction came true. Although David owned royal estates over which he appointed officials (I Chron. 27:26–29), they were apparently conquered and annexed territories, or else previously unworked areas which were developed by royal initiative. In the days of Solomon, boundaries were extended, and officials "who provided victuals for the king and his household" (I Kings 4:7) administered the royal estates. Agriculture prospered, and the memory of that condition was perpetuated in Scripture: "Judah and Israel dwelt safely, every man under his vine and fig tree from Dan to Beer-Sheba..." (ibid., 5:5). Uzziah, king of Judah, is called "lover of husbandry," and was noted for owning fields and vineyards, and for building "towers in the wilderness and hewing out many cisterns" (II Chron. 26:10). Evidence corroborating this statement has been found in recent times through the excavation in the Negev hill region of an agricultural settlement, irrigated by an accumulation of rain water flowing down from the mountains. Settlements of this type were, apparently, guard posts and supply stations along the Negev caravan routes. In those days agriculture and agronomy reached their peak and were described by Isaiah as wisdom emanating from God, Who had taught the sons of man excellent methods of plowing and reaping (Isa. 28:23–29). It is noteworthy that these verses mention threshing implements which appeared only many generations later in Egypt and Rome. After the death of Uzziah security deteriorated and a decline set in among the Hebrew settlements in the lowlands. Against this background, Isaiah prophesied better days to come, when settlements would extend through the lowlands, when the farmer would sow his irrigated fields near the springs, and the shepherd tend his flocks without interference (ibid., 32:19–20).

The story of Naboth's vineyard, which was coveted by King Ahab, who wished to convert it into a vegetable garden, reflects agricultural conditions in the Northern Kingdom. Whereas the Jewish king respected the sanctity of a paternal inheritance to an Israel



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farmer, Queen Jezebel, a Sidonian princess, could not appreciate it (I Kings 21). With the passage of time, apparently, the poor and its widows and orphans were, in increasing numbers, likewise evicted from their holdings, and the prophet denounced those "who join house to house, that lay field to field" (Isa. 5:68). Nevertheless, in the main, the right of inheritance to patriarchal estates was upheld. When Jerusalem was actually under siege, Jeremiah, exercising his right of redemption, bought a plot of land (32:7–12). The remarkable agricultural prosperity of the land of Israel during the First Temple period is indicated in Ezekiel 27:17, which lists the exports of Judah and Israel to the market of Tyre as wheat of Minnith (probably a place in Transjordan), "pannag" (which cannot be clearly identified), honey, oil, and balm. With the destruction of the Kingdom of Israel at the end of the eighth century B.C.E. Samaria was denuded of its Israelite population, and repopulated by the nations the King of Assyria transported from other districts of his empire. The new inhabitants – later called Samaritans and in the Talmud, "Kutim" – failed to farm their land properly. Perhaps the lions that attacked them (II Kings 17:25–27) had found a lair in the forests which encroached on neglected farms. There is no further information on conditions in Galilee. Some Israelites must have remained, since Hezekiah communicated with them (II Chron. 30), and Josiah extended his domain over them (*ibid.*, 34:6). A few biblical passages point to persisting desolation, and a prophecy predicted the restoration of cultivation in Samaria (Jer. 31:5).

Second Temple Period

Having destroyed the Temple, Nebuzaradan left "the poorest of the land to be vinedressers and husbandmen" (II Kings 25:12), apparently tenant farmers or hired workers of the royal estates. He may also have left behind those familiar with local methods in order to prevent the further deterioration of the farms by unskilled and inexperienced labor. The impoverished Jews and the foreigners who settled in abandoned Jewish territory could not, however, maintain the terraced hill farms and orchards. When the exiles returned, they found the land forsaken and desolate. They proceeded to repair the terraces, to restore the agricultural installations and to plant vines and fruit trees. Yet, due to their ignorance of how to exploit the rain water for hill cultivation, they failed to establish viable farms. Somewhat later, conditions improved. Farming prospered, and the prophet Malachi regarded the changed situation as a manifestation of God's love for His people. Desolate Edom is contrasted with prospering Judah (1:2–3). From the books of Ezra and Nehemiah it appears, however, that this optimism was premature, particularly in view of the ensuing moral degeneration. Poor farmers were evicted from their lands by the rich, and a new landowning class emerged. The new conditions loosened the bonds of devotion tying the farmer to his patrimony, and Jewish agriculture suffered. Now the foreigners, who had been forced to restore the lands seized from the Israelites, began to raise their heads. They obtained employment from the new owners and were often able to buy back the lands they had forfeited. Fields, vineyards, and orchards were neglected, and the woods again spread. From these trees, the Jews were enjoined to cut branches and build tabernacles (Neh. 8:15). As a result of the social and agrarian reforms instituted by Ezra and Nehemiah the Jewish



population became more securely settled. Although a significant portion of the land still belonged to the king of Persia, the Jewish settlement broke through its boundaries by extending northward toward Galilee. The meager historical source material for the period includes the Book of Judith, assigned to the early fourth century (the period of Artaxerxes II, 404–359 B.C.E.). The setting of the book is the hills overlooking Jezreel, and the Jewish settlements mentioned as existing in the vicinity (Judith 7:3–13) apparently formed the link between the inhabited areas of Judea and the colonies that flourished in Galilee in later generations.

