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QUANTITATIVE METHODS IN INTELLECTUAL HISTORY

Mohamed Amine Brahim and Tristan Leperlier

Quantitative methods enable a departure from the persistent, often unconscious view of intellectuals as relatively isolated and even socially unattached. One of the functions of statistics is in fact to generalize observations made at an individual level to a macrosocial level, thus underscoring the profoundly social nature of intellectual vocations. Statistics offer a means to move beyond individual contingencies and toward a more relational or structural view of the intellectual world. They serve to identify the various groups that constitute this social space in the short and the long term. The role of statistics is therefore not to replace qualitative methods or situated texts, but to inform intellectual practice at a different level.

Especially since the 1990s, quantitative methods have been imported into the study of intellectual life and production from different subdisciplines. In France, the adoption of statistical approaches followed from a dialogue between historians and sociologists. A prosopographical method was developed in the social history of elites, especially by Christophe Charle, and has been used by sociologists of intellectuals working in the wake of Pierre Bourdieu and his field theory. One of the tools used to explore prosopographical data is Multiple Correspondence Analysis (henceforth MCA). MCA is well adapted to field theory, which argues that intellectual stances are partly expressions of the position of intellectuals within a relational social space. To give an example of the use and value of MCA, in this chapter, we will use the Algerian literary field during the civil war of the 1990s. Meanwhile, in the United States, quantitative methods such as regression analysis were imported from economics, whereas network analysis is used within an interactionist theoretical framework. To illustrate the uses of this method for the study of thinkers, we will present Richard Posner's survey of US public intellectuals and Randall Collins's inquiry on Greek philosophers.

French Prosopography and Multiple Correspondence Analysis

To echo the classic definition proposed by the British historian Lawrence Stone, "'prosopography' is the investigation of the common background characteristics of a group of actors in history by means of a collective study of their lives."¹ The need for extensive biographical data explains why prosopography has generally been used to study elites. Theodor Mommsen made the first attempt to use prosopographical methods in his *Prosopographia Imperii Romani*, which was published in 1897. According to Charle, the revival of this method since the 1980s can be explained on the one hand by the decline of macroscopic analyses based on the Marxist framework of "class" and, on the other, by the fact that prosopography can overcome some of the limits of the classical microscopic and individualized approach to biography.² "French prosopography," after Bourdieu, has largely focused on studying intellectuals.³ First, as Koenraad Verboven, Myriam Carlier, and Jan Dumolyn put it, "by taking a collective approach to human action, exceptional individuals are filtered out, making it easier to distinguish patterns and to generalize. Also, anomalies and incidental variants become visible."⁴ Second, while biographies are often based on ego-documents (particularly important in the case of intellectuals) and tend to be hagiographic, prosopography requires a larger set of documentation, including administrative documentation (in the police or court systems, for example), as well as, if possible, interviews with the actors, their relatives, or witnesses.

The prosopographical method is particularly suited for intellectuals, given the many available sources about them. The prosopographical method can be divided into three steps: defining a population, creating a database, and analyzing the data.

Defining a Population

According to Verboven, Carlier, and Dumolyn, two "schools" can be distinguished in prosopographical research: an exhaustive one, "studying elites—consisting of relatively small groups of well documented individuals" and one, mostly through a sample, "studying large groups of mostly anonymous or poorly documented individuals."⁵ Pierre Bourdieu's *Homo Academicus* is a good example of the first case. A survey on power in faculties of humanities and social sciences in 1967, it is mostly based on a prosopographical study of 405 professors in French universities. The second case is offered by Robert Merton, who used prosopography on a relatively small sample randomly selected from the *Dictionary of National Biography* in order to demonstrate a link between Puritanism and a positive attitude toward science.⁶

The statistical approach requires a very precise and homogeneous set of criteria to delimit the population under study. For one example, scientists are defined by Merton on the basis of a preexisting definition—the one used by the *Dictionary of National Biography*. The population can also be defined, as Bourdieu had done, by a single common property, such as their belonging to an institution (university, for instance). But researchers often define

intellectuals in terms of one of their activities—for instance, their involvement in an intellectual controversy, political commitment, or religious belief—rather than in terms of their professional belonging. For example, some intellectual activities are partially or completely non-institutionalized. As opposed to scholars, who are quite easily delimited by their belonging to a university, there is no straightforward definition of a “writer.” As a result, prosopographical research on an intellectual population can rarely be considered exhaustive—the group is either too large or too narrow, and it can include or exclude actors not usually thought (whether historically or currently) to belong to the target group.

Indeed, some categories are objects of struggle among the actors. Definitions do not come about matter-of-factly; each of them is the result of a long (and still ongoing) history of struggles. Moreover, the study of intellectuals requires that particular attention be paid to the construction of its object and to a critique of the sources, given that the sources used for the databases, produced themselves by intellectuals, also form part of the struggle to circumscribe the legitimate definition of a given intellectual activity. Etic categories (those used by the researcher) are in this sense also emic categories (used by the actors), and selfreflexivity is involved in the definition used. Thus, even the most institutionalized definition should be historicized (by referring, for example, to the controversies surrounding it) because adopting a definition of an activity or a profession is in itself exclusionary toward some of the actors. In line with the history of concepts (whether in *Begriffsgeschichte* or in more recent variants), the history and sociology of intellectuals must provide the history of the word, as signifier (the word itself) and signified (its meaning).

In *Naissance des “intellectuels,”* Christophe Charle recalls that the substantive “intellectual” was first used in France with a negative connotation. The meaning of the word changed from negative to positive during the Dreyfus Affair. Other terms that carried some of the meanings that the word “intellectual” came to designate around 1900 had previously been used. “*Homme de lettres*,” for instance, had come into use in the eighteenth century. During the nineteenth century, the official census, which constitutes a first statistical approach to the target population, changed its categories, thus delimiting future “intellectuals,” who would henceforth be found either under “*professions libérales*” or under “*journaliste-homme de lettres*.” Charle’s method is historical: “To break the endless circle of abstract or normative definitions of ‘intellectuals’..., the only consistent historical approach is to analyze the document that founded their public existence, the so-called manifesto of the ‘Intellectuals.’” The manifesto, published on February 1, 1898, aimed to support Émile Zola, who had denounced the great injustice of the Dreyfus case in his famous article, “*J’accuse*.” Charle’s analysis is based on a large set of pro- and anti-Dreyfus political petitions (between about 1,000 and 40,000 signatures each). His analysis covers the presentation of the petitions, and whether some types of information (such as name, profession, degree, and geographical origin) are given or not. This enables Charle to distinguish between two ways of regarding one’s own political role as an intellectual. First, as “intellectual,” i.e. using one’s recognition in the intellectual field (such as a university degree) to protest in favor of “Truth” and “Justice.” Second, as “*élite*,” i.e. reproducing traditional hierarchies in favor of institutions of order such as “Army” and “Nation.” “Intellectual” is then a (politically) contentious category among intellectuals. The information given in the petitions is also compared by Charle to existing data on university professors and writers: political stances can be partly understood as the expression of the relative positions of each actor within the academic or literary field.

