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QUANTITATIVE ANALYSIS OF WAQF ENDOWMENT DEEDS : A PILOT PROJECT

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During the past decades, quantitative analysis of greater or lesser degrees of sophistication has gradually been accepted as one of the methodological tools in the study of Middle Eastern history. Various individuals and groups working independently of each other have begun to grapple with the problems of quantifying data whose format is unique to Middle Eastern societies or which present culturally-specific methodological difficulties. Often, the lack of communication between scholars facing similer problems has resulted in duplicate work and disparate solutions. While multiple efforts may broaden the spectrum of approaches to quantification, it also hampers the comparability of data and findings. One of the purposes of this article is to bring to the attention of the community of Middle East scholars the experience of a research team which attempted to develop a quantitative framework for the analysis of *waqf* endowment deeds.

In 1978-79, a team of scholars under the direction of the late Gabriel Baer embarked on a project to study the social and economic aspects of the Muslim waqf[1]. At an early stage of our joint discussions, it was decided that quantitative analysis of information included in *waqfiyyat* (endowment deeds) would enable us to arrive at answers to many important general questions on the waqf based on massive hard data, and to make comparisons between different

1 The project was carried out under the auspices of The Harry S. Truman Research Institute and The Institute for Advanced Studies of The Hebrew University of Jerusalem. The members of the team were : Aharon Layish, Gad Gilbar, Haim Gerber, Miriam Hoexter and myself.

regions and time periods. These documents are natural material for quantitative analysis. They exist in published and archival form in vast number throughout the the Islamic world, yet they have a more or less uniform format. Moreover, waqfiyyat include valuable information on a broad range of subjects which are beyond the capacity and interests of a single researcher. While endowment deeds have been utilized singly or in relatively small numbers for discrete research, the massive data contained in thousands of waqfiyyat can only be collated let alone analyzed by quantitative methods.

The most critical phase in any large-scale quantitative project is devising a uniform format for the collection and recording of the data. Based on our common experience and pure logic, we developed a questionnaire which we hoped would encompass all the relevant information and variations in the documents. It soon became clear, however, that a pilot run based on a variety of waqfiyyat which were easily accessible would be necessary. Slightly over one hundred endowment deeds were collected from Egypt, Syria, Palestine, Istanbul and Anatolia, ranging in dates from 1340 to 1947[2]. The main purpose of the pilot was to test and improve the questionnaire, but we also hoped that the findings even from a small and unrepresentative sample of endowment deeds would shed light on certain substantive questions regarding the waqf.

For a variety of reasons, the comparative analysis of a large body of waqfiyyat has not yet been pursued beyond the pilot stage. At the same time, a number of area-specific studies based on quantification of other waqf records have appeared. Our knowledge and experience in this area have broadened, and we are in a better position to evaluate realistically the potential of this tool.

2 The population of the pilot project was drawn from : the Jaffa Muslim court records (*sijills*); Ali Pasha Mubarak, *Al-Khitat al-Tawfiqiyya al-Jadida* (Cairo, 1304-5 A.H.); Kamil al-Ghazzi, *Nahr al-dhahab fi tarikh Halab* (Aleppo, 1342-5 A.H.); Omer Lutfi Barkan ve Ekrem Ayverdi, *Istanbul Vakıfları Tahrir Defteri, 953 (1546) Tarihli* (Istanbul, 1970); M. Tayyib Gökbilgin, *XV-XVI Asırlarda Edirne ve Paşa Livası* (Istanbul, 1952); various articles in *Vakıflar Dergisi*. The waqfiyyat taken from Ghazzi were those interspersed in the text, not from the comprehensive listing.

THE CODING SHEET

The coding sheet is a uniform questionnaire according to which the information from each document is listed in the form which will eventually be entered into a data bank in the computer. The waqfiyyat coding «sheet» actually comprised almost twenty pages. Accompanying the coding sheet is a set of instructions specifying how the information is to be entered. Some instructions may be embedded in the coding sheet (see sample page), but as the material becomes more complex, a separate coding manual is required. Both the coding sheet and the coding manual in their final from contain certain mechanisms to allow for unanticipated categories of information (as illustrated below) within the basic format set in advance.

There are two basic approaches to the formulation of a coding sheet : to adhere as closely as possible to the text of the original document, or to organize the data according to an analytic framework. (In recent years, the development of Arabic-English computers and soft-ware has opened new dimensions in this respect.) Each of the approaches has its advantages and drawbacks. The text-oriented method is more suitable for establishing a data bank as a pool of information and reference. The analytic approach is usually preferred when research goals are more defined. The two, however, are not mutually exclusive. The basic format is also related to the scope of data to be extracted from the texts. The richer and broader the source material, the more difficult is the decision as to what major elements and specific items to include. Moreover, when dealing with documents which embody variety as well as uniformity, it is difficult to forsee the frequency of certain types of information. The primary aim of the Jerusalem team was directed research on social and economic aspects of the waqf. Our approach to the coding sheet, therefore, was more analytic. We did include a fairly large number of basically exploratory or information-gathering questions — in retrospect, probably too many.

