What's in a Surname? The Effects of Surname Initials on Academic Success

Liran Einav and Leeat Yariv

here is abundant research identifying external characteristics (race, gender, adolescent height) that affect labor market outcomes; for recent contributions, see Bertrand and Mullainathan (2004) and Persico, Postlewaite and Silverman (2004). In this paper, we focus on the effects of surname initials on professional outcomes in the academic labor market for economists.

We begin our analysis with data on faculty in all top 35 U.S. economics departments. Faculty with earlier surname initials are significantly more likely to receive tenure at top ten economics departments, are significantly more likely to become fellows of the Econometric Society, and, to a lesser extent, are more likely to receive the Clark Medal and the Nobel Prize. These statistically significant differences remain the same even after we control for country of origin, ethnicity, religion or departmental fixed effects. All these effects gradually fade as we increase the sample to include our entire set of top 35 departments.

We suspect the "alphabetical discrimination" reported in this paper is linked to the norm in the economics profession prescribing alphabetical ordering of credits on coauthored publications. As a test, we replicate our analysis for faculty in the top 35 U.S. psychology departments, for which coauthorships are not normatively ordered alphabetically. We find no relationship between alphabetical placement and tenure status in psychology.

We then discuss the extent to which the effects of alphabetical placement are internalized by potential authors in their choices of the number of coauthors as

■ Liran Einav is Assistant Professor of Economics, Stanford University, Stanford, California and Faculty Research Fellow, National Bureau of Economic Research, Cambridge, Massachusetts. Leeat Yariv is Associate Professor of Economics, California Institute of Technology, Pasadena, California. Their e-mail addresses are ⟨leinav@stanford.edu⟩ and ⟨lyariv@hss.caltech.edu⟩, respectively.

well as in their willingness to follow the alphabetical ordering norm. We find that the distribution of authors' surnames in single-authored, double-authored and triple-authored papers does not differ significantly. Nonetheless, authors with surname initials that are placed later in the alphabet are significantly less likely to participate in four- and five-author projects. Furthermore, such authors are also more likely to deviate from the accepted norm, and to write papers in which credits do not follow the alphabetical ordering.

The Relationship between Surname Initials and Professional Success

We collected demographic data regarding faculty at the top 35 economics departments in the United States.¹ The vast majority of the faculty data were collected from departmental websites and faculty home pages. For all faculty, we recorded their names, tenure status (untenured, tenured and emeritus),² nationalities, whether they are fellows of the Econometric Society (from the society's web page, as of January 2004) and the year they obtained their Ph.D. (the year of Ph.D. completion is available for approximately 80 percent of the sample).

Our goal is to assess whether faculty's last names have any noticeable effect on their professional success. We concentrate on several such measures: whether faculty members are tenured, whether they are fellows of the Econometric Society and whether they are recipients of the Nobel Prize or Clark Medal. We code surname initials into numbers between 1 and 26 lexicographically ("A" corresponding to 1, "B" to 2, and so on) and use regression analysis, which allows us to account for potential confounding factors, such as nationality, race and religion.³

Tenure Status

Overall, we find that tenured faculty at the top five economics departments have last names significantly closer to the start of the alphabet than do junior faculty at the same departments. This negative relationship remains significant for

¹ The top 35 economics departments, as ranked by Thursby (2000), are the following: 1) Harvard; 2) Stanford; 3) Chicago; 4) MIT; 5) Princeton; 6) Yale; 7) UC-Berkeley; 8) Pennsylvania; 9) Northwestern; 10) Minnesota; 11) UCLA; 12) Columbia; 13) Rochester; 14) Michigan; 15) Wisconsin; 16) UC-San Diego; 17) New York University; 18) Cornell; 19) Caltech; 20) Maryland; 21) Boston University; 22) Duke; 23) Brown; 24) Virginia; 25) North Carolina; 26) Washington; 27) Michigan State; 28) Illinois; 29) Washington University in St. Louis; 30) Iowa; 31) Texas; 32) Ohio State; 33) Johns Hopkins; 34) Pittsburgh; and 35) Texas A&M.