The process of delimiting a population of intellectuals is often a sort of bricolage (tinkering) of the larger definitional consensus of the time. To offer a more detailed example, we turn to a 2018 inquiry by one of us (Tristan Leperlier) on Algerian writers during the Algerian civil war, which raised several questions.⁸ First, we confronted a chronological problem—determining the beginning and end of the civil war of the 1990s was and still is a controversial political issue, pointing to responsibilities for the beginning of the war and victories at the end. This was solved by choosing a broader time frame (1988–2003), which was also more appropriate for the literary field in that it enabled a better understanding of the crisis through an analysis of its premises and aftermath. Prosopography is, after all, a synchronic method. Significant writers who died at the beginning of the period were thus kept in the database alongside writers who lived through it. The formers continue to live, in a sense, as references for the living writers. 103

Second, the national frame (“Algeria”) was quite recent, and all the more complicated in a postcolonial context. Algeria had been part of France from 1830 to 1962, that is to say until only 30 years before the civil war. National identity was one of the issues at stake during the civil war. Does being an Algerian depend on the language used (Arabic/French/ Berber), on place of residence (living in Algeria/abroad), on ethnicity (Arab-Muslim/European)? Despite these tensions, a broad consensus on this issue, though challenged, did exist in the 1990s, according to which an Algerian was an Arab-Berber Muslim born in Algeria. Nonetheless, in order to take into account the identity struggles that were analyzed elsewhere, a number of representatives of the European and Beur (French of Algerian descent) minorities were included in the database. Third, what does it mean to be a writer? Does “*écrivain*” mean the same in Algeria and in France, and is “*kâtib*” its exact equivalent in Arabic? Should it include or not non-fiction authors? Indeed, in the postcolonial and multilingual contexts of Algeria, the definition of “writer” arose a controversy at the Algerian Writers’ Union that occurred at the beginning of the period. The most internationalized writers succeeded in imposing the narrower definition of literature against a looser one according

to which the official status of "writer" should be granted to those who had published the "equivalent" of a book, including journalistic or scholarly articles. In accepting the broader definition until then, the Union had been more in tune with the tradition of the *adīb* (close, for example, to the French eighteenth-century "Homme de lettres"), authors for whom non-fiction books were part of their "literary" activity. Adoption of the narrower definition by the Writers' Union had also reinforced the exclusion of oral poets in dialects of Arabic and of Berber. Alongside the statistics, this historical research is absolutely necessary. Also, an important issue of the period is the literary status of memoirs and testimonies. To reflect the larger consensus of what literature is in the Algerian literary field of the 1990s, we built a bibliographical database of about 2000 books of adult fiction and genres like memoirs and testimonies. In sum, the consensual definition at the time, chosen to delimit the population of "Algerian writers during the civil war," was an "Arab-Muslim person born in Algeria who published a book of fiction or memoir between 1988 and 2003:" but we included a number of representatives of these challenged definitions of "writer" in the selected population.

Constructing a database is a very slow process, full of bricolage, linked to the qualitative knowledge developed alongside the quantitative method ... and full of backtracking. Every step, every decision, has to be written into a specific file. The database on Algerian writers during the civil war was constructed with the help of a recent dictionary claiming to be comprehensive (Dictionnaire des écrivains algériens) even though it had no clear definition of what an "Algerian writer" was. Those who fit the consensual definition adopted for the project were the only ones to be selected. This first database comprised 488 writers, many of whom had only published one book, and very little information was available about them in the Dictionnaire, or even on the Internet. A second database was extracted from this first one; it was more selective (N=174 [+3 French or Beur writers = 177]) and focused on the core of the literary field, that is to say the most recognized writers, using as an indicator their presence (with an "anthology score") in 30 literary anthologies in different languages. Nonetheless, a few writers were included who did not match all the criteria but who were particularly important according to other writers. These included writers who did not publish during the period but were still important in the field (heads of literary institutions, for instance), writers who had published a lot but not reached the required 104 anthology score, as well as others. The qualitative survey (80 semi-structured interviews, two hours on average) also revealed that marginality in the literary field went hand in hand with marginal political stances in the field: most pro-Islamist writers were at its periphery.

Constructing the Variables

In the database spreadsheet, individuals were entered horizontally and variables vertically (in columns).⁹ A (biographical) questionnaire consists of variables, and the answers are "modalities." The questionnaire leads to coding the qualitative information for the purpose of its simplification and standardization. The coding is heuristic, which makes it possible to go from the descriptive (regular texts) to the interpretive, and to generate new tools for the qualitative survey. Commonly used spreadsheet software (such as Calc or Excel), quite easy to master, allows a researcher to fill in columns with text. The first columns are to be filled with regular text, also providing the source of the information. The database can then also be used as a record of the qualitative survey. The principle is that no information must be deleted from the database. A new column is to be created for each coding operation, with the same name (e.g. "Place of birth," then "Place of birth coded 1," then "Place of birth coded 2," etc.). Useless columns are to be masked, not deleted. A graspable variable is usually expected to include two to six modalities. Several tests are often necessary for this. The database is then progressively "tidied up" such that every coded variable presents a uniform structure. Modalities such as "No," "Not relevant," and "No information" are to be distinguished.

Even though some variables (such as the sociodemographic ones) can be found in most of the questionnaires, most of them are conceived and built according to the object, the sources available, and above all the research question. As our research question was to show how intellectuals reacted during a civil war, we fashioned political variables, distinguishing between stances and public visibility (single signed published position > petition > private convictions). As shown by political-science surveys, sociodemographic variables such as gender, age, place of birth/residence, social background, and diplomas influence political orientation. Construction of the modalities needs to take account of the specificities of the population under study (for instance, a database on French intellectuals will have to distinguish those who attended elite public graduate schools such as the *École normale supérieure* from those who went to regular public universities, the former providing higher symbolic capital).¹⁰ Places of birth and residence can be classified according to their relative proximity to intellectual/economic/political power. Field theory further asserts a correlation between position-taking and the position occupied by intellectuals in the field. Intellectuals' stances cannot be solely explained by general sociodemographic variables. Instead, variables specific to their field of activity need to be included. The issue is thereafter to objectify these activities. We adopted three ways of objectifying the positions of Algerian writers in the Algerian literary field. First, their modes of presence in the field: major literary genre, language used, type of Algerian publisher, etc. Second, their intensity of presence in the field: number of publications, age of first

publication, literary group memberships, etc. Third, their literary consecration: type of foreign publisher, anthology score, score of literary prizes, score of translations, etc.