The tentative coding sheet devised is composed of several major sections corresponding to the main elements of waqf deeds : identification of the waqfiyya and its source; information on the

founder; the endowed properties; the primary, intermediate and ultimate beneficiaries — divided into sections relating to family (*ahli*) and purely charitable (*khayri*) beneficiaries, with various combinations; the administration; and general conditions and stipulations.

There are certain units of information in the waqfiyya which may be repeated any number of times. The founder, for example, may provide for several consecutive administrators, or the waqf may comprise a large number of different types of specific beneficiaries concurrently or subsequently. These repeated units of information were concentrated on a single page (which was tagged by a latin letter) and we allowed for the inclusion of as many additional pages of the same type as necessary. Thus, if more than three administrators are designated, more copies of the relevant page can be added. Each of these items was given a priority number as designated by the founder of the waqf so that we could differentiate between concurrent and/or subsequent administrators or beneficiaries. The final beneficiary or administrator was numbered O to facilitate retrieval of this category which is of particular interest.

One of the major problems we faced was finding the golden mean between including every scrap of information which any researcher may be interested in and still keeping the coding sheet within manageable proportions. Often, we simply did not know how frequently certain types of information would appear in waqfiyyat. On the other hand, as anyone who has utilized these document can attest, waqfiyyat may include virtually every kind of condition or stipulation which the human mind can invent and which have a bearing on a wide variety of subjects, ranging from ethnic and regional solidarity to the sexual activities of *madrasa* students. Also, there is information in the waqfiyyat which can only be deciphered and analyzed by researchers with special expertise and knowledge.

We tried to solve these problems by including questions which are essentially «flags» for researchers who wish to study specific subjects in depth. Thus, for example, we included an item on the administrator's duties and responsibilities, and space for the coder

to write in the description. If a relatively large number of cases were found to include this information, we could extract the identification numbers of the appropriate waqfiyyat. The «flag» technique is a valuable tool for meeting specific needs, and it could expand the potential of the data bank to encompass disciplines other than social and economic history (such as architecture, cultural and religious history, numismatics, culinary history, etc.). It is clear, however, that the «flags» have to be limited to a yes/no format to simplify and shorten the coding process. Also, the coding sheet should be regarded as a temporary tool and not an intermediary source. In other words, retrieval of information in the future should be based exclusively on the computer data bank and reference to the original source.

For some kinds of information, we devised tables of three or four digit codes (similar to the mailing codes prevalent throughout the world) where each digit provides a certain category of information and the various combinations allow for a variety of possibilities. Extensive tables of this kind were devised for geographic locations, religious communities, types of endowed properties, family beneficiaries, types of charitable beneficiaries, and administrators. In the coding of administrators, we differentiated in the first digit between male and female individuals; office-holders who were granted the administration ex officio; waqf institutions; and the appointment of the administrator by the court or by the ruler. We also allowed for the designation «*arshad*» (the most suitable among a more or less defined group of candidates), or for the stipulation that the management of the waqf be granted to an individual or institution which administers other awqaf. The second and third digits include all the different specific types of administrators which we anticipated or which appeared in the course of the pilot project, grouped into family members; religious, socio-economic and political types; specific waqf institutions; and miscellaneous. Thus, we can differentiate between a mufti who obtains the administration of a waqf on a personal basis and the designation that the mufti of a certain city or region is granted the administration ex officio, a distinction which has important implications as regards the relative independence of the ulama and elite mobility.

This technique allows for additional types of administrators to be included in the overall framework of relevant groups (other family members, other religious, other socio-economic, etc.). In addition, spaces were provided to enter a brief description (in latin letters) of an administrator who fell into one of the «other» categories. If there are a large number of «others», the descriptions can be extracted, new administrator types which appear frequently defined, and the data recoded accordingly.

The inclusion in a basically analytic coding sheet of lettered text may be used for other purposes such as personal names, titles, and other specific information. It may be utilized when the coder is not familiar with the terminology of disparate regions and periods (such as measures and currencies). On a socio-philological level, it can be employed to attempt to define technical terms (such as *mutawalli* and *nazir)* from their contexts. This tool, however, should be used sparingly and with fore-thought, for the historians natural tendency to collect every potentially valuable piece of information can result in lengthy and unwieldy coding sheets and data banks.

Geographic location appears in several contexts in the coding sheet i.e. location of the endowed properties, of the charitable beneficiaries, of the administrator, etc. The aim was to go beyond the basic question of geographic dispersal of endowments in general to more complex issues of the flow of economic and social resources between regions and the socio-economic peripheries of urban centers. A great deal of work was invested to devise a system of location codes which would be relevant to the Middle East at different time periods, would permit the «redrawing» of political boundaries, and would provide for sufficient local detail. Subsequently, we discovered that at least one other location code system for the islamic world had been devised independently of our efforts[3]. This is a classic example of double efforts resulting in similar solutions to the same problem, although each of the systems has its stronger points and weaknesses. The Onomasticon Arabicum project, whose

3 Phil Pritchard, «Biographical Information Filing System» (N.Y.: Middle East Quantitative History Group, 1979); cf. Richard W. Bulliet, *Conversion to Islam in the Medieval Period: An Essay in Quantitative History* (Cambridge, Mass., 1979), pp. 7-15.

approach is text-oriented, preferred to record locations by name in transliteration[4]. While this method has certain advantages, geographic locations are a type of data which eventually should be converted into a universally-accepted numeric coding system. The utility of such a system is widespread, the element of value-judgement is limited, and the technical problems of identification are minimal. Moreover, there already exist several gridding systems used by cartographers which convert geographical locations all over the globe to numerical from. To the extent that a location coding scheme adopted by Middle East scholars is synchronized with a grid system it would enable plotting of geographic data on maps (along the lines of what Petry attempted)[5].