² Since not all departments are consistent in posting their emeriti faculty on their web pages, all the reported results are based on a sample that does not include emeriti faculty. Adding the available emeriti faculty does not change any of the results.

³ For the sake of presentational clarity, we report results from linear probability regressions throughout the paper. Results from probit regressions for all reported regressions yield virtually identical estimates and are reported in the preliminary working paper, Einav and Yariv (2004).

the top ten economics departments, but gradually disappears as we look at the set of top 20 and top 35 departments.

The four panels of Figure 1 present the cumulative distributions of surname initials corresponding to tenured and untenured faculty at the top five, top ten, top 20 and top 35 economics departments. Noticeable and statistically significant differences in surname distributions can be seen within top five and top ten departments. These differences are mostly driven by faculty whose surname initials are at the lower half of the alphabet, and they diminish as the sample expands. It is worth noting that the alphabetical distribution of surnames for the top 35 economics departments is essentially indistinguishable from the surname initial distribution of the entire membership of the American Economic Association (as calculated from the AEA's online directory in May 2005).

Table 1 provides the corresponding statistical evidence. For each group of faculty—top five, top ten, top 20 and top 35—there are two ordinary least squares regressions. The first set of regressions uses initial of last name as an explanatory variable, while the dependent variable takes a value of 1 for someone who is tenured and zero otherwise. In the regression for top five departments, each letter closer to the front of the alphabet increases the probability of being tenured by about 1 percent.

Since our analysis relies on cross-sectional variation, the second set of regressions addresses a story that could be told about the connection between surname and tenure. Perhaps the fraction of non-Americans at the junior faculty rank is higher at higher ranked universities, and perhaps foreign names are more likely to have initials later in the alphabet. To account for such a pattern, we control for American nationality, as well as for the origin of the name. We used two undergraduate research assistants to classify independently and subjectively last names as Jewish, Indian and other Asian. As the overlap between the two classifications produced by the research assistants was not perfect, we separately added each of them as a control, resulting in six dummy variables (referred to as origin controls in all the tables that follow). Table 1 illustrates that even after adding these controls, one letter closer to the start of the alphabet increases tenure probability by more than half of 1 percent in top five and top ten departments and that this effect remains statistically significant.

We experimented with several other control variables. The pattern, magnitude and statistical significance of these effects do not change if we control for departmental fixed effects. Controlling for the number of publications slightly reduces the reported relationship.⁴

⁴ We use publication counts at five top economics journals between 1980 and 2002 (as discussed further below). Out of three publication counts we tried—simple count, count of papers in which the author is the first author and count normalized by the number of coauthors—only the latter had a meaningful effect. Using publication data as a control for ability has two important limitations. First, publications may be endogenous: more successful individuals may find it easier to publish in top academic journals. Second, there is not much variation in publication counts for junior faculty: only eleven junior faculty in our data have more than two publications in the publication data we collected.

Figure 1
Cumulative Distributions of Surname Initials in Economics by Tenure Status

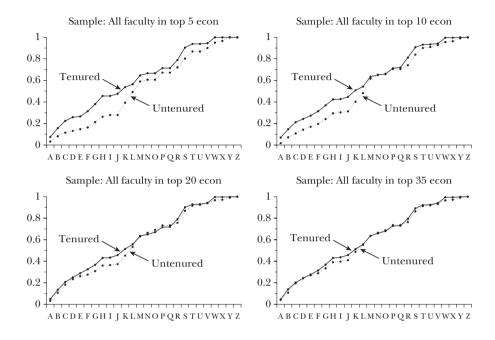


Table 1
Linear Probability Regressions
(dependent variable: 1 if tenured in Economics)