The level of Jewish agriculture in the Hellenistic period is not altogether clear. The author of the Letter of Aristeas (pars. 112–118: early third century B.C.E.) praised the agricultural productivity of the country and the great "diligence of its farmers. The country is plentifully wooded with numerous olive trees and rich in cereals and vegetables and also in vines and honey. Date palms and other fruit trees are beyond reckoning among them." He apparently exaggerated the extent of the irrigated areas and the importance of the Jordan River as a water source. He similarly referred to large parcels of land – "each a holder of one hundred aourora lots" – about 275,000 square meters. Perhaps he wanted to draw an analogy between the Nile and the Jordan, comparing the small lots of Judah with the large holdings of Egypt. Had Erez Israel been as densely populated as he claimed, the landholding of each family must have been much smaller than he estimated. His assertion might, however, indicate the growth of the landowning class on the one hand and a landless class on the other, conditions that arose soon after the return of the Babylonian exiles. The book of Ben Sira stresses such a contrast between the classes. In the Zeno papyri (259 B.C.E.), Syria and Palestine are described as exporters of agricultural produce: grain, oil, and wine.

The Hasmonean Period

A period of further consolidation and expansion of Jewish settlement. The Hasmonean revolt relied mainly on the farmers, who received their just reward once the war had been won when many Gentile holdings fell into their hands. The farmers adhered closely to the Torah, especially to the precepts pertaining to the land, such as the year of release. Josephus relates (Wars, 1:54–66) that John Hyrcanus was forced to raise his siege of Ptolemy's stronghold because of the scarcity of food occasioned by the sabbatical year. During the reign of Alexander Yannai the Hasmonean kingdom reached the peak of its expansion, Jewish colonization of Galilee increased, and it became the largest center of Jewish population outside of Judea.

The Mishnaic & Talmudic Periods

Began a generation before the destruction of the Temple and ends at the time of the division of the Roman empire. Josephus describes an abundance and fertility in the land at the end of the Second Temple period. He lavishes praise on Galilee in particular where "the land is so rich in soil and pasturage and produces such a variety of trees, that even the most indolent are tempted by these facilities to devote themselves to agriculture. In fact every inch of soil has been cultivated by the inhabitants; there is not



a parcel of wasteland. The towns, too, are thickly distributed and even the villages, thanks to the fertility of the soil, are all so densely populated that the smallest of them contains above fifteen thousand inhabitants" (Jos., Wars, 3:42–43). The last number is an obvious exaggeration, especially in view of the number of villages in Galilee, which he elsewhere puts at 204 (Jos., Life, 235). He also describes Samaria and Judea: "Both regions consist of hills and plains, yield a light and fertile soil for agriculture, are well wooded, and abound in fruits, both wild and cultivated... But the surest testimony to the virtues and thriving conditions of the two countries is that both have a dense population"; but he is less enthusiastic about Transjordan which "is for the most part desert and rugged and too wild to bring tender fruits to maturity." Yet, he continues, even there, there were "tracts of finer soil which are productive of every species of crop, country watered by torrents descending from mountains and springs" (Wars 3:44–50). He praises the valley of Gennasereth where "there is not a plant which its fertile soil refuses to produce" – both those "which delight in the most wintry climate" and those which "thrive on heat," and concludes that "Nature had taken pride in this assembly, by a tour de force of the most discordant species in a single spot" (ibid., 3:517–18). With equal enthusiasm Josephus regarded the valley of Jericho and the plentiful spring of Elisha which waters it. There grow "the most charming and luxuriant parks. Of the date palms watered by it there are numerous varieties differing in flavor ... here too grow the juicy balsam, the most precious of all local products, the henna shrubs and myrrh trees so that it would be no misnomer to describe this place as divine" (ibid., 4:468ff.). Similar praise of the date palms of Jericho are found in the nature studies of Pliny, who gives the names and characteristics of the varieties of dates which were export items (*Historia Naturalis*, 13:9). He also mentions the balsam groves of Jericho and En-Gedi, and writes parenthetically: "But to all the other odors that of balsam is considered preferable, a plant that has only been bestowed by Nature upon the land of Judea. In former times it was cultivated in two gardens only, both of which belonged to kings of that country.... The Jews vented their rage upon this shrub just as they were in the habit of doing against their own lives, while, on the other hand, the Romans protected it; indeed combats have taken place before now in defense of a shrub ... the fifth year after the conquest of Judea, these cuttings with the suckers were sold for the price of 800,000 sesterces" (ibid., 12:25, 24).

On account of the density of the population, holdings were quite small. The typical size may be estimated from Eusebius's account (*Historiae Eccleseatia*, 3:20, 1ff.) of the two grandsons of Judah, brother of Jesus, who declared to the Roman government that they derived their sustenance from an area of 39 plethra (34,000 m².) which they cultivated with their own hands, from which it follows that the average family derived its livelihood from 17,000 m². Several passages in talmudic literature refer to the unit bet kor or 30 se'ah (about 23,000 m² in area) as a large field and a substantial inheritance (e.g., Mekh., Be-Shallah, 87–88). On the other hand, some individuals at the close of the Second Temple period possessed immense fortunes. Among them was the almost legendary R. Eleazar b. Harsum (Kid. 49b), a high priest, "of whom it was said that his father had left him 1,000 cities, yet he would wander from place to place to study Torah"



(Yoma 35b). These cities were razed during the Bar Kokhba War (TJ, Ta'an. 4:8, 69a)