Similarly, we had our coders convert the Muslim hijri date to the Gregorian calendar. It should be possible, however, to devise a program which will do this conversion automatically (if this hasn't been done already).

The pilot coding sheet is still not in a satisfactory final from. During the coding process and the first run of computations additional problems were unearthed and lessons learned. At the same time, what appeared as methodological preparation for the real research actually forced us to address many substantive questions about the variegated and fascinating facets of the waqf, and about Middle East society and economy.

THE CODING PROCESS

As historians, accustomed to working individually and directly with original source material, we had certain doubts about the ability of coders to understand and evaluate information on a wide variety of subjects, regions and periods. We were demanding a great deal of expertise from the graduate students who undertook this task : knowledge of oriental languages (possibly including decip-

4 «Enterprise internationale de l'Onomasticon Arabicum : etat actuel (novembre 1980)» (Paris : Institut de Recherches et d'Histoire des Textes).

5 Carl Petry, «Geographic Origins and Residence Patterns of the Ulama of Cairo in the Fifteenth Century» (PhD dissertation, University of Michigan, 1974).

hering hand-written manuscripts), familiarity with local terminology, and an understanding of the overall logic and details of the coding system. Obviously, it is essential that the coding be as uniform as possible, without variations based on the differing judgements of the coders. The coding manual provides explicit and detailed instructions as to how to code each and every item in the coding sheet, but invariably questions and problems arise, particularly in a pilot project. The coders must work with a supervisor who assists in defining border cases, handling unanticipated categories, and checking the reliability and uniformity of the coding. Our coders were actually active participants in the development of the coding sheet, giving us valuable feed-back even before the first computations were received[6]. A critical issue, for example, is information which may not appear directly in the document but can be deduced by researchers with broader knowledge and experience (such as the religious affiliation of the founder), From our experience, it is advisable for each coder to specialize in a limited number of regions and/or periods with which he or she can become fairly familiar. The coder should also have constant access to an expert in this field.

The extraction of information by deduction is related to a crucial methodological and interpretative question : the meaning of missing data in different contexts. Sometimes, if an item is not included, this provides us with definite information i.e. the founder of the waqf did not appoint himself administrator of the endowment in his lifetime (45% of the waqfs in the pilot population). In other cases, missing data refers to questions which are not relevant. A waqfiyya which does not specify clerks for the management of the waqf clearly cannot stipulate that such clerks be family members. The «unknown» which denotes that the information we seek is simply unavailable is the bane of any researcher. Where it appears too frequently, the item must be eliminated from the study. Bu there remain many border cases where the absence of explicitly specified information is open to interpretation. If the ethnic origin of the founder

6 Most of the coding was done by Noa Meridor. Avner Levy assisted with the Turkish material, and Yehoshua Fraenkel spent long hours searching the sijills for waqfiyyat.

is not clearly indicated in the waqfiyya (as was true in 91% of the waqfs), can we reliably deduce it from the context, or conclude that ethnicity was not a significant identifying factor in that society, or determine that waqfiyyat are not a suitable source for this subject? What of sufi affiliation or *madhhab* which in fact appeared even less frequently?

The handling of missing data has important implications during the coding process, on the computations and in the presentation and interpretation of the findings. The best strategy is probably to be conservative in the initial coding and the re-code if warranted. This guarantees that the original information is not distorted but allows for more dynamic use of the material.

When dealing with very large quantities of documents, it is possible to have each case coded independently by different coders and cross-checked by the computer for discrepancies. This procedure is more or less standard for massive quantitative manipulation, but it is also quite costly. Another method which alleviates the problems of judgement and expertise is to code the information as close as possible to its rendition it the original document.

Some researchers may prefer to code the material themselves. While this is certainly a laborious task and requires total familiarity with the coding process, experience shows that it gives the researcher a feel for the data which he wouldn't have if someone else did the coding. On the other hand, this approach limits the breadth of the data which one researcher can encompass. It would appear that the policy adopted by the Onomasticon Arabicum whereby individual scholars code material they are studying according to a single coding system, and allow general access to their data after they have utilized it for their discrete research, is an effectiv procedure.

FIRST FINDINGS AND LESSONS

The first and basic findings of a quantitative project are relative frequencies of the answers to all the questions posed and categories defined in the coding sheet (in absolute numbers and percentages). These first figures have both methodological and substantive value. For one thing, coding errors which were not caught earlier may ap-

pear. More important, it is at this stage that we can establish concretely which units of information appear frequently enough to permit further study and which questions simply cannot be answered on the basis of these documents (the infamous «unknown» category). The frequency count also gives us a general description of the data bank as a whole as well as interesting first findings.