Again, coding these variables involved a long and heuristic method of interpreting. For example, how could a value, such as literary recognition, be quantified? The anthology score could not simply be the total number of citations of a writer because not all anthologies Quantitative Methods in Intellectual History 105 were equally valued (and even read) in this bilingual field. Also, as a consequence of their greater internationalization, many more anthologies were dedicated to French-language writers published in Algeria and abroad in French, English, and German, than to those publishing in Arabic. In order not to reinforce the weight of the international factor in the field, already strong in the "type of foreign publisher" variable, more weight was given to Arabic anthologies; this enabled an equivalent average score of presence in anthologies for French-language and Arabic writers.

Analysis

When the variables have been tidied up, three operations are available, either numerical or graphic. The first is a simple table, providing the absolute number or relative number (percentage) of each modality. The second is a cross-tabulation table, aimed at finding (cor)relations between different variables. In the following example (Table 6.1), the question is: What literary language is the most prone to be translated into others? Arabic/French refers to the language in which writers generally write. "Translated +" means one translation (usually into French or Arabic).

Table 6.1 Translations According to the Language Used

	<i>Translated -</i>	<i>Translated +</i>	<i>Translated ++</i>	<i>Total</i>
Arabic	50/63%	22/28%	7/9%	79/100%
French	59/63%	15/16%	20/21%	94/100%
Overall Total	109/63%	37/21%	27/16%	173/100%

The same figures can be read differently depending on the type of reading. A distinction can be made between a majority reading, which aims to rank modalities, and a differential reading, which compares the modality figures with their average. The differential reading makes it possible to say that one out of five French-language writers (21%) has been translated into at least two languages ("Translated ++"), whereas the same is true for one out of ten Arabic writers (9%). We can also say that French-language writers are over-represented among the most translated writers (21%, compared to 16% on average). Thus, writing in French seems to guarantee twice the chance of being translated than writing in Arabic. Correlation of the two facts does not, however, mean causation between them. As a majority reading shows, the majority of French-language writers (almost two-thirds, 63%) have never been translated. Additionally, the correlation might hide another variable that would be of greater explanatory value. French-language writers are also most widely published abroad, especially in France, where publishers are part of an international network and where one finds more opportunities for translation funding.

In order to test multi-correlations, we propose using a multivariate analysis, which displays the interrelations among multiple variables. Scholars who use this method consider it more adequate for analyzing the social world than a single-causality method. We will focus here on MCA, which was used by Bourdieu in *Homo Academicus* and has also been used in studies on intellectuals using field theory.¹¹ MCA is a geometric representation of data, displaying the relationships among individuals in terms of the modalities they share, and of the modalities in terms of the individuals they share. The position of individuals and modalities on the graph measures their distance from the central point, which indicates "indifference": 106 modalities shared by most individuals gather at the center of the graph, whereas modalities that strongly exclude one another are spatially distant. For example, Algerian writers are contrasted more on the basis of what they publish (novel/poetry), than to their social background (cultural/economic capital) (Figure 6.2). MCA has an affinity with field theory,¹⁰⁷ which defines the structure of the field as the unequal distribution of properties (such as economic, cultural, social, and/or symbolic capital) in a social space. This unequal distribution also underpins the specific struggles and conflicts that give the field its dynamics.

Figure 6.1 represents the cloud of individuals, and as such provides a geometrical representation of the Algerian literary field during the civil war. Figure 6.2 shows a simplified representation of the cloud of modalities: 26 active modalities (out of 63), and three supplementary modalities. Contrary to active modalities, supplementary modalities do not contribute to the construction of the graph. This distinction allows us to test whether the projected supplementary modalities are superimposed on the active ones, and thus to make a hypothesis about the possible determination of the supplementary modalities by the active ones.

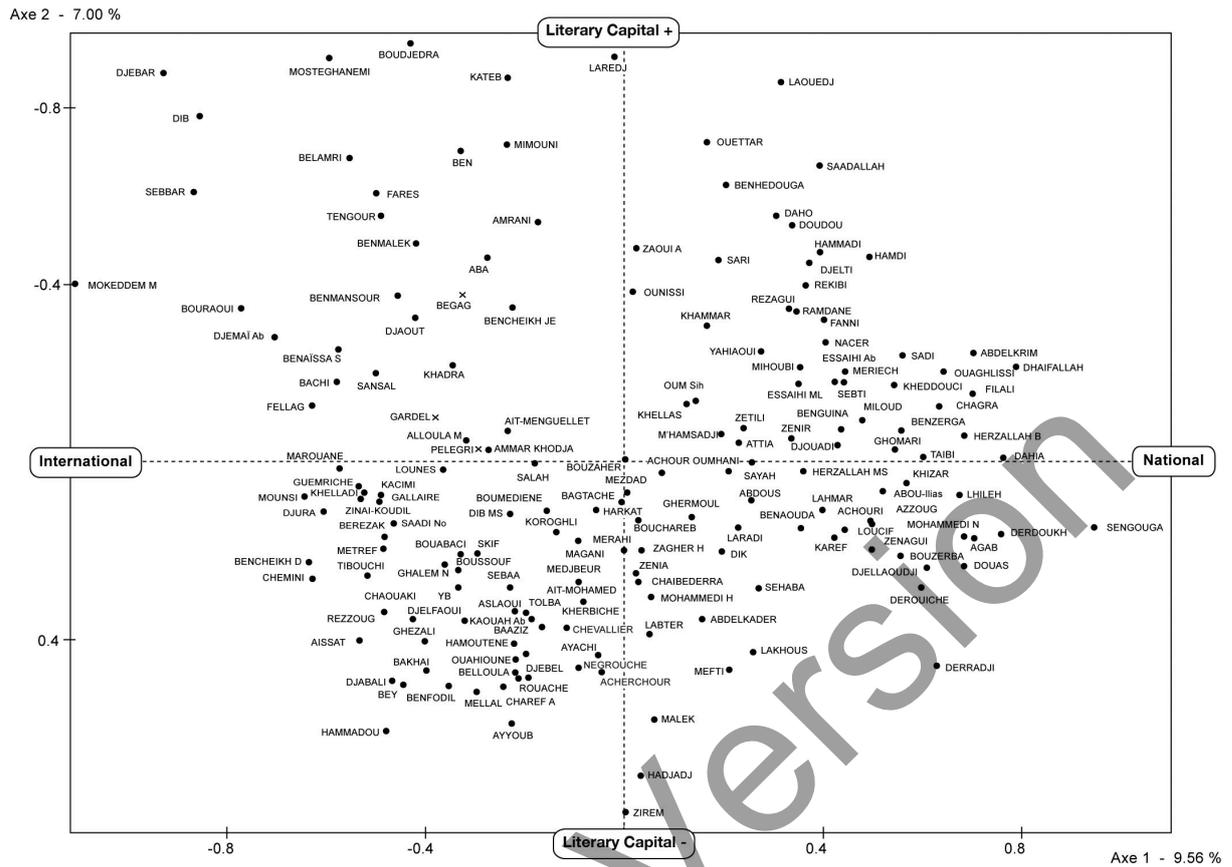


Figure 6.1 The Algerian literary field in the 1990s: Cloud of individuals.