In those times, the state of agriculture fluctuated constantly in accordance with the policies of the Roman conquerors. Josephus relates that, after the destruction, Titus issued a decree expropriating Jewish landholdings which he ordered sold or leased out (Wars, 5:421). At first these lands were acquired mainly by Gentiles who leased the plots to the former Jewish owners, and these later tried to buy back their land. To assure the restoration of the lands to their former Jewish owners, the talmudic sages enacted ordinances forbidding competition and speculation in land (BB 9:4; TJ, Ket. 2:1, 26b; Git. 52a, et al.). On the other hand, a class of extremely wealthy landowners emerged at that time like the nasi dynasty, R. Eliezer b. Azariah, and others, who had acquired heirless estates from the Roman government. Asked what constituted a wealthy person, their contemporary R. Tarfon answered: "Whoever owns 100 vineyards, 100 fields, and 100 slaves to work them" (Shab. 25b). The response, it should be noted, is one of the isolated instances in rabbinic literature which refers to the employment of slave labor in agriculture (see also TJ, Yev. 8:1, 8d). Gentile (there were no Jewish) slaves were chiefly employed in housework and urban domestic services, whereas agriculture was the province of farmers, tenants, lessors, and hired workers. In the first years following the destruction, Gentiles still possessed and also worked many former Jewish farms. Rabbinic literature alludes to this situation in the gloomy baraita: "For seven years the Gentiles held vintage in the vineyards soaked with Israel's blood without fertilizing" (Git. 57a). With the passage of time, however, the Jewish population resettled on the farms and regained ownership. Natural increase forced the size of each family's holding to decrease, the average now being four-five bet se'ah, i.e., 3,000–3,500 m². of field crops, the area known as bet ha-peras (Oho. 17:2 – in Latin: forus). Plots of this size are mentioned in deeds of sale dating from the time of Bar Kokhba, found in Wadi Murabba'at in the desert of Judah (Benoit, Milik, de Vaux, Les grottes de Murabbaat, pp. 155ff.). These documents speak of the sale of "an area where five se'ah of wheat can be sown." Presumably an area of 3,500 m² sufficed to supply the cereal needs of a family. In addition the farmer owned vines and orchards. Executed during Bar Kokhba's rebellion, these deeds prove that even in the thick of war, Jews continued to buy and sell land.

The rebellion and its aftermath seriously affected Jewish agriculture. Certain localities were utterly devastated, "since Hadrian had come and destroyed the country" (TJ, Pe'ah 7:1, 20a). Especially in Judea, where the Roman government took possession of the lands of the thousands of war dead, the desolation was great. In the words of the aggadah: "Hadrian owned a large vineyard, 18 mil square, and he surrounded it with a fence of the slain of Bethar" (Lam. R. 2:2, no. 4). Galilee, too, sustained heavy damage. Before "the times became troubled," the area had been so densely populated that R. Simeon b. Yoḥai found a way of measuring the distances between the villages so that not one was beyond the Sabbath range (2,000 cubits) of its nearest neighbor (TJ, Er. 5:1, 22b–c). Its olive groves had previously been so numerous that one "dipped one's feet in oil" there, yet later "olives [were] not normally found there" (TJ, Pe'ah, 7:1, 20a).



Oppressive decrees and heavy taxes jeopardized the existence, both physical and spiritual, of the farmer. Before the revolt, Simeon b. Yoḥai, the disciple of Akiva, was particularly interested in the religious precepts applying to land; after it, he complained: "Is that possible? If a person plows in the plowing season and reaps in the reaping season... what is to become of the Torah?" (Ber. 35a). The suggested solution was employment in trade and in crafts in the city. Yet once again, agriculture recovered. Jewish settlement expanded and even penetrated to the northern coastal regions (Tosef., Kil. 2:16).

Further increases in population led to further decrease in the size of family holdings. In the next generation there is a conflict of opinion as to what constituted the minimum size of land divisible among heirs. The majority of sages held it to be a plot large enough to provide each heir with one and a half bet se'ah (1,176 m².) while Judah regarded a field even half that size as divisible among heirs (BB 7:6; Tosef., BM 11:9). Normally a single owner would have several fields of this size, yet there were cases where an individual farmer had to subsist on an even smaller plot of land. A certain Samaritan reportedly drew his sustenance from a field a bet se'ah in area (784 m²; Ket. 112a).

The period from the disciples of Akiva until the third amoraic generation (middle of second century to end of third century C.E.), was both spiritually and physically one of the most productive periods of all times. It saw an unprecedented progress in agriculture. Highly cultured, the Jewish farmer did not allow himself to stagnate and he was always ready to adopt new techniques and to experiment with new strains (see Agricultural Methods). Many aggadot celebrate the abundance and fertility of the land of Israel at the time, and mention grape clusters as large as oxen; mustard as tall as fig trees; two radishes being a full load for a camel; turnips large enough to constitute a fox's den; a peach large enough to feed a man and his animal to satiety, etc. Certain localities were designated as the referent in "the land of milk and honey," as for instance, sixteen mil around Sepphoris in Galilee and the vicinities of Lydda and Ono (see Meg. 6a; Ket. 111b; TJ, Pe'ah 7:4, 20a–b).

Depression set in at the end of R. Johanan's lifetime. "In his days, the world changed" (TJ, Pe'ah 7:4, 20a), either through natural causes (BM 105h) or else through Roman taxation. In any event the lot of the farmer became progressively worse. Farmers had, in earlier times, most strictly observed the prescriptions of the sabbatical year; now they became more lax (Sanh. 26a). Previously "one was not supposed to raise sheep and goats" in the land of Israel; now Johanan advocated sheep raising (Hul. 84a). It had obviously become increasingly difficult for the Jewish farmer to be self-supporting. In principle, R. Eliezer, who had previously laid down that whoever did not own land was no man, now came to the cruel realization that there was no occupation less distinguished than agriculture. Only those farmers close to the rulers could maintain themselves, and he therefore concluded: "Land was only given to the powerful" (Yev. 63a; Sanh. 58b).



An exodus from village to city ensued in which the process of the displacement of the Jewish farmer began. Gentiles replaced them to such an extent, that the question arose as to whether most of the land of Palestine was in Gentile or Jewish hands. The new owners neither felt an attachment to the land nor possessed the skills of their predecessors. Especially in the hill regions, lands were now abandoned or turned into pastures, and once more the forests began to encroach on the deserted farms.