Sample	Top 5 econ		Top 10 econ		Top 20 econ		Top 35 econ	
Last name initial	-0.0099**	-0.0086*	-0.0068**	-0.0063**	-0.0026	-0.0016	-0.0015	-0.0011
	(-2.18)	(-1.84)	(-2.08)	(-1.97)	(-1.12)	(-0.74)	(-0.84)	(-0.60)
American	_	0.2282**	_	0.2062**	_	0.1873**	_	0.1436**
nationality		(3.61)		(4.63)		(5.78)		(5.53)
Six origin controls	no	yes	no	yes	no	yes	no	yes
\mathbb{R}^2	0.0225	0.1209	0.0106	0.1115	0.0016	0.0947	0.0006	0.0716
Number of obs.	208		405		799		1,233	
Number of								
tenured (%)	147 (70.7%)		293 (72.3%)		585 (73.2%)		911 (73.9%)	

Notes: **, *Statistically significant at the 5 percent and 10 percent confidence level, respectively. t-stats below coefficients. Probit results are virtually identical (see Tables 1 and 2 in Einav and Yariv, 2004).

As a further control for whether some name trend may be affecting younger faculty, we restricted the sample to include only economists who obtained their Ph.D. between 1991 and 2000, thereby reducing the age gap between a representative tenured faculty and a representative junior faculty and restricting attention to economists who are "just after" tenure and those who are "just before." The pattern of the effects reported in Table 1 does not change. In fact, the magnitude of the

effects at top five and top ten departments increases by about two-thirds. The statistical significance of these effects is, of course, lower, as sample sizes are about one-fourth as large.⁵

While our main finding in this section is the existence of an alphabetical effect, it is somewhat surprising that it is driven solely by the top ten departments. One could only speculate that perhaps tenure decisions at top departments are based on slightly different credentials from those that are used by lower-ranked departments. For example, conceivably, lower-ranked departments put more weight on vitae and publication counts, while top departments care more about visibility and impact. Surname initials may be more important for the latter (through, for instance, citation counts, which are discussed later).

Other Proxies for Professional Success

We now turn our attention to the 252 Econometric Society fellows in our sample. Of that group, only two are nontenured, so we restrict attention to tenured faculty only. This approach makes this set of results orthogonal to the results provided in Table 1, since it considers differences within a subset of professors who were all grouped together as tenured in the earlier analysis.

Figure 2 shows cumulative distributions by surname of this group and again reveals a gap in favor of those with surnames that are earlier in the alphabet. For simplicity, we present here only the analysis for top ten and top 35 departments, but the patterns are also parallel for top five and top 20 departments. Table 2 provides the corresponding regression results. The results are strikingly similar to those reported in Table 1. Tenured faculty in top ten economics departments with surnames closer to the start of the alphabet are significantly (at the 10 percent confidence level) more likely to be fellows of the Econometric Society. The magnitude of this effect is, again, almost 1 percent per letter. As before, the effect gradually vanishes as we expand the set of faculty to include tenured faculty in top 35 departments.

Figure 3 and Table 3 present similar results for the Nobel Prize and the Clark

⁵ We cannot control for age. First, age information is not available for many faculty members. Second, any proxy for age (such as the year of the Ph.D., which we have) will mechanically explain a large portion of the variation in tenure status, leaving only little variation to be explained by other variables.

⁶ A simple sorting story that can produce such a pattern, namely, that individuals with surnames later in the alphabet are denied tenure at top departments and move to lower-ranked departments, can be ruled out. By looking at Figure 1 more closely, it turns out that the distribution of surname initials of tenured faculty is quite similar among top ten and top 35 economics departments. The effects described in Figure 1 and Table 1 are almost entirely driven by the fact that junior faculty at top ten economics departments have surnames significantly later in the alphabet than junior faculty at top 35 departments. ⁷ Here the difference between the results for top ten departments and top 35 is equally driven by both fellows and nonfellows. Econometric Society fellows at top departments have surnames with earlier initials than those of fellows in top 35 departments, while faculty in top ten departments who are not fellows of the Econometric Society have surnames with later initials than those of nonfellows at top 35 departments. Since fellowship in the Econometric Society is not related to departmental affiliation, the different pattern between surname initials and fellowship in the Econometric Society across departments is somewhat puzzling.