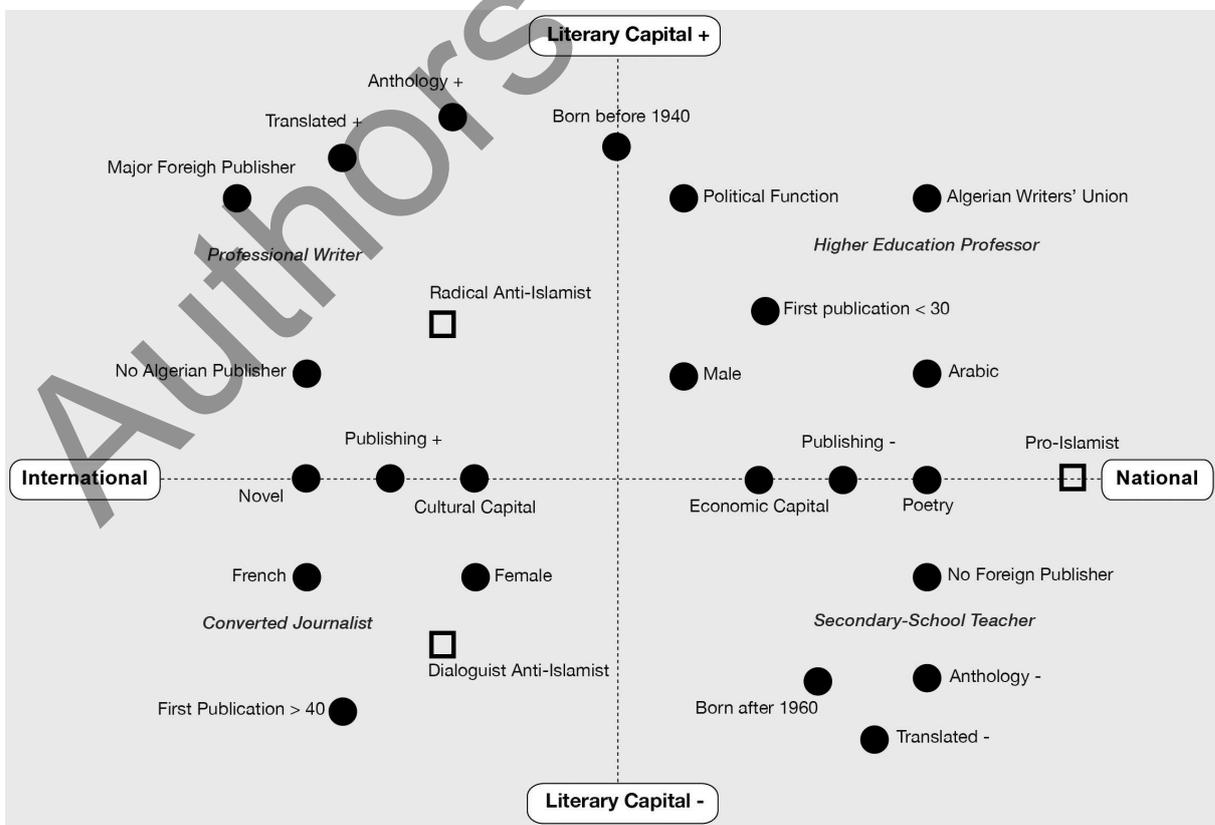


Figure 6.2 Cloud of modalities.

There are as many axes as the number of variables minus 1, but usually one interprets the first two or three axes. The first factor (horizontal axis) contrasts according to us the national to the international poles of the field, while the second (vertical axis) marks the amount of literary capital held by the writers. For instance, according to these first two axes of the MCA, there is a high probability of being extensively translated, cited in many anthologies, and published in major foreign publishing houses (upper-left-hand quarter). For instance, Waciny Laredj, at the top center of the graph of individuals, holds a great amount of literary capital that is balanced between national and international; among other properties, he belongs to national literary institutions such as the Algerian Writers' Union and publishes in a major foreign publishing house.

The cloud of modalities (Figure 6.2) provides the distribution of properties underpinning the cloud of individuals (Figure 6.1). Literary and sociodemographic variables are here active and political modalities are projected as supplementary. Thus, the cloud of modalities displays the positions occupied by individuals in the literary field, while the political modalities are thought of as the individuals' position-taking. The question here was to see to what extent these political positions were related to the writers' positions in the literary field (a correlation shown in the French contexts of the Dreyfus Affair and of the German occupation).¹² It turns out that they appear to be clearly related: pro-Islamist writers are those positioned at the extremity of the national pole of the field, to which anti-Islamist writers, at the international pole, are politically opposed depending on their volume of literary capital (radical/dialogists¹³).

This was not the anticipated result. MCA is a heuristic tool in the sense that it helps us to visualize the structure of the field. But evidence of correlations, hence of causality, is found solely through cross-tabulations and regressions (see below), as well as through the qualitative survey. For instance, what does it mean that pro- and anti-Islamists are opposed according to their type of literary capital? Pro-Islamist writers, who are all professors, think of literature as a vehicle for educating the nation and conveying national values that are simultaneously political, linguistic, moral, and religious. At the opposite, international pole, writers consider that literature must be free of any non-literary injunction. Additionally, pro-Islamists are recognized only at the national pole, but in 1989, collapse of the single-party regime entailed the loss of their monopoly over national institutions, which were taken over, precisely, by international writers. In this period of political crisis, supporting the Islamists was not just about political conviction, but also about literary issues. The Islamist party would rid the writers the national pole of the a-moral and a-religious internationally recognized writers from the national institutions of literature. Finally, this 108 political opposition is also related to the reception of anti-Islamist writers abroad, especially in France, where they were highly valued.