The Byzantine-Muslim Period

Under Byzantine rule, the situation hardly improved. However there is evidence, even for that time, of the existence of Jewish settlements in the Valley of Jezreel and in the Negev, as well, where remains of exquisite ancient synagogues are visible (Bet Alfa, Nirim, etc.). The Nabatean agriculture which flourished in the Negev mountain area is also noteworthy. This people had developed a highly perfected system of gathering runoff water and so irrigating arid, desolate regions. With the Moslem conquest, many Byzantine lands were laid waste, the owners fleeing or killed. These lands became state property and were leased out to tenant farmers. The Muhammadan rulers were totally ignorant of agriculture and their heavy taxes drove the owners from the land. Here and there, especially in Galilee, some Jewish settlements persevered. Later, there was an improvement. By the 11th century Ramleh figs had become an important export item, and cotton, sugar cane, and indigo plants were cultivated.

The Crusader conquest wreaked further damage on local agriculture. The Franks, who took possession, farmed large tracts extensively, using a combination of European and local techniques. The village population became serfs indentured to the land. There is almost no information available on Judea at that time. It is known, however, that Jews suffered less than the Muslim population at the hands of the crusaders. There is mention of Jewish settlements in Galilee (Gischala (Gush Halav), Alma, Kefar Baram, etc.) where the population engaged mainly in handicrafts and trade. Little is known of Jews in Palestine in the time of the Mamluks. At the end of the 14th century, Jews expelled from France settled in Erez Israel, among them Estori Parhi, whose work *Kaftor va-Ferah* describes the country and its agriculture. The author made his home in Beth-Shean, an area where Jews were living, as they did too, in Safed, Gischala, Lydda, Ramleh, and Gaza.

A marked improvement in agriculture and an increase in population occurred under Ottoman rule, at the end of the 16th century. Jews were engaged in the manufacture of finished products from agricultural raw materials: wine, textiles, and dyeing. They lived in Ein Zeitim, Biriyyah, Peki'in, Kefar Kanna, and elsewhere. In the 17th century the Jews in the villages were harassed by both Bedouin tribes and government soldiers; the population there consequently declined. Dahir al-Amr who ruled over Galilee in the 1740s encouraged the settlement of fallahin, and Jews also came to live in the region, in villages like Kefar Yasif and Shefaram. After his death, another period of decline ensued. Only at the end of the 19th century was there noticeable improvement. The Jewish population increased, and Sir Moses Montefiore among others formulated plans for



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settling Jews on the land. The Mikveh Israel agricultural school was founded in 1870 and a little later the first Jewish colonies, Moza and Petah Tikvah sprang up. In 1881, the American consul in Jerusalem noted that 1,000 Jewish families were earning their livelihood from agriculture. Colonization gained new strength from the First Aliyah in 1882, and from then and until today the extent of Jewish agricultural settlement has been constantly expanding.

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J. Schwarz, *Tevu'ot ha-Arez* (19003); M. Zagorodsky, *Avodat Avoteinu* (1949); B. Cizik, *Ozar ha-Zemahim* (1952); Alon, *Toledot*; S.D. Jaffe, *Ha-Hakla'ut ha-Ivrit ha-Kedumah be-Erez Yisrael* (1959); S. Hurwitz, *Torat ha-Sadeh*, 3 (1959); Y. Feliks, *Olam ha-Zome'ah ha-Mikra'i* (1968); idem, *Ha-Hakla'ut be-Erez Yisrael bi-Tekufat ha-Mishnah ve-ha-Talmud* (1963), incl. bibl.; idem, *Kilei Zera'im ve-Harkavah* (1967); idem, in: *Sefer ha-Emek* (1957), 123–33; Aharoni, *ibid.*, 107–14; Yeivin, *ibid.*, 115–22; H. Vogelstein, *Die Landwirtschaft in der Zeit der Mischna* (1894); Krauss, *Tal Arch* 2 (1911); Loew, *Flora*; Dalman, *Arbeit*; A.L.E. Moldenke, *Plants of the Bible* (1952).

From Botticini and Eckstein

From Farmers to Merchants: A Human Capital Interpretation of Jewish Economic History*

Maristella Botticini† and Zvi Eckstein‡
January 2003

Abstract

Since the Middle Ages the Jews have been engaged primarily in urban, skilled occupations, such as crafts, trade, finance, and medicine. This distinctive occupational selection occurred between the seventh and the ninth centuries in the Muslim Empire and then it spread to other locations. We argue that this transition was the outcome of the widespread literacy among Jews prompted by an educational reform in the first century CE. Based on the growing nexus between education and Judaism in the first half of the millennium, we build a model in which Jewish men choose education, occupation, religion, and location. The model predicts that when urbanization expands (as it did in the Muslim Empire), Jews move to new cities due to their comparative advantage in urban, skilled occupations. Furthermore, before urbanization a proportion of Jewish farmers are predicted to convert to other religions. The predictions of the model regarding conversions, migrations, and reduction in the size of the Jewish population are consistent with the historical evidence about the first millennium provided by the historians. Hence, our study presents evidence for the long-term economic implications of changes in social norms.



1 Introduction

Why since the Middle Ages have the Jews been engaged primarily in urban, skilled occupations, such as crafts, trade, finance, and the medical profession? Why were the Jewish people a

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minority in many urban centers and towns? When and why did this occupational selection and demographic characteristics become the distinctive mark of the Jews? Is there an economic theory that can explain these facts and pass the test of its other implications? In this paper we provide an answer to these questions based on a human capital theory that is consistent with facts collected, described, and interpreted by historians.¹

The distinctive occupational and residential structure of the Jews has attracted the attention of scholars of Jewish history. Abrahams (1896) and Roth (1938) promoted the well-accepted view that the Jews were not engaged in farming like the rest of the population because of the restrictions and prohibitions imposed by the local rulers. Since the late Middle Ages, in many countries Jews were prohibited from owning land, and in certain areas they were forbidden from living in rural areas. Moreover guilds excluded them from working in certain crafts within urban areas.