Establishing the social religious identity of the founders of endowments was a top priority. Among the 104 waqfs in our population, 73% of the founders were men, 25% were women, and 2% were jointly endowed by men and women. Some 96% were Muslims, but only one could be endowed by men and women. Some 96% were Muslims, but only one could be identified with a *madhhab* and two with a sufi order. Although titles appear infrequently relative to the volume of endowments, they are important for establishing the social and political rank and function of the founder. In our collection of endowments there were 17 pashas, 2 beys, 2 effendis, 6 aghas and 3 shaykhs.

In about two-thirds of the cases, it could be ascertained whether the founder was a member of the ulama or the military and civil bureaucracy. (The remaining third fell into the unknown category.) While forty-eight founders were military and/or administrative types, only one was an alim.

Information on occupation and specific job or rank was included in about one-third of the waqfs, and more than one-half included a «family name». The precise socio-political identification of these founders, however, requires additional information from external sources. A computerized data bank may be utilized to retrieve waqfs from a specific region and period by names of founders and/or occupations, and a scholar with experience in this area can combine this data with information from other sources to draw a more complete socio-political picture. This method has been employed with some success using a data bank of waqfs from Aleppo meshed with biographical material[7].

Information on the founders of endowments elicited from waqfiyyat enable us to determine not only what proportion of waqfs were

7 Ruth Roded, «The Waqf and the Social Elite of Aleppo in the Eighteenth and Nineteenth Centuries» (forthcoming).

established by men and women, members of the ruling elite, or the religious establishment, but also unique characteristics of endowments of these social groups. Did the pashas, for example, tend to endow rual property to a greater extent than the population at large? Did they prefer charitable projects or was their primary concern providing for their families? The answers to these questions would shed light on the resources of the ruling elite as well as mechanisms of elite continuity.

Despite our optimism regarding the use of waqfiyyat for economic studies, we found that endowment deeds generally do not provide precise or consistent data on the size and value of the endowed properties. Waqf accounts have proven to be far more useful for in-depth economic analysis. Agricultural property is often described in very vague terms in the waqfiyyat, and urban property is usually defined as a function of sites which were familiar to the residents of the city at the time. The value of the properties in concrete and comparable economic terms is usually impossible to establish. The detailed lists of properties endowed do, however, give an indication of the types of economic resources available and convertible to waqf.

The maximum number of different properties endowed in a single waqf was seventeen, but the vast majority included one to five (less than twenty waqfiyyat had 6-17 properties). Thus, the 104 waqfs comprised 341 endowed properties. Of these, 58% were urban real estate, 35% were rural property, and 5.5% were various forms of cash. A number of cases included moveables such as livestock or books. Unanticipated categories which cropped up were a racetrack and a restaurant. The most frequently endowed specific types of property were: residential buildings (20%), shops (12%), and cultivated land (11%), but properties which appeared less frequently such as khans (4%) and markets (1%) were obviously of greater size and value. The differentiation between frequency of endowment and size, and the importance of the latter, cannot be overemphasized. It would be extemely valuable if we could arrive at a method to estimate the size of the waqf in rough terms (large, medium, small) since reliance solely on the frequency of endowments may be misleading. Such a scheme, however, would of necessity involve a large judgemental factor.

The data on endowed properties in the waqfiyyat, despite their limitations, depict the relative importance of different economic resources in broad terms. In conjunction with other information in the endowment deeds, they can illuminate important socio-economic and political issues such as the flow of economic resources from rural to urban areas, between peripheral areas and political and cultural centers, and from one social group to another.

In every endowment deed, the founder must stipulate precisely the individuals and/or institutions which will benefit from the income generated by the endowed properties (or the use of the properties). The income may be divided among several primary beneficiaries concurrently, but in addition, the founder must indicate how the income will be distributed in the event of the death or extinction of primary beneficiaries. Since a waqf is endowed in perpetuity, where benefits have been allocated to the founder's descendants, a provision is included which stipulates that in the event of the extinction of the family, the benefits will be be allocated to an institution. Similarly, if the charitable institution no longer exists, the income will be transmitted to another institution. The final beneficiary is usually a general charitable purpose or an institution such as the Haramayn which is presumed to be eternal.

The late G. Baer fostered an ongoing debate as to how meaningful the dichotomy between family (ahli) and charitable (khayri) endowments was prior to modern waqf reforms. The waqfs in our collection were defined as «pure ahli», «pure khayri» or joint in the first instance, with a number of permutations and combinations as to subsequent beneficiaries. Nevertheless, during the coding process, certain cases were found to be problematic. Sometimes, the bulk of the waqf was granted to the founder's family but small sums were set aside for Quran readings or such like. Alternately, the waqfiyya stipulated that the remainder of proceeds after all charitable beneficiaries received their allocation would revert to the family of the founder. Clearly, it is difficult to evaluate whether the remainder is 10 % or 90 % of the income. As a result, 1 % of the waqfs couldn't be defined as to major ahli/khayri patterns.

The waqfs included in the pilot project broke down into: 25 % ahli in the first instance, 55 % khayri and 14 % mixed (with a small

number falling into other categories). The founder was designated beneficiary in his lifetime in 37 % of the waqfs.

The distribution of benefits among family beneficiaries an the succession of subsequent family members may provide valuable data on the structure of the Middle Eastern family and the purposes of family endowments. Aharon Layish, who has expertise and experience in these matters, helped us devise a pretty sophisticated four-digit coding scheme based on Quranic rules of inheritance and anthropological kinship terminology which in various combinations provides for virtually every relative as well as freed slaves and their children. He also provided a long list of specific questions on stipulations, conditions and restrictions regarding family beneficiaries, particularly women.