As we can see, prosopography and MCA (and generally speaking, statistical approaches) do not make sense in and of themselves, and should be anchored in larger, and especially qualitative, surveys. As Verboven et al. put it, "Prosopography allows us to read between the lines of social and political structures and organizations, but there is no point trying to read between the lines if you do not know what is on the lines."¹⁴ There is also the risk of falling into the trap of "circular reasoning," that is to say discovering what was originally entered in the study as a hypothesis. MCA only represents what the research has chosen as variables and modalities. Correlation between positions in the literary field and political stances is a hypothesis, which happened to be relevant, statistically and in the qualitative survey. But it reveals only one hidden though particular side of the political stances, and should not hide broader explanations (historical events, political socializations, socioeconomic conditions, etc.).¹⁵

The Sociology of Intellectuals in the United States

The sociology of intellectuals or of ideas in the United States, most of which is qualitative, evolved in a distinctly different way than in France. There, the subfield was mainly developed in the late 1980s around issues related to the notion of "public intellectuals." The publication in 1987 of Russell Jacoby's *The Last Intellectuals* triggered several debates.¹⁶ Jacoby's main thesis in the book consists of underscoring that contemporary intellectuals had less autonomy than their predecessors to intervene in the public space. Jacoby explained this partly by the rise of Marxism and the New Left in the universities.¹⁷ In his view, this political ideology had served to justify a process of specialization and professionalization in the academic world. He argued that this dynamic reduced the independence of academics, and with it the possibility of becoming public figures. A series of sociological publications and articles would then try to respond to this declinist observation.¹⁸

English-speaking researchers were also significantly influenced by the sociology of scientific knowledge. This current included some researchers who were critical of Merton inspired sociology.¹⁹ According to them, Merton generally privileged studying social actors at the expense of the cognitive phenomena connected to the production of ideas.²⁰ Contesting Merton's propensity to grant a privileged epistemological status to the discourse of scientists, sociologists of scientific knowledge focused on the factors influencing the sets of beliefs.²¹ According to them, all knowledge is intrinsically related to situated material, cultural, or political conditions. Several of the researchers affiliated with this current would go beyond the scientific field and reflect upon intellectual production in general.²²

These academic debates had a significant influence on the statistical approaches used in the sociology of US intellectuals. As an example, we will present two methods used in this subfield, namely regression and network analysis.

Regression

Regression comprises a set of statistical methods used to analyze relationships that can connect different variables. This approach can be modeled as follows: variable Y is the one that needs to be explained in terms of one or several explicative variables X_1, \dots, X_p Quantitative Methods in Intellectual History 109 (covariables).²³ The term "regression" then designates the elements of the conditional distribution of the random variable Y along the vector of the random variable X ($X_1, X_2, X_3 \dots X_p$). This statistical operation thus enables estimating the links among the variables emerging from a set of values. Regression is governed by the *ceteris paribus* (all other things being equal) principle; other variables may be modified by the relationship under study and affect the variables to be explained, but these effects are considered negligible or too complicated to estimate.²⁴ This entails that in regression, all other variables than those under study are considered unchanged.

The word "regression" was used for the first time in the nineteenth century by the British anthropologist, geographer, and statistician Francis Galton, the founder of eugenics, to describe biological heredity phenomena related to size.²⁵ It would be a few years more before this notion would be used in mathematics, after which regression was progressively generalized as a statistical method in various scientific disciplines.²⁶

An illustrative reference for the use of regression in the sociology of intellectuals is Richard Posner's *Public Intellectuals: A Study of Decline*.²⁷ Posner's research was motivated by one major question: How can the loss of US intellectuals' influence in the public debate be explained? To answer this question, the author employed the "market" concept. According to Posner, the public intellectual, relying on his/her intellectual resources, intervenes to educate the general public on current affairs.²⁸ The interventions of intellectuals, along with their writings, thus constitute in his view a coherent space governed by the principle of supply and demand. Given the specific nature of the goods supplied by intellectuals, the market remains an autonomous entity; it cannot be confused with other spaces of cultural production. According to him, the generating principle of the intellectual market offers responses to most demands; the more an intellectual meets expectation, the greater his/her recognition.²⁹ Posner undertook his study based on a population of US intellectuals.³⁰ His focus was not on the sociological attributes of market actors but rather on the circulation of their ideas and opinions in the public space. He, therefore, attempted to measure the visibility of intellectuals based on various indicators. This was the framework in which he would employ regression. The aim was to grasp the factors that might diminish or increase the value of intellectuals within the US market.

As an example, we can take a multiple regression analysis (Table 6.2) aimed at revealing the main factors influencing the media visibility of intellectuals. The dependent variable (Y) is the number of media mentions. It is constituted by data drawn from three Lexis-Nexis databases—Major Newspapers, Magazine Stories (Combined), and Transcripts (of television and radio shows). The independent variables are social and ethnic categories (Black, Dead, Female, Foreigner, Government service job, Jewish, Right-wing) and the number of scholarly citations. Based on the t-statistic, Posner targets the variables with the strongest correlations. It should be noted that Posner calculated such correlations for the top 50 intellectuals most covered by the media within the population as a whole.

The t-statistic is the ratio of the departure of the estimated value of a parameter from its hypothesized value to its standard error. It is used in hypothesis testing. The t-statistic must be at least 1.96 (positive or negative) to be statistically significant at the 5% level, and somewhat higher when the sample size is below 120, as it is in a number of the regressions.

R_2 is the percentage of the variance in the observations that is accounted for by the regression equation. The adjusted R_2 reduces the R_2 to reflect the fact that as more and more independent variables are added, the amount of variance accounted for by the equation Mohamed Amine Brahim and Tristan Leperlier 110 will generally increase (and will never decrease) regardless of the explanatory value of those variables: at the limit, if there were as many regressors as observations, R_2 would equal 1.

The F statistic is a measure of whether the equation as a whole has significant explanatory power; stated differently, it is a test of the joint significance of the independent variables. All the regressions "pass" the F test at the 3% or better significance level, as shown in the "Prob." (for "Probability") row of each table.

An analysis of Table 6.2 shows that the variables with the most significant t-statistic are those related to government service and scholarly citations. Government service has a positive effect on media mentions; it seems that having occupied political posts has a positive effect on media visibility. This type of employment excludes "internships, clerkships, part-time advisory roles, non-career military service, and other limited stints."³² In contrast, academic notoriety (number of citations in scientific journals) turns out to be negatively correlated with media presence.

On these grounds, Posner concluded that academic work is deeply incompatible with the public mission of intellectuals and does not necessarily contribute high value to the US ideas market. It appears that the media do not select intellectuals based on their academic production. Profiles sought out by the media would be more than those capable of popularizing academic work to the general public. However, political connections strengthen media notoriety. Posner used the example of Henry Kissinger to illustrate this sort of case.³³ The fact that Kissinger

had held the position of national security adviser to the US government enabled him to be a public figure even after his term was over. Political involvement is therefore a fundamental factor for bolstering notoriety.