Kuznets (1960) also addressed these questions. Like Reich (1960), he established the fact that at the end of the nineteenth century and the beginning of the twentieth century, the Jews in Europe and North America were not engaged in agriculture independently of the size of the agricultural sector in a given country (Table 4 in Appendix B). Furthermore, although engaged in almost all urban occupations, the Jews specialized in trade and finance. Kuznets explained this fact as the outcome of an endogenous decision within an economic theory of small minorities. Taking the minority status as exogenous, he argued that the minority's noneconomic goal of maintaining its identity made the Jewish minority specialize in certain occupations.

In stating their arguments, both Roth and Kuznets were influenced by the observed economic structure of the Jews in the nineteenth and early twentieth centuries. However, the transition of the Jews away from agriculture into crafts, trade, and finance occurred in the eighth century mainly in Mesopotamia and the entire Muslim empire, and later in western Europe where the Jews migrated. At the time when the occupational transition was occurring, none of the restrictions and prohibitions discussed by Abrahams and Roth existed. Jews owned land but were not engaged at all in agricultural work. Narrative evidence also indicates that at this time, the Jews were aware that their new urban occupations enabled them to improve their standard of living. Hence, the restriction theory cannot account for the occupational transition. As for



Kuznets' theory, notice that before the occupational transition, in the first half of the millennium the Jews were farmers and were also a minority in the lands of the Roman and Persian empires.² Given that they were a minority even when they were farmers, Kuznets' theory would predict that they should stay in this occupation to preserve their group identity that had been built at that time for a farming society.³ Yet, Jews did not remain farmers despite their minority status. The historians Baron (1937; 1952), Ben-Sasson (1976), and Gil (1992; 1997), who described and analyzed the transition from farming to crafts, trade, and finance in urban centers in Mesopotamia, Palestine, and the rest of the world during the eighth and ninth centuries, maintained that deteriorating agriculture and urbanization in the Muslim empire made almost all

¹Our model follows Becker and Lewis (1973)'s and Becker (1975)'s theory of children's quality. The utility and cost specifications are similar to those of Iannaccone (1992), the specification of the intergenerational transmission of religious traits is similar to the one in Bisin and Verdier (2000), and the occupational choice is the same as Roy's (1951). At the same time, we use the historical evidence provided in the academic works of historians.

²In Palestine the Jews became a minority from the fourth century on. The province of Judaea was renamed Syria Palaestina by the Romans after the Bar Kokhba Revolt in 135 CE.

³The geographic dispersion and minority status of the Jews just before the transition to urban occupations were similar to those of the Jews in the nineteenth and twentieth centuries. For example, in Babylon from the fifth to the eighth century the Jews were a minority like in Poland in the early twentieth century.

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the Jews move into urban occupations. The question is: Why did the Jews move into these occupations whereas almost all other inhabitants remained engaged in agriculture?

Our thesis is that the distinctive characteristic of the Jews at that time was that almost all Jewish men were literate. The Jews had a comparative advantage in the skilled, high-paid occupations demanded in the new urban centers developed by the Muslim rulers.

Why were Jewish farmers (and Jews in general) literate whereas the rest of the rural population was illiterate at the beginning of the seventh century? The Jewish religion made primary education mandatory for boys in the first century when the high priest Joshua ben Gamala (64 CE) issued an ordinance that "teachers had to be appointed in each district and every city and that boys of the age of six or seven should be sent."⁴ In the first century CE, the Jewish warrior and writer Josephus underlined that children's education was the principal care among the Jews.⁵ After the destruction of the Temple in 70 CE, Judaism changed from a religion that was mainly concerned with sacrifices and ceremonies performed by priests in the Temple to a religion whose core was centered around learning the Torah. The synagogue became the center of this activity. From the second to the sixth century, Jewish leaders promoted further the learning and reading of the Torah and the recently redacted Mishna and Talmud by degrading the status of those who remained illiterate ("am ha-aretz"). The compulsory education for boys and the reading of the Torah, Mishna, and Talmud became the essence of Judaism.⁶ The monumental work of Goitein (1967—1988) from the documents of the Cairo Geniza provides extensive evidence of the full implementation of mandatory primary schooling for boys in the Jewish communities in the Mediterranean at the turn of the millennium.⁷

Based on this historically documented nexus between education and Judaism, we build a model whose main assumption is that Jews derive higher utility from their children's literacy (education) than non-Jews. An adult Jewish man chooses the level of education for his children, his occupation (trade or farming), religion (Jewish or non-Jewish), and location (migration). We further postulate that Jewish education (literacy) has a positive effect on a merchant's income but not on a farmer's income. Obviously the model predicts that Jews invest more in



their children's education, and given that, that they always prefer to be merchants. Yet, the demand for merchants restricts the proportion of Jews employed in urban occupations. When urbanization expands (as it did in the early Muslim empire), the Jews move to the cities where the returns to their human capital are high. Hence, our answer to the main question raised in this paper is that the occupational selection of Jews into urban, skilled occupations was mainly

⁴It is a popular view (see the debate in Brenner and Kiefer (1981) and Ayal and Chiswick (1983)), that Jews (and other diasporas) invested in human capital because, unlike physical capital, it is portable and cannot be expropriated. However, the decision by Jews to invest in human capital came before the migrations and was motivated mainly by religious reasons.

⁵Josephus Flavius, *Against Apion*, Book I, sec. 12, and Book II, sec. 19.