Figure 2
Cumulative Distributions of Surname Initials in Economics by ES Fellowship Status

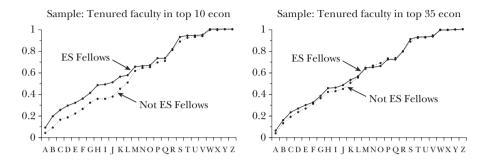


Table 2
Linear Probability Regressions
(dependent variable: 1 if Fellow of the Econometric Society)

Sample	Tenured faculty	at top 10 econ	Tenured faculty at top 35 econ		
Last name initial	-0.0077*	-0.0072	-0.0013	-0.0015	
	(-1.82)	(-1.61)	(-0.58)	(-0.70)	
American nationality	_	0.0063	<u> </u>	0.0561*	
,		(0.10)		(1.82)	
Six origin controls	no	yes	no	yes	
\mathbb{R}^2	0.0113	0.0220	0.0004	0.0138	
Number of obs.	293		9	911	
Number of ES Fellows (%)	153 (5)	2.2%)	250 (27.4%)		

Notes: *Statistically significant at the 10 percent confidence level. t-stats below coefficients. Probit results are virtually identical (see Table 3 in Einav and Yariv, 2004).

Medal. We again obtain a negative relationship between surname initials and the likelihood of winning these honors. However, these results are not statistically significant, primarily due to the small number of recipients in the data: the top 35 departments have a total of only 13 Nobel laureates (remember, our sample does not include emeritus faculty) and 14 Clark Medal recipients; the top ten departments have only seven Nobel Laureates and 13 Clark Medal recipients.

In short, the alphabetical placement of surnames for economists affects an array of proxies for success, and this relationship holds for groups of economists at different stages in their careers.

Alphabetical Author Ordering and Alphabetical Discrimination

Tenure and professional prestige are clearly influenced by publication record. In economics, the convention is that authors of a coauthored article are listed in

Figure 3
Cumulative Distributions of Surname Initials for Nobel Laureates and Clark Winners

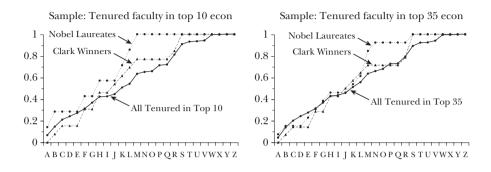


Table 3
Linear Probability Regressions
(dependent variable: 1 if Nobel Laureate or Clark Medal recipient)

	Tenured facult	y at top 10 econ	Tenured faculty at top 35 econ		
Sample measure	Nobel Prize	Clark Medal	Nobel Prize	Clark Medal	
Last name initial	-0.0018	-0.0007	-0.0005	-0.00004	
	(-1.39)	(-0.40)	(-0.84)	(-0.07)	
\mathbb{R}^2	0.0066	0.0005	0.0008	0.0000	
Number of obs.	293	293	911	911	
Number of					
winners (%)	7 (2.4%)	13 (4.4%)	13 (1.4%)	14 (1.5%)	

Notes: t-stats below coefficients. Probit results are virtually identical (see Table 4 in Einav and Yariv, 2004).

alphabetical order. The expectation that coauthors will be listed alphabetically differs across disciplines. In the years 1980–2002, about half of the publications in five of the most prominent economics journals were multiauthored. In 88 percent of these articles, the authors were listed alphabetically (see Table 5 in the next section). In contrast, in many of the widely read journals of neighboring disciplines—American Journal of Sociology, American Psychologist, Angewandte Chemie and New England Journal of Medicine—the rate of coauthorship stands similar to economics, but only 40–50 percent of the corresponding coauthors are listed alphabetically (Engers, Gans, Grant and King, 1999, Tables 1 and 2).

Below we present two pieces of evidence that strongly suggest that the convention in economics regarding the alphabetical ordering of credits in coauthored papers may be one cause of the alphabetical discrimination we identified in the previous section.