Regression allowed Posner to identify the various factors involved in intellectuals' loss of influence in public debate by justifying their absence as a consequence of the fact that their intellectual production is too sophisticated. The market would be flooded with goods of a lesser quality as a result of the absence of control over public interventions.³⁴ Intellectuals with academic training cannot impose their discourse in a saturated market.

Table 6.2 Regression of Media Mentions of Academic Public Intellectuals³¹

Independent variable	(a) Top 50		(b) All	
	Coefficient	t-statistic	Coefficient	t-statistic
Black	-217.63	-0.133	90.77	0.279
Dead	24.30	0.021	-259.89	-1.523
Female	-957.08	-0.863	21.21	0.088
Foreign	-385.54	-0.318	187.17	0.793
Govt.	2369.06	2.763	1081.51	5.422
Jewish	1311.66	1.461	65.22	0.427
Right-leaner	121.18	0.160	134.10	0.082
Scholarly citations	-0.61	-2.050	0.06	1.100
Constant	2334.42	2.243	391.50	2.516
R ²	.34		R ² .10	
Adj. R ²	.21		Adj. R ² .08	
F	2.49		F 4.31	
Prob. F	.0282		Prob. F .0001	
N	47		N 326	

¹¹¹ This approach can be criticized in market terms—intellectual productions do not so much respond to demand, instead, they rather produce it, which does not do away with the finding that the most sophisticated productions have a much harder time reaching the general public. One might also object that this approach does not adequately consider the cultural brokers who preselect the goods that they distribute according to criteria that can vary: economic profit seeking, political stakes, or cultural stakes.

Network Analysis

Network analysis designates a series of methods and concepts founded on graph theory and used to study relational phenomena.³⁵ It produces graphic representations of symmetrical or asymmetrical relationships among discrete objects. The resulting modelings are constituted by data nodes and links.³⁶ In sociology, this method has been used to study social networks. Here, the nodes usually represent the actors in the network, or else institutions, publications, or cited names; the links constitute the interactions or relationships among the nodes.

Network analysis draws its inspiration from the founding fathers of sociology. Many authors such as Georg Simmel, Émile Durkheim, and Célestin Bouglé had underscored the importance of connections among social actors.³⁷ The first systematic network analysis, however, did not appear until the 1930s. The Romanian-born American psychiatrist and psychologist Jacob Levy Moreno established the foundations of sociometry, by laying the groundwork for this statistical method in his work *Who Shall Survive?*³⁸ This was the outcome of the research he conducted on sex workers in Vienna (Austria): Moreno's main goal was to study the interpersonal relationships in this social group as well as the affinities and repulsions that characterized them. To illustrate his conclusions, he produced graphs of networks representing all the relationships among the actors constituting the study population. It was not until the 1950s that sociologists began to use the network analysis method. One of the most significant researches of this period was conducted by the Canadian sociologist Elisabeth Bott. In her work *Family and Social Networks*, she posited that the division of labor in housework between husband and wife varies depending on the density of the family's social network.³⁹ Based on a study of 20 working-class families in London, she concluded that gender-based segregation tends to be higher in social networks where the members are strongly connected. Nowadays, network analysis is applied to several research fields (sociology of the elites, sociology of the media, etc.).

The network concept may have thus far been used only metaphorically in intellectual history, but network analysis provided an interesting tool to explore quantitative data about a large number of individuals, institutions, references, or texts.⁴⁰ Its use was developed in the sociology of intellectuals. Randall Collins conducted one of the pioneering studies in this domain, *The Sociology of Philosophies: A Global Theory of Intellectual Change*.⁴¹ Drawing his inspiration from interactionist theory, Collins used network graphs to illustrate his results.⁴²

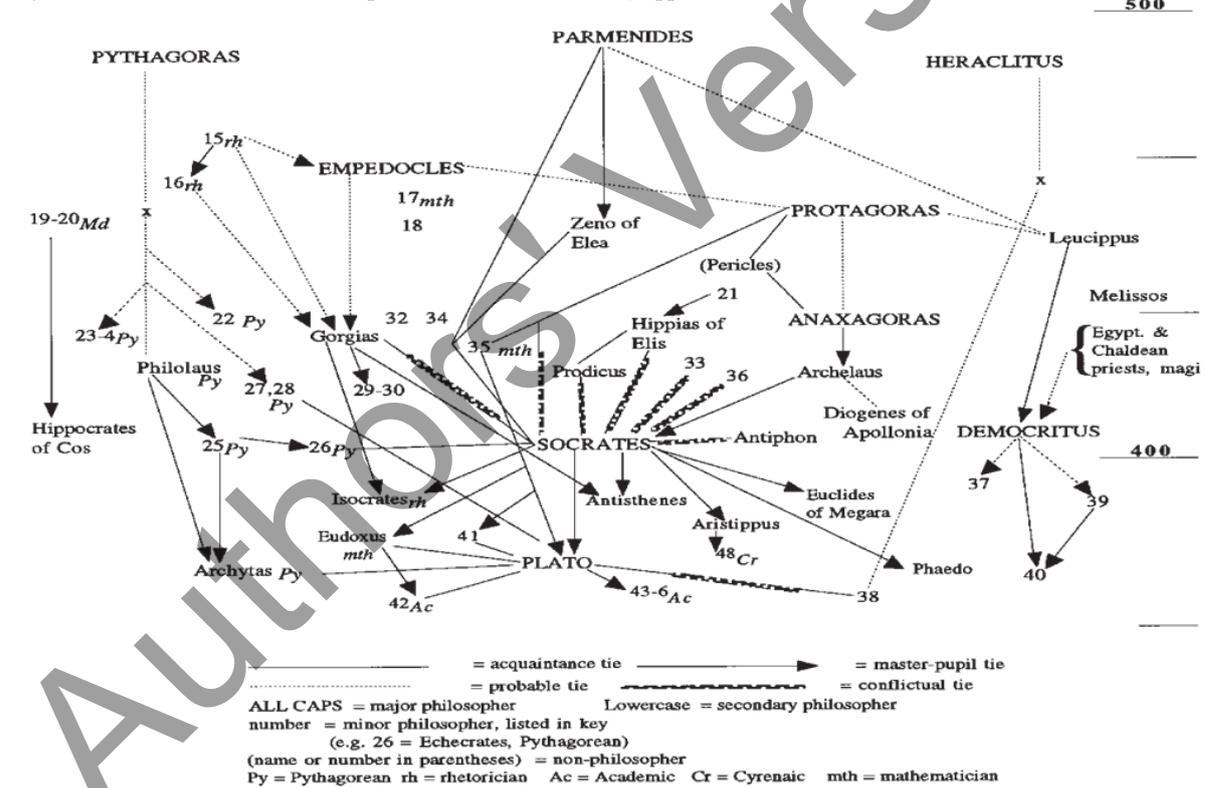
The work is both sociology of philosophical production (Eastern and Western) and sociology of intellectual creativity. Collins's main object of study was the development and the patterns of networks of thinkers throughout history. According to him, intellectuals produce decontextualized ideas that cannot be reduced to their social class