Of the 104 waqfs, 44.2 % (46) included a primary family allocation (all of the pure ahli and joint as well as a few others). The maximum number of different types of family beneficiaries listed in a single waqf was nine, but the majority included three or less. Thus, the total number of types of family beneficiaries was 163 (36 % of which had first priority). These were widely dispersed among a large number of discrete types and require recoding for meaningful analysis (see below). Among the most frequently listed beneficiaries, appearing nine or ten tims, were «male and female, descending, agnatic and cognatic, primary Quranic inheritors» more commonly known as children (first beneficiaries), and male and female freed slaves (usually subsequently).

The distribution of benefits among first priority family members can probably be ascertained. The number of individuals in each ahli category was indicated in 31 % of the 163 listings, and in 19 % the rough percentage of total family benefits was explicitly specified or easily calculated. A provision for residence was granted to 15 % of the family beneficiary types, and 10 % received their «shar'i share».

Of the numerous questions on conditions posed, only two were found with any meaningful degree of frequency, but these are quite interesting. In 2-15 % of the waqfs including primary family allocations, women were granted benefits for their lifetime only (most

often daughters), and in 9 % daughters were to receive benefits only when there were no surviving sons.

The ultimate pattern of succession to family benefits was of sons and daughters in the male line in 30 % of the ahli waqfs, agnatic male issue in 20 %, and descending issue without sex preference in 16.7 %. But in 20 % of these cases, the pattern of succession did not fit any of our pre-defined categories and included every possible combination the human mind can invent. In the course of coding, we added categories, but the next waqf would contain another variation.

Quantitative analysis of endowment deeds is potentially a very valuable tool for the study of the Middle Eastern family, but interpretation of much of the data requires expertise and experience in the technical aspects of this field (as Aharon Layish has demonstrated)[8]. The answers to questions of broader interest may be obtained by reducing the numerous and complex categories to simpler terms.

The descriptions of charitable beneficiaries in the waqfiyyat encompassed far more information and detail than we anticipated. The khayri beneficiaries were coded according to general type including: specific major institutions religious and educational institutions; «social services»; family charitable objects (e.g. family tomb, rites in memory); economic; and miscellaneous. For each of these, the specific purpose was defined as building, major improvement, maintenance, salaries, consumers or undefined. In the wake of additional experience in analyzing waqf documents, Gad Gilbar proposed differentiating between religious staff, maintenance staff, and administrative staff which is a more meaningful social and economic breakdown. Listing all office holders and their salaries will be extremely laborious but it will provide extremely valuable information.

Of the waqfs included in the pilot project, 73 % included charitable beneficiaries in the first instance, and 45 % had subsequent khayri beneficiaries. A single waqf comprised as many as twenty-

8 Aharon Layish, «Family Waqf and Law of Succession», in Gebriel Baer and Gad Gilbar, eds., *Social and Economic Aspects of the Muslim Waqf* (forthcoming).

three different khayri beneficiary types concurrently and five subsequently. But most included less than six primary charitable beneficiarise and two subsequent and ultimate beneficiaries or less. The total number of primary khayri beneficiaries was 322, and 95 more were intermediate or ultimate.

Of the 322 primary khayri beneficiaries, the most frequently listed types were *jami* mosques (27 %), *masjids* (11 %), *madrasas* (11 %), *sabils* (9 %), *kuttabs* (8 %) and sufi institutions (7 %). The Haramayn or the poor were each almost 5 % of the primary charitable endowments, which is more frequent than would have been expected for objects usually regarded as final depositories for waqf benefits. Salaries were the most fequently listed specific purpose of benefits (38 %), followed by maintenance (24 %) and consumers (21 %). When the type of primary charitable beneficiary was linked to the specific purpose, it was found that the single most frequent allocation was to salaries for jami mosques (followed by maintenance of these central mosques). Among the madrasas though, allacoations to students (consumers) was second to salaries and more frequent than maintenance. In general, salaries were included most frequently for jami mosques, madrasas, regular mosques, sufi institutions and kuttabs. Consumers received benefits most frequently in madrassas and kuttabs (excluding the poor who were the most frequently mentioned «consumers»).

An annual allocation in cash was found for 30 % of the primary khayri beneficiaries. Although this proportion is not sufficient for analysis of the economic breakdown of charitable benefits, it *may* provide concrete information on salaries of the staffs of religious and educational institutions and stipends to students and pupils.

Among the subsequent charitable beneficiaries, the most frequently included were the poor (33 %), the Haramayn (17 %), jami mosques (11 %) and the al-Aqsa mosque in Jerusalem (7 %). The latter were from the numerous waqfs registered in Jaffa, but although a large proportion of the endowments included in the pilot population were from Egypt, al-Azhar represented only 2 % of the charitable beneficiaries. It would be interesting to extract Haramayn endowments from the masses of waqfs in various regions and periods and compare them to Miriam Hoexter's detailed de-

scriptive and quantitative studies on the waqf al-Haramayn in Algiers[9].