The first piece of evidence repeats our earlier analysis for faculty at the top

35 psychology departments.⁸ Psychology is one of the closest disciplines to economics, but it follows the convention of listing coauthors by contribution, rather than according to their alphabetical placement. (An exception to this rule is the head of the lab who sometimes appears last.) The four panels in Figure 4, parallel to those in Figure 1, present the surname distribution of psychology faculty in top five, top ten, top 20 and top 35 departments. The gap between last names and tenure is smaller in psychology; in fact, in some cases the junior faculty have names that appear earlier in the alphabet. Table 4 presents the regression results for these groups. This analysis results in smaller, insignificant and often reversed relationships between last names and seniority status. This pattern suggests the importance of the conventions pertaining to the ordering of authorship, and in particular whether it is alphabetically based.9

The second piece of evidence repeats the analysis for earlier decades. The number of coauthored articles in economics has risen substantially in recent years. As Hudson (1996) noted in this journal, in the years 1966-1970, the average proportion of multiauthored papers in top economics journals stood around 23 percent, which monotonically increased since, surpassing the 50 percent level during the 1990s. Rosenblat and Mobius (2004) document a steep rise in coauthorships in the period after use of the Internet became more widespread in 1991. 10 Consequently, if the ordering of authors' names is the channel by which alphabetical discrimination operates, one would expect the effects to be much weaker for past periods, in which many of the senior faculty had created a career based on predominantly single-authored papers. With this implication in mind, we collected data on faculty at the top five economics departments for academic years

⁸ The top 35 psychology departments, as ranked by the National Research Council (1996), are the following: 1) Stanford; 2) Michigan; 3) Yale; 4) UCLA; 5) Illinois; 6) Harvard; 7) Minnesota; 8) Pennsylvania; 9) UC-Berkeley; 10) UC-San Diego; 11) Carnegie Mellon; 12) Washington; 13) Princeton; 14) Cornell; 15) Wisconsin; 16) Texas; 17) Columbia; 18) Chicago; 19) Virginia; 20) Indiana; 21) Ohio State; 22)Oregon; 23) Colorado; 24) Northwestern; 25) North Carolina; 26) UC-Irvine; 27) Massachusetts; 28) Rutgers; 29) Southern California; 30) Purdue; 31) Rochester; 32) Penn State; 33) Duke; 34) New York University; and 35) Johns Hopkins.

⁹ In the hard sciences, Shevlin and Mark (1997) found a correlation between citation rates and authors' alphabetical placement, favoring authors with earlier initials. This correlation, however, disappears when controlling for the base rate distribution of names using the London phone book. Over and Smallman (1970) looked at the Journal of Physiology, in which alphabetical ordering was mandatory. They found less collaborative publication by scientists with surnames starting with letters later in the alphabet (P-Z) than in other journals in the field. Zuckerman (1968) conducted interviews with Nobel laureates in the hard sciences. Zuckerman notes that laureates often exercise their noblesse oblige by giving credit to less-eminent coauthors increasingly as their own eminence grows, particularly after winning the prize. This noblesse oblige has its limits; laureates' contributions to prize-winning research are more visible than contributions to their other research. Economics and the hard sciences do differ in the dimensions in which intellectual collaboration takes place. Laband and Tollison (2000) find that while the incidence and extent of formal intellectual collaboration through coauthorships are greater in biology than in economics, the incidence and extent of informal intellectual collaboration (for example, through discussions at conferences) are greater in economics than in biology.

¹⁰ See also Ellison (2002), who provides a review of the trends in publication in top economic journals and illustrates how that process has slowed down over the past three decades. A general overview of recent trends in the economics profession appears in Gans (2001).

Figure 4
Cumulative Distributions of Surname Initials in Psychology by Tenure Status

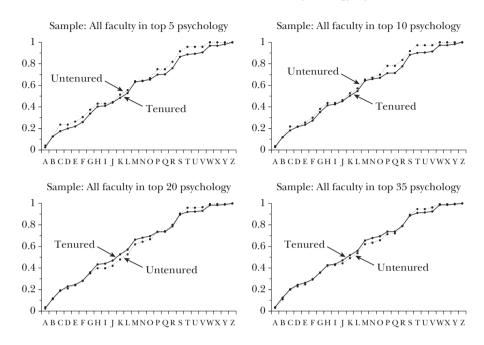


Table 4

Linear Probability Regressions
(dependent variable: 1 if tenured in psychology)