origin; they constitute an entirely autonomous group. Here, the intellectual world is moved mainly by ideas, which are "charged symbols" and act as magnetic poles.⁴³ They are part of the construction of groups or schools of thought. The importance of ideas derives from the fact that they are at the core of "ritual interactions" that strengthen the cohesion of intellectual groups.⁴⁴ In Collins's view, such solidarity mechanisms explain the social nature of the world of ideas (conferences, book launches, seminars). Ritual interactions are meetings charged with an "emotional energy" generated by a feeling of belonging to the group.⁴⁵ These ritual interactions make it possible to identify the extended structure of the interdependencies structuring intellectual life.

Collins used network analysis to illustrate his explanatory model. To constitute his population, he relied on reference material in the history of philosophy. Based on these sources, he classified the various thinkers of a historical period into three categories: major references, found in all the sources being used; secondary references, mentioned in a few of the sources; and minor references, rarely mentioned. Applying these criteria, Collins finds for Ancient Greece 28 major and 68 secondary philosophers over 1,200 years, averaging 0.8 and 1.9, respectively, and 237 minor philosophers.⁴⁶ As an example, Figure 6.3 illustrates approximately 100 years (from 500 to 400 BC) within the history of Greek philosophy. The names of the major philosophers are written in all caps, those of the secondary ones in lowercase. Minor philosophers, because of their great quantity, are indicated by their numbers. The links show the types of relationships maintained among the thinkers: arrows designate a master-pupil tie, lines designate acquaintances, dotted lines probable ties, and curvy lines conflictual ties.

For Collins, network analysis allows the reconstitution of the interactions that enabled these thinkers' posterity. The method makes it possible to illustrate the relationship between the historical figures of philosophy and the disciples perpetuating their teachings.

Figure 6.3 Network of Greek Philosophers from Socrates to Chrysippus.⁴⁷ Quantitative Methods in Intellectual History 500



113 The vertical axis of the network reveals the chains of the historical transmission of thought; the horizontal one unveils the constituent coalitions and oppositions in intellectual life. The more a thinker is consecrated, the more numerous the links to or from him. This sociology of philosophy tends to bring forth a causal explanation of intellectual dynamics; the production of ideas is expressed in the proliferation of networks. Taken individually, a philosopher is an uprooted abstraction of the social and historical mediations supporting him. Being part of the networks is the condition for all intellectual creativity. The emotional energy following from the interactions provides the individual with enthusiasm, confidence, and motivation.⁴⁸ Collins thus perceived being anchored to a community as a constituent of intellectual life.

Conclusion

For the convenience of this contribution, we have underscored the differences among the methods. As we mentioned, however, quantitative methods for the study of intellectuals are rarely used on their own; a qualitative analysis is also conducted to make sense of the statistics. Moreover, these methods can prove complementary. Regression has an explanatory value, whereas MCA is descriptive and only showing correlations. Nonetheless, MCA enables us to connect multiple variables more synthetically. Network analysis and MCA have been used in different theoretical perspectives, but can also be used for comparative purposes: scholars adopting the field perspective have increasingly used it outside interactionist assumptions.⁴⁹ The idea is therefore not to uphold an overarching point of view that would systematically contradict the other approaches, but simply to provide, with the help of statistics, specific analysis tools.

A major reason to use statistical methods is that they offer a scale of macrosociological analysis. MCA, regression, and/or network analysis make it possible to bring out the general trends organizing the intellectual world. They go further than generalities about a biographical or social "context" and facilitate an understanding of the social determinants that are part of the making of an intellectual vocation. It is thus that statistical methods are included in a more general reflexive approach. They can contribute to revealing the power relationships that characterize cultural production spaces, the distribution of the capital underpinning position-taking, or the structure of sociability networks. Moreover, by objectifying intellectual practices, they enable the researcher to also objectify their position (the MCA in Bourdieu's *Homo Academicus* includes its author). This objectification can only happen through a reflexivity effort aimed at knowing one's assumptions. As Bourdieu put it, a researcher taking himself "as an object, uses [their] own weapons to understand and check [themselves]."⁵⁰ In this regard, the contribution of statistics is nothing but beneficial to improved knowledge of the world of meaning in which intellectuals, as well as those who study them, are immersed.