Of the 104 waqfs in our population, 73 % included information on the administration. The absence of this critical information (as well as subsequent khayri beneficiaries) indicates that certain sources from which we hoped to extract the main elements of the endowment deeds will not suitable for this purpose (see below). The maximum number of administrators listed for a single waqf was eight, but the majority contained less than three. Thus, the total number of administators was 171. Some 44 % of these were family members or slaves, 8 % religious figures, 8 % determined by the court, 7 % institutions and 4 % political-military types. The most frequent specific types of administators were : the most suitable among the founder's descendants (code 514, 9 %), the founder's son (111, 8 %), the administrator to be determined by court (600, 699, 8 %), and the most suitable among other members of the founder's family (519, 6 %). Most of the sons were to be administators in the first instance, whereas the other family members and descendants were spread among various ranks of priority. (The court determination was always the ultimate provision for administration). Some 44 % of the administrators were also beneficiaries, in particular large proportions of family members.

In 55 % of all the waqfs, the founder was the administrator in his lifetime. Specific provisions for clerks to manage the waqf were included in 36 % of the endowments, 37 % specified the administrator's fees (often in specific sums), and 30 % contained other instructions or conditions regarding the administration. The term mutawalli appeared in 61 %, nazir in 43 %.

The first findings of our pilot quantitative analysis of endowment deeds raised as many questions as it answered. Important methodological conclusions were reached as to the quantity and quality of the data in waqfiyyat, and the strengths and weaknesses of the coding format. The results of the «simple» frequency counts described above prompted us to further manipulation of the data in order

9 Miriam Hoexter, «Waqf al-Haramayn and the Turkish Government in Algiers», in Baer and Gilbar, and a quantitative study in progress.

to solve problems and answer additional questions. The next step was cross-tabulation of two variables (such as khayri beneficiary type by specific purpose) which provides tables including three different types of percentage figures. These tables may comprise extremely interesting analytic findings, but when working with a large data base, the expected results of cross-tabulation must be carefully thought out. Pages and pages of meaningless cross-tabulations may supply useful scrap paper, but they do not further research.

Even in a research oriented format, it soon becomes necessary to extract or create meaningful analytic categories from the multiplicity of data. This process is the most powerful feature of quantitative analysis enabling us to determine the characteristics of select groups compared to the population as a whole or other groups[10].

Before presenting the results of analysis of this kind, the frequency of information about geographical location in several contexts should be summarized. All 104 waqfs included the place where the endowment was registered, but only in 26 % was the founder's place of origin identified. The location of endowed properties was included in 89 % of the waqfs, spread out over as many as five different areas. The location of primary charitable beneficiaries was indicated in 76 % of the endowments and 25 % of the administrators were identified by location. It would seem that it will be possible to trace the geographic relationship (in rough terms) between income producing properties and charitable beneficiaries.

FURTHER ANALYSIS : ULAMA, WOMEN, INDIRECT FAMILY BENEFITS

As noted earlier, only one founder of a waqf was determined to be from the ulama, while forty-eight were military and/or administrative types. To evaluate the degree of control over waqfs

10 Ruth Roded, «The Waqf in Ottoman Aleppo: A Quantitative Analysis», in Baer and Gilbar; «Tradition and Change in Syria during the Last Decades of Ottoman Rule: The Urban Elite of Damascus, Aleppo, Homs and Hama, 1876-1918» (PhD dissertation, University of Denver, 1984).

by these two social groups, the data on administration was recoded and extracted by specially defined categories. Our findings showed that of 76 waqfs with information on the administration, ulama were named administrators in 36 % while military-political types were identified in 8 %. (These categories are not mutually exclusive). Among the ulama administrators, however, only one was appointed on an individual basis, whereas the vast majority were granted the administration ex officio (including appointment by the court). Also, most of the ulama administrators were of the last priority. The military-political administrators identified were all ex officio (in one case the sultan was named), and they appeared in the first and last priorities.

In other words, there is an indication that control of waqfs passed to a certain extent into the hands of the religious elite in the course of time. The ulama seem to have gained control of these endowments ex officio and therefore waqfs were not necessarily autonomous economic resources in the full sense. As for the waqf institutions which administered major and numerous smaller endowments, it has yet to be determined which of these were controlled by military-political figures and which by ulama. Moreover, the large number of waqfs administered by the founder's family (and slaves) may indicate that more endowments than are reflected in the figures above were actually controlled by the military-political elite. Although there was a long-range tendency for waqfs to pass from family hands to various ex officio or institutional administrators, there is also evidence of families maintaining or regaining control of endowments over centuries.

A quantitative study of some 1500 waqfs from Aleppo revealed that 40 % of the founders were women, but even more significant, the endowments established by women did not differ considerably from those of men as to size, type of property endowed, and purpose[11]. The questions which this study could not answer (because of the limitations of the source) was to what extent were women beneficiaries and administrators of endowments.

11 Roded, «The Waqf in Ottoman Aleppo».

In our pilot population, 25 % of the waqfs were established by women. The women founded proportionately more family endowments than men (42 % cf. 20 %), and slightly less charitable waqfs (46 % cf. 57 %). Of all the family beneficiaries (163), 17 % were women and 55 % did not exclude women. Female beneficiaries most frequently mentioned were wives, daughters and women who were not identified as relatives of the founder.