⁶The Mishna consists of six volumes of rules. It was written in Hebrew during several hundred years and was redacted in Eretz Yisrael in about the year 200 CE by Rabbi Judah the Prince. The six volumes of the Mishna are: Zeraim deals with the rules for land cultivation, Moed with feasts, Nashim with wedding, divorce and intimate relations, Nezikin with financial issues, Kedeshim and Teharot with sacrifices and other Temple related issues. The Gemara consists of interpretations of the Mishna, debates and allegories told and written by Jewish scholars and rabbis in Palestine and Babylon from the third to about the end of the sixth century. Mishna and Gemara together form the Talmud. There are a Jerusalem Talmud and a Babylonian Talmud.

⁷The Cairo Geniza documents refer to the thousands of contracts (sales, marriage deeds, loans, business partnerships), last wills, letters, and courts records that were found in a synagogue in Old Cairo in Egypt. The documents marvelously depict the economic, demographic, and social life of many Jewish communities in the Mediterranean from about the ninth throughout the thirteenth century.

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the outcome of (i) the Jews' investment in literacy, and (ii) urbanization.

The model's other important implication is that the cost of children's education for farmers makes a certain proportion of Jewish farmers convert to non-Jewish religions in each generation. The question is whether historically these conversions were significant. According to historians (Baron 1952, 210; 1971) and demographers (DellaPergola 2001), the key demographic fact in the first millennium was the sharp decrease in the world Jewry from about 4.5 million in the first century to about 1-1.5 million in the sixth century.⁸ This is the period when Jews worldwide were still farmers and, yet, education became the center of the Jewish religion. At the same time, Christianity emerged as a segment of Judaism that did not assign the same importance to literacy and education. Historical sources indicate that about one million Jews lost their lives during the revolts against the Romans in Judaea (70 and 135 CE) and in Egypt (115 CE). There is also evidence of some forced conversions to Christianity, but the description of these episodes of conversions from the fourth to the sixth century cannot account for the remaining reduction (2 million) of the Jewish population. The model's prediction of a slow process of decrease in the Jewish low-educated population due to conversions is supported by the historical evidence. The model's prediction regarding migrations is that Jewish farmers with high preference for Judaism would migrate to centers of Jewish life if in their own country economic conditions deteriorate. The large migrations from Egypt and Palestine to Babylon in the second and third centuries provide evidence in favor of this prediction. Another prediction related to migration is that once Jews become merchants (as they did in Mesopotamia where about 70 percent of the world Jewry lived in the second half of the millennium), they would have an incentive to migrate to new urban cities where crafts, trade, and finance provide high returns to their high human capital. The fast migration of Jews during the ninth and the tenth centuries to western Europe and the high standard of living acquired by them in these locations is consistent with this prediction. The evidence also supports the model's prediction that these Jewish traders were among the most educated Jews, who learned the logical thinking provided by the enormous



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amount of debates and daily life analysis in the Mishna and Talmud.

Our paper contributes to two strands of literature. First, we suggest a different interpretation of the economic history of the Jews in the past two millennia. We aim to show how economic models can help analyze these issues and provide a different perspective on historical facts. Second, the economic history of the Jews offers a unique case for studying the impact of changes in social norms on economic performance over the long run. Some economic patterns that we observe nowadays (e.g., the selection of Jews into urban, skilled jobs) have been heavily influenced by social norms, religious attitudes, and cultural values that emerged centuries ago.⁹ From this point of view, our project is related to recent work that endogenizes the formation of social norms and studies their impact on economic outcomes (e.g., Mailath and Postlewaite 2002; Fang 2001).

The paper is organized as follows. Section 2 presents the theories set forth to explain the occupational selection of the Jews into crafts and trade. Section 3 discusses these arguments in light of the historical evidence. Section 4 highlights the nexus between Judaism and education. Section 5 outlines the model and section 6 compares the predictions of the model with the

⁸Baron gave a figure of 8 million Jews at the beginning of the first century CE. After talking with Sergio DellaPergola and other scholars, and after reading and evaluating various sources, we decided to choose the lower bound (4.5 million) of the estimates on the size of world Jewry in the first century.

⁹See Berman (2000) for a study of the economic and social characteristics of Ultra-Orthodox Jews in contemporary Israel.

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historical evidence. Section 7 concludes.

From Slate (summary of above)

Why Jews Don't Farm
By Steven E. Landsburg

In the 1890s, my Eastern European Jewish ancestors emigrated to an American Jewish farming community in Woodbine, N.J., where the millionaire philanthropist Baron de Hirsch provided land, tools, and training at the nation's first agricultural college. [Correction, June 16, 2003: The Baron De Hirsch Agricultural College was not the first agricultural college in the United States.] But within a generation, the family had settled in Philadelphia where they became accountants, tailors, merchants, and eventually, lawyers and college professors.

De Hirsch had a vision of American Jews achieving economic liberation by working the land. If he'd had a better sense of history, he would have built not an agricultural college but a medical school, because for well over a millennium prior to the settlement of Woodbine, Jews had not been farmers—not in Palestine, not in the Muslim empire, not in Western Europe, not in Eastern Europe, not anywhere in the world.

You have to go back almost 2,000 years to find a time when Jews, like virtually every other



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identifiable group, were primarily an agricultural people. Around A.D. 200, Jews began to quit the land. By the seventh century, Jews had left their farms in large numbers to become craftsmen, artisans, merchants, and moneylenders—the only group to have given up on agriculture. Jewish participation in farming fell to about 10 percent through most of the world; even in Palestine it was only about 25 percent. Everyone else stayed on the farms.

(Even in the modern state of Israel, where agriculture has been an important component of the economy, it's been a peculiarly capital-intensive form of agriculture, one that employed well under a quarter of the population at the height of the Kibbutz movement, and less than 3 percent of the population today.)

The obvious question is: Why? Why did Jews and only Jews take up urban occupations, and why did it happen so dramatically throughout the world? Two economic historians—Maristella Botticini (of Boston University and Università di Torino) and Zvi Eckstein (of Tel Aviv University and the University of Minnesota)—have recently been giving that question a lot of thought.