Notes

- 1 Lawrence Stone, "Prosopography," *Daedalus* 100, no. 1 (1971), 46–79.
- 2 Christophe Charle, "Prosopography (Collective Biography)," in James Wright, ed. *International Encyclopedia of the Social and Behavioral Sciences*, Vol. 18 (Oxford: Elsevier, 2001), 12236–12241.
- 3 David Broady, "French Prosopography: Definition and Suggested Readings," *Poetics* 30, no. 5–6 (2002), 381–385; Pierre Bourdieu, *Homo Academicus*, trans. Peter Collier (Cambridge: Polity Press, 1988). For examples of studies of intellectuals: Victor Kadary, "Normaliens et autres 114 enseignants à la Belle Époque. Note sur l'origine sociale et la réussite dans une profession intellectuelle," *Revue Française de Sociologie* 13, no. 1 (1972), 35–58; Christophe Charle, *La République des universitaires: 1870–1940* (Paris: Le Seuil, 1994); Gisèle Sapiro, *The French Writers' War, 1940–1953*, trans. Vanessa Doriott Anderson and Dorrit Cohn (Duke: Duke University Press, 2014); Claire Ducournau, *La Fabrique des classiques africains: .crivains d'Afrique subsaharienne francophone (1960–2012)* (Paris: CNRS éditions, 2017); Frédéric Lebaron, "Les élites européennes comme champ(s). Réflexions sur les usages de la prosopographie et de l'analyse géométrique des données à partir de trois expériences de recherche collective sur des objets transnationaux," *Cultures & Conflits* 102 (2016), 121–147; François Denord, *Néo-libéralisme version française: Histoire d'une idéologie politique* (Paris: Demopolis, 2007).
- 4 Koenraad Verboven, Myriam Carlier, and Jan Dumolyn, "A Short Manual to the Art of Prosopography," in Katharine Keats-Rohan, ed. *Prosopography Approaches and Applications: A Handbook* (Oxford: Unit for Prosopographical Research, 2007), 60.
- 5 Verboven, Carlier, and Dumolyn, "A Short Manual to the Art of Prosopography."
- 6 Robert King Merton, "Science, Technology, and Puritanism in Seventeenth Century England," *Osiris* 4 (1938), 360–632.
- 7 Christophe Charle, *Naissance des 'intellectuels'. 1880–1900* (Paris: Minuit, 1990), 7.
- 8 Tristan Leperlier, *Algérie, Les écrivains dans la décennie noire* (Paris: CNRS Éditions, 2018).
- 9 The first column does not display the name (FAMILY NAME + First name), but rather a 1-0 code, making it easy to add or remove an individual from the database.
- 10 Pierre Bourdieu, *La Noblesse d'Etat. Grandes écoles et esprit de corps* (Paris: Minuit, 1989).
- 11 Sapiro, *The French Writers' War*. Frédéric Lebaron, *La Croyance .conomique: les .conomistes entre science et politique* (Paris: Seuil, 2000). Denord, *Néo-libéralisme version française*. Ducournau, *La Fabrique des classiques africains*.
- 12 Christophe Charle, "Champ littéraire et champ du pouvoir. Les écrivains et l'Affaire Dreyfus," *Annales .conomies, Sociétés, Civilisations* 32, no. 2 (1977), 240–264. Gisèle Sapiro, "The Structure of the French Literary Field during the German Occupation (1940–1944): A Multiple Correspondence Analysis," *Poetics* 30, no. 5–6 (2002), 387–402.
- 13 While the Radical Anti-Islamists considered the Islamic movement as essentially dangerous for democracy and as hiding terrorists, the Dialoguist Anti-Islamists believed in the necessity of reintegrating the Islamist movement into the political dialogue.
- 14 Verboven, Carlier, and Dumolyn, "A Short Manual to the Art of Prosopography."
- 15 Other limits are mentioned in Verboven, Carlier, and Dumolyn, 61 sqq.
- 16 Russell Jacoby, *The Last Intellectuals: American Culture in the Age of Academe* (New York: Basic Books, 1987).
- 17 Jacoby, *The Last Intellectuals*, 5.
- 18 Richard A. Posner, *Public Intellectuals: A Study of Decline* (Cambridge, MA: Harvard University Press, 2001); Steve Fuller, "Intellectuals: An Endangered Species in the Twenty-First Century?" *Economy and Society* 33, no. 4 (November, 2004), 463–483; Eleanor Townsley, "The Public Intellectual Trope in the United States," *American Sociologist* 37, no. 3

(2006), 39–66; Christian Fleck and Andreas Hass, *Knowledge for Whom? Public Sociology in the Making* (London and New York: Routledge, 2016).

19 David Kaiser, "A Mannheim for All Seasons: Bloor, Merton, and the Roots of the Sociology of Scientific Knowledge," *Science in Context* 11, no. 1 (1998), 51–87.

20 Karin Knorr Cetina, "Merton's Sociology of Science: The First and the Last Sociology of Science?," *Contemporary Sociology* 20, no. 4 (1991), 522–526.

21 Bruno Latour, *Laboratory Life: The Construction of Scientific Facts* (Princeton, NJ: Princeton University Press, 1986); David Bloor, *Knowledge and Social Imagery* (London: University of Chicago Press, 1991); Richard Schantz and Markus Seidel, eds., *The Problem of Relativism in the Sociology of (Scientific) Knowledge* (Frankfurt: Ontos-Verl, 2011).

22 Randall Collins, *The Sociology of Philosophies: A Global Theory of Intellectual Change* (Cambridge, MA: Belknap Press of Harvard University Press, 1998); Fuller, "Intellectuals."

23 Charles F. Manski, "Regression," *Journal of Economic Literature* 29, no. 1 (1991), 34–50.

24 Joseph Persky, "Retrospectives: Ceteris Paribus," *Journal of Economic Perspectives* 4, no. 2 (June 1990), 187–193. *Quantitative Methods in Intellectual History* 115

25 He had noticed that the size of children born of unusually tall parents approached the average size of the population. This meant that size was progressively "regressing" from one generation to the next. For Galton, regression thus referred to a biological phenomenon. Francis Galton, "Typical Laws of Heredity," *Royal Institution of Great Britain: Notices of the Proceedings at the Meetings of the Members* 8 (1877), 282. His interpretation of regression, however, was not of a statistical nature.

26 One of the first statistical uses of regression was the work of the British mathematician Udny Yule: G. Udny Yule, "On the Theory of Correlation," *Journal of the Royal Statistical Society* 60 (1897), 812–845.

27 Posner, *Public Intellectuals*.

28 Posner, *Public Intellectuals*, 97.

29 Posner, *Public Intellectuals*, 2.

30 Posner, *Public Intellectuals*, 25.

31 Posner, *Public Intellectuals*, 218.

32 Posner, *Public Intellectuals*, 171.

33 Posner, *Public Intellectuals*, 171.

34 Posner, *Public Intellectuals*, 72.

35 Laurent Beauguitte, "L'analyse de réseaux en sciences sociales et en histoire," in Rosemonde Letricot et al., eds. *Le Réseau. Usages d'une notion polysémique en sciences humaines et sociales* (Louvain: Presses Universitaires de Louvain, 2016), 9–24.

36 Edward Bender and S. Gill Williamson, *Lists, Decisions and Graphs* (San Diego: University of California, 2010). 37 Alain Degenne, "L'analyse des réseaux sociaux. Un survol à travers quelques jalons," *Bulletin of Sociological Methodology/Bulletin de Methodologie Sociologique* 118, no. 1 (2013), 22–43.

38 Moreno, *Who Shall Survive? A New Approach to the Problem of Human Interrelations* (Washington, DC: Nervous and Mental Disease Pub. Co, 1934).

39 Elizabeth Bott, *Family and Social Network: Roles, Norms, and External Relationships in Ordinary Urban Families* (London: Tavistock, 1957).

40 For an example of bibliometric network analysis in the framework of the sociology of intellectuals: Mohamed Amine Brahim and Houssein Ben Lazreg "Post-Islamism and Intellectual Production: A Bibliometric Analysis of the Evolution of Contemporary Islamic Thought", *Religion*, 12, no.1 (2021), 49.

41 Collins, *Sociology of Philosophies*.

42 Collins did not use statistically produced graphs but rather representations of networks aimed at illustrating his results.

43 Collins, *Sociology of Philosophies*, 24.

44 Collins, *Sociology of Philosophies*, 36.

45 Collins, *Sociology of Philosophies*, 14.

46 Collins, *Sociology of Philosophies*, 57.

47 Collins, *Sociology of Philosophies*, 57.

48 Collins, *Sociology of Philosophies*, 15.

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50 Pierre Bourdieu, *Science of Science and Reflexivity* (Chicago: University of Chicago Press, 2004), 89.