If we assume that charitable benefits devolved primarily to men, then it is clear that waqfs did on the whole serve as a vehicle for transmitting personal property from women to men. On the other hand, further analysis is required to determine to what extent family endowments aimed at depriving women of their share of the patrimony[12].

About 14 % of the waqfs for which the administration was listed stipulated female administrators, and 28 % did not specifically exclude women. Male founders tended to appoint men administrators more frequently than female founders, but even among waqfs established by women, 73 % named male administrators only. The few female administrators were for the most part of the first priority. They were most frequently wives of the founder, other female family members or daughters. Of the charitable endowments, 5 % named female administrators and 5 % did not exclude women from the administration.

While women were founders of fairly large proportions of waqfs, control of these endowments was granted for the most part to men and tended to pass in time into the hands of men[13]. Where the waqfiyya does not specify the sex of the administrator (such as descendants of the founder), some scholars might presume that in fact women were excluded. This presumption has yet to be verified, and it would appear that the access of female descendants to the administration of endowments was an important factor in marital alliances.

12 Cf. Layish, «Family Waqf and Law of Succession».

13 Cf. Gabriel Baer, «Women and Waqf: An Analysis of the Istanbul *Tahrir* of 1546», in Gabriel R. Warburg and Gad G. Gilbar, eds., *Studies in Islamic Society* (Haifa, 1984), pp. 9-27.

The absolute numbers of endowments including women as administrators in our population is small, and therefore, manipulation of the figures and their interpetation should be guarded. Of course, the larger the overall number of waqfs included, the greater the number of cases relating to women. Waqf documents have proven to be a very important source of information on the role of women in Islamic society, and further analysis of women as founders, beneficiaries and administrators will certainly enhance our understanding of this complex issue.

In the context of social and economic aspects of the waqf, one of the questions of interest is to what extent ostensibly charitable endowments provided indirect material benefits and/or social and economic resources to families. Of the 57 waqfs defined as pure khayri, 16 % included allocations to a family-linked beneficiary (such as rites in memory of members of the family, a family tomb, or the family poor). An additional indication that khayri beneficiaries were connected to the founder's family (charity located in the family quarter, staff were family members, etc.) was found in 25% of the charitable waqfs. Control of the endowment via the administration was granted to family members in 32% of the charitable waqfs, and a few actually specified that the clerks who would manage the endowment must be family members. In order to evaluate the extent of material benefits to the family, we created a new category of waqfs in which either the beneficiary was family-linked or the administrator was from the family or family members were employed in the management. Some 44 % of the charitable endowments included material benefits of these types. (By adding waqfs in which slave administrators were mentioned, the proportion rose to 47 %.) Material benefits as well as a less clearly-defined family connection was found in 54 % of the charitable endowments. External information on t he families and charitable beneficiaries would probably increase the proportion of khayri waqfs which provided broad social benefits to the founder's family. In any case, our findings indicate that almost half of the purely charitable endowments actually contained material benefits for the founder's family.

The quantitative analysis of social issues described above is merely an indication of the kind of questions which can be addres-

sed by manipulation of data included in waqfiyyat. The findings and interpretation must of necessity be tentative because the endowments included in the pilot study were neither a comprehensive set nor a random sample. On the contrary, the main purpose of the pilot project was to test and develop the coding format and therefore the waqfiyyat were selected to reflect a variety of regions, periods and sources. Nevertheless, the findings give an indication of certain trends which may be confirmed by analysis of larger and more representative groups of waqfiyyat.

SOURCES OF ENDOWMENT AND OTHER WAQF DOCUMENTS

Waqfs have been documented in various forms —full endowment deeds, summaries of waqfiyyat, indexes of court or administrative records, special surveys, and registers of current waqf accounts. These sources differ as to the proportion of all waqfs they represent, the point in time since the establishment of the waqfs, and the nature of the information included. Moreover, sources of waqf documentation must be evaluated not only according to the number of endowments included but as to the reason they are included.

Scholars who have utilized waqf documents are in agreement that no single source includes all endowments which were established during a particular period of time, not even the original court registers. Some sources are more comprehensive than others. The waqfs culled from the court registers of Jaffa and those in the Barkan-Ayverdi collection which were used in the pilot project are more representative than those taken from the works of Ali Mubarak or Kamil al-Ghazzi.

The date of documentation may be close to the date of the establishment of the endowment, the date of a special audit or current accounts, or the date when an issue arose in court. Audits, waqf accounts and court disputes reflect the actual situation of the endowments at the time of documentation. They do not, however, fully reflect the foundation of waqfs over time, nor changes in en-

dowments since their foundation. Thus, the survey of the waqfs of Istanbul in 1546 includes endowments established since 1456, but some of the waqfs founded during this period were destroyed or their stipulations changed. On the other hand, the original waqfiyyat comprise the founders' intentions and the reality at the time of foundation. It is valuable to trace the fate of waqfs over time but this is only feasible for discrete cases, using various sources, and primarily for larger, more prominent endowments.