First, say Botticini and Eckstein, the exodus from farms to towns was probably not a response to discrimination. It's true that in the Middle Ages, Jews were often prohibited from owning land. But the transition to urban occupations and urban living occurred long before anybody ever thought of those restrictions. In the Muslim world, Jews faced no limits on occupation, land ownership, or anything else that might have been relevant to the choice of whether to farm. Moreover, a prohibition on land ownership is not a prohibition on farming—other groups facing similar restrictions (such as Samaritans) went right on working other people's land.

Nor, despite an influential thesis by the economic historian Simon Kuznets, can you explain the urbanization of the Jews as an internal attempt to forge and maintain a unique group identity. Samaritans and Christians maintained unique group identities without leaving the land. The Amish maintain a unique group identity to this day, and they've done it without giving up their farms.

So, what's different about the Jews? First, Botticini and Eckstein explain why other groups didn't leave the land. The temptation was certainly there: Skilled urban jobs have always paid better than farming, and that's been true since the time of Christ. But those jobs require literacy, which requires education—and for hundreds of years, education was so expensive that it proved a poor investment despite those higher wages. (Botticini and Eckstein have data on ancient teachers' salaries to back this up.) So, rational economic calculus dictated that pretty much everyone should have stayed on the farms.

But the Jews (like everyone else) were beholden not just to economic rationalism, but also to the dictates of their religion. And the Jewish religion, unique among religions of the early Middle Ages, imposed an obligation to be literate. To be a good Jew you had to read the Torah four times a week at services: twice on the Sabbath, and once every Monday and Thursday morning. And to be a good Jewish parent you had to educate your children so that they could do the same.

The literacy obligation had two effects. First, it meant that Jews were uniquely qualified to enter higher-paying urban occupations. Of course, anyone else who wanted to could have gone to school and become a moneylender, but school was so expensive that it made no sense. Jews, who had to go to school for religious reasons, naturally sought to earn at least some return on their investment.



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Only many centuries later did education start to make sense economically, and by then the Jews had become well established in banking, trade, and so forth.

The second effect of the literacy obligation was to drive a lot of Jews away from their religion. Botticini and Eckstein admit that they have little direct evidence for this conclusion, but there's a lot of indirect evidence. First, it makes sense: People do tend to run away from expensive obligations. Second, we can look at population trends: While the world population increased from 50 million in the sixth century to 285 million in the 18th, the population of Jews remained almost fixed at just a little over a million. Why were the Jews not expanding when everyone else was? We don't know for sure, but a reasonable guess is that a lot of Jews were becoming Christians and Muslims.

So—which Jews stuck with Judaism? Presumably those with a particularly strong attachment to their religion and/or a particularly strong attachment to education for education's sake. (The burden of acquiring an education is, after all, less of a burden for those who enjoy being educated.) The result: Over time, you're left with a population of people who enjoy education, are required by their religion to be educated, and are particularly attached to their religion. Naturally, these people tend to become educated. And once they're educated, they leave the farms.

Of course there are always exceptions. My great-grandfather raised chickens. But he did it in the basement of his row house in north Philadelphia.

[Correction, June 16, 2003: The Baron De Hirsch Agricultural College was not the first agricultural college in the United States. At the time the college opened in 1894, there were dozens of agricultural colleges in the United States. Most were established through the 1862 Morrill Act, which had given states land grants to fund public agricultural and mechanical colleges.]

From MyJewishLearning.com

Seder Zeraim (Agriculture)

Though most Jews no longer live in an agricultural society, some of the mishnaic laws related to agriculture remain directly relevant for contemporary urban and suburban lives.

By Rabbi Jill Jacobs

Most of Seder Zeraim receives less attention in the Diaspora, because its laws only apply inside the Land of Israel. There is no Babylonian Talmud on Seder Zeraim (with the notable exception of the much-studied tractate on Berakhot (“blessings”).

The average contemporary reader will find Seder Zeraim fairly puzzling, if not irrelevant. As the name (“Seeds”) suggests, this section of the Mishnah focuses on agricultural laws, hardly the most pressing topic for most of today's urban and suburban



Jews. However, the dedication of an entire seder of the Mishnah to agricultural issues reminds us the extent to which Judaism emerged out of an agriculturally-based community.

While individual agricultural laws may have lost their direct relevance for many of us, discussions about religious governance of what was once a central part of everyday life can guide our own explorations of the role of Judaism in our everyday lives.

The Themes of Seder Zeraim

The Jewish agricultural laws, as expressed in the Mishnah and in other rabbinic sources, suggest a belief that one's land and produce is never entirely one's own. Six of the 11 masekhtot (tractates) that make up Seder Zeraim concern the obligation to dedicate a certain percentage of one's produce to sustaining the kohanim (priests), the Levites (who served in the ancient Temple), and the poor, who do not have land of their own.

One tractate, Peah ("corner"), deals with the obligation to leave some of the harvest of one's fields for those in need. Tractate Kilayim ("holding back") addresses a limitation on agricultural production: the Bible prohibits mixing two types of seeds in the same field. Shvi'it ("the seventh year") focuses on the laws of Shemittah ("release") during the sabbatical year when farming is prohibited. Orlah (the "uncircumcised" tree), concerns the prohibition against eating from trees that are younger than three years old.

Bikkurim ("first fruits"), discusses the obligation to offer God one's first fruits on the holiday of Shavuot.

In total, all but one of the tractates in Seder Zeraim are devoted to laws limiting production or limiting the grower's ownership of his/her produce. The remaining—and first--tractate, Berakhot, does not deal with agricultural issues at all.

The Law of Peah (Leaving the Corners)

The law of pe'ah ("corner"), discussed in the tractate of the same name, refers to the biblical command, "When you reap the harvest of your land, you shall not reap all the way to the edges of your field . . . you shall leave them for the poor and the stranger" (Leviticus 23:22). As is typical, the Mishnah defines more precisely the parameters of a fairly vague biblical law. While the first mishnah (or unit) of tractate Pe'ah declares the commandment regarding pe'ah to be among the obligations for which no upper or lower limit is defined, the second mishnah declares:

"One may not set aside less than 1/60 of one's land as pe'ah, and even though we have said that pe'ah has no upper or lower limit, everything goes according to the size of the field, according to the number of poor people, and according to the size of the crop" (Mishnah Pe'ah 1:2).



While acknowledging that the Torah leaves the term "edges" undefined, the Mishnah defines the term in such a way as to maintain the spirit of the biblical law. Since the Torah explains pe'ah as a means of sustaining the poor of the community, the Mishnah specifies that the obligation for pe'ah varies according to one's personal wealth and according to the needs of the poor. In this way, the Mishnah transforms a vague commandment into more specific guidelines about the division of one's field.

The Shemitah Year (the Land's Sabbath)

Like the law of pe'ah, the laws of the shemitah year, discussed in Tractate Shvi'it, are based on a biblical command that limits ownership of one's land:

"When you enter the land that I assign you, the land shall observe a sabbath of the Lord. Six years you may sow your field and six years you may prune your vineyard and gather in the yield. But in the seventh year the land shall have a sabbath of complete rest, a sabbath of the Lord: you shall not sow your field or prune your vineyard" (Leviticus 25:2-4).

Tractate Shvi'it expands the biblical law of shemitah by defining the beginning and the end of the year, adding to the categories of prohibited agricultural work, and applying the laws of shemitah to fruits and vegetables not mentioned in the Torah. Presumably, as is the case in Tractate Pe'ah, the legal strictures of Tractate Shvi'it aim to preserve the spirit of the biblical law of Shvi'it by eliminating as many loopholes or potential leniencies as possible.

Ma'aserot (Tithing of Produce)

The greatest part of Seder Zeraim is devoted to the laws of ma'aserot (tithing). The obligation to tithe is derived from a series of biblical passages that command the separation of part of one's produce for kohanim, for levites, and for the pilgrimage to Jerusalem. The Torah specifies neither the amount of these tithes nor the types of produce subject to these tithes. As is the case throughout Seder Zeraim, the Mishnah transforms the vaguely-stated biblical requirement to tithe into a precise and unambiguous set of laws.

The commandments to tithe are scattered throughout the books of Numbers and Deuteronomy. The relevant verses require giving an unspecified portion of one's bread and of one's sacrifices to the kohanim (Numbers 15:20; Deuteronomy 18:34), giving a portion of the harvest to the Levites, setting aside a tenth of one's produce to be eaten in Jerusalem (Deuteronomy 12:17-19; 14:22-23), setting aside one-tenth of every third year's produce for the poor (Deuteronomy 14:28), and helping to sustain the levites, who have no land of their own (Deuteronomy 12:9; 14:27).



The Order of Tithes

To synthesize these scattered commands into a coherent system, the Mishnah assigns a set order and quantity to each of the tithes. The Mishnah defines the order of the tithes as follows:

Terumah: A gift to the kohanim of between 1/60th and 1/40th of one's crop

Ma'aser rishon: A gift to the levites of 1/10th of the crop that remains after

Terumah has been separated. The levite, in turn, gives the kohen 1/10th of this gift.

Ma'aser sheni: During the first, second, fourth and fifth years of the seven-year cycle, 1/10th of the remaining produce is set aside to be brought to Jerusalem and eaten there by owner.

Ma'aser Oni: During the third and sixth years of the seven-year cycle, a tithe for the poor replaces the Ma'aser sheni.

Categories of Produce to be Tithed

The Mishnah is most concerned with defining specific laws for vague biblical commandments. Thus, Tractate Ma'aserot, the tractate that offers general rules about tithes, begins:

"[The sages] established a general rule about ma'aserot: anything that is food and is guarded and grows from the earth is subject to ma'aserot...When do fruits become subject to ma'aserot? Figs from the time they have been gathered and left for twenty-four hours [and are ready to eat], grapes and wild grapes when they begin to mature, sumac and mulberries when they become red, and all the red fruits when they become red."(1:1-2)

The Bible specifies neither the types of produce subject to tithing nor the appropriate time for tithing. The Mishnah eliminates this ambiguity by detailing the process of tithing and by defining the categories of food that need to be tithed.

Tractate Berakhot (Blessings)

As its name suggests, Berakhot focuses on the laws of prayer--the format and order of prayers, the times for reciting certain prayers, and the appropriate blessings for various foods and occasions. It is not clear why this tractate appears in Seder Zeraim. Some suggest that the inclusion in this tractate of blessings over different types of produce justifies its inclusion in the seder devoted to agricultural laws. However, the majority of Tractate Berakhot addresses other issues of prayer and blessing; the fact that some of



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the blessings included in the tractate are agriculturally-connected does not seem to offer sufficient explanation for the inclusion of this tractate in Seder Zeraim.

The Relevance of Seder Zera'im For Modern Jews

Of the tractates in Seder Zeraim, Tractate Berakhot remains most obviously relevant and most studied today, as prayers and blessings continue to play a central role in Jewish ritual practice. The sixth chapter, which focuses on blessings for different types of food, and the ninth chapter, which designates blessings for certain occasions, are good starting points for explorations of the place of blessings in Judaism, and of the theology that underlies our system of blessings and prayers.

Although we do not observe the laws of pe'ah in the literal sense of leaving the corners of our field for the poor, Tractate Pe'ah remains a powerful statement about our responsibilities to the poor and our relationship to our property. In addition, the general principles laid out in its first chapter can help us better understand all our obligations regarding giving to those in need.

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