Waqf accounts and surveys contain detailed economic data, but also include valuable information on founders, beneficiaries, administrators and sometimes conditions and stipulations. Apparently, these sources cannot be used to extract the essence of the original waqfiyya. Court cases deal with disputes over the administration and among beneficiaries as well as transactions concerning properties. Sometimes, the text of the waqfiyya or its main elements may be reproduced in the court proceedings. Full waqfiyyat either in their original form or in extensive summaries have their limitations, but they include a wealth of information on a wide variety of subjects as has been demonstrated. They are a particularly important source for information on the administration and consequently the control of waqfs over time.

The issue of the qualitative difference between waqfs derived from different sources has been raised as a result of a quantitative comparison of waqfs appearing in the records of the waqf administration of Aleppo and those listed in the court registers[14]. It is important to recognize that various sources may tend to include waqfs of a certain type —larger endowments, those founded by rulers and government officials, or particularly problematic waqfs— and as a result, different answers to fundamental questions may be a function of the use of different sources. Quantitative analysis rests not only on large numbers but on the quality of the source and the extent to which it is representative. It is axiomatic that the perfect source for historical research will never be found, but rather that a variety of sources complement each other.

14 Roded, «The Waqf in Ottoman Aleppo».

CONCLUSION

The pilot project of waqfiyyat prompted us to address many fundamental questions on Islamic society as reflected in the waqf, forced us to grapple with methodological problems of broad relevance to the use of quantitative analysis for the study of Middle Eastern history in general, and produced findings which are of some substantive as well as methodological value. The tentative findings embody challenges and questions for further research.

Subsequent to our initial efforts, the continuing discrete research of the team members as well as contacts with scholars from abroad[15] enriched our experience, heightened our awareness of the problems involved, and reinforced our appreciation of the potential value of quantitative analysis of waqf documents. A number of area-specific studies of this type have already appeared or are in process. The growing body of work on the Muslim waqf has increased our knowledge on various aspects of this central Islamic institution and on a wide variety of social, economic and political issues. The need for an analytic and methodological framework for comparisons over time and between different regions has been underscored.

APPENDIX A : *Administrator Codes*

1st digit : Major Type

0 Individual - Sex not Specified
1 Male Individual
2 Female Individual
3 Office-holder (ex officio)
4 Waqf Institution
5 Arshad
6 Court determines
7 Administrator of other waqf
8 Ruler appoints
9 Unspecified

15 An earlier version of this article was presented and discussed at the International Seminer on Social and Economic Aspects of the Muslim Waqf held in Jerusalem, 24-28 June 1979. A follow-up workshop with some participants from abroad was convened in February, 1981.

2nd and 3rd digits : Specific Type

10 Undefined Family Member	20 Freed Slave	30 Undefined Alim
11 Son	21 Descendants of Freed Slave	31 Qadi
12 Oldest Son	22 Mamluk	32 Mufti
13 Agnatic Desc.	23 Descendants of Non-relative	33 Shaykh of Riwaq
14 Descendants	24 Descendants of unidentified	34 Head of Zawiya
15 Daughter		35 Imam
16 Spouse		36 Muadhdhin
17 Male Desc.		
19 Other Family Member		
		60 Arshad of community
40 Christion Cleric		
41 Abbot	51 Central Institution of Empire	61 Arshad of region
	52 Central Inst of Country or Province	62 Guild Shaykh
	53 Inst of City	63 Naqib al-Ashraf
	54 Adm of Haramayn	64 «Notable»
	55 Adm of Major Mosque	
49 Other Religious	59 Other Institution	69 Other Socio-Eco
71 Askeri		91 Lawyer
72 Ruler		
79 Other Pol-Mil		99 Other Misc

APPENDIX B : *Sample Pages from Coding Sheet*

Administrator

If the founder is the administrator in his lifetime, code this information on the top of the nex page. List each administrator in the space provided on the right; code for type according to the coding table. If the type falls into one of the «other»

-,
(1)

categories, write out in the coding spaces provided in Latin letters as briefly and clearly as possible what type of administrator it is. Code remaining information; and assign a priority number according to sequence. (Where more than one administrator serves at the same time, they will be given the same priority number). The *last administrator* will be coded 0.

-, -, -, Administrator Type
(2-4)

-, -, -, -, -, -, -, -, -, -, «Other»
(5-14)

-, -, Religious Community (codes on p. 1)
(15-16)

-, -, -, Location
(17-19)

-, Is administrator a beneficiary? 1 Yes 2 No 9 Unk
(20)

-, Priority Number
(21)

-, -, -, Administrator Type
(22-24)

-, -, -, -, -, -, -, -, -, -, «Other»
(25-34)

-, -, Religious Community
(35-36)

-, -, -, Location
(37-39)

-, Is administrator a beneficiary? 1 Yes 2 No 9 Unk
(40)

-, Priority Number
(41)

-, (1)

-, (2) Is founder administrator in his lifetime?

-, (3) Are there specific provisions for clerks, etc. for waqf management?

-, (4) Must they be family members?

-, (5) Description of administrator's duties and responsibilities :

-, (6) Specification of administrator's fees :
1 10%
2 Less than 10%
3 More than 10%
4 Specific sum (specify) :
9 Not Specified

-, (7) Stipulation that administrator must report to a higher authority :

-, (8) Provision for selection of Arshad :

-, (9) Other instructions or conditions regarding administration :

Indicate below the use of terminology :

-, (10) Mutawalli

-, (11) Nazir

-, (12) Wakil

-, (13) Qayyim

-, (14) Other