Sample	Top 5	psych	Top 10	O psych	Top 20	0 psych	Top 3.	5 psych
Last name initial	0.0026	0.0027 (0.97)	0.0026 (1.06)	0.0027 (1.09)	-0.0007 (-0.34)	-0.0002 (-0.11)	-0.0005 (-0.36)	-0.0001 (-0.07)
Six origin controls R ²	no 0.0022	yes 0.0743	no 0.0020	yes 0.0542	no 0.0001	yes 0.0315	no 0.0001	yes 0.0294
Number of obs. Number of	392		556		904		1,466	
tenured (%)	320 (81.6%)		446 (80.2%)		733 (81.1%)		1,200 (81.9%)	

Notes: t-stats below coefficients. Probit results are virtually identical (see Table 5 in Einav and Yariv, 2004).

1979–1980 and 1989–1990. Repeating the same exercise for those groups, we find no significant relationship between last names and tenure status.

Do Economists Respond to Alphabetical Bias?

Alphabetical bias provides an incentive for strategic behavior in publications. To identify whether such behavior is present, we collected a data set of dates,

authors and paper length for all publications at the American Economic Review (AER), Econometrica, the Journal of Political Economy (JPE), the Quarterly Journal of Economics (QJE) and the Review of Economic Studies (REStud) from 1980 to 2002. We excluded notes and comments, as well as unrefereed publications; in particular, publications in the May "Papers and Proceedings" issues of the American Economic Review were not included. Table 5 contains a summary of these data. About half of the papers over this time are multiauthored, and in 88 percent of the multiauthored papers, the authors are ordered alphabetically. The share of multiauthored papers has steadily increased over time within our observation period, in all journals.

Table 5 also presents the main findings from these data. After converting initials to a numerical scale from 1 to 26, we report the average initials corresponding to coauthored papers in which credits are alphabetical and those in which credits are nonalphabetical. Coauthors with higher surname initials are, of course, more likely to be listed last in the credits list. By basing the analysis on the average initial, we do not have to worry about the relative position of each coauthor within each particular paper.

The results indicate that there is no significant effect on coauthorship patterns among single-authored, two-author and three-author papers. In particular, we cannot reject the null that the surname initials of authors participating in two- and threeauthor papers are independent draws from the distribution of surname initials of single-authored papers. In contrast, authors with initials earlier in the alphabet are more likely to select themselves into four- and five-author projects. The effect is quite big: the average initial of four- and five-author papers is about half a standard deviation (of the surname distribution of single-authored papers) lower than that of other papers. Conceivably, this is because authors with higher initials will tend to avoid papers with four or five coauthors, as they will find themselves consistently listed fourth or fifth in the group and experience relatively low returns for their work. 11

Finally, we find significant evidence that coauthors with later surname initials are more likely to reverse the order in which coauthors are listed. Nonalphabetical ordering is more prevalent in papers authored by economists with higher-thanaverage initials. The results in Table 5 show that while this effect is most significant for three- and four-author papers, it is also present in two-author papers. I'2 Unless coauthors with higher initials are more likely to be greater contributors, which seems unlikely, this effect can only be driven by the perceptions of authors that the order of authors is consequential. Thus, this finding suggests that such authors

¹¹ Engers, Gans, Grant and King (1999) analyze a theoretical model of bargaining between two authors over their placement in a paper's credits and show that alphabetical ordering of names arises as an equilibrium. However, they take the two authors' participation decisions in the joint project as given; given our empirical findings, it would be interesting to analyze their setting when participation decisions are endogenous. In Einav and Yariv (2004), we show that the qualitative empirical pattern can be rationalized by modeling participation decisions of authors in multiauthored projects in the presence of alphabetical discrimination.

¹²See also van Praag and van Praag (2004) for an analysis of authors' decisions to order names nonalphabetically.

Table 5 **Publication Statistics**

Number of authors ^a	Obs. (%)	Mean initial	Std. dev.	
1	3,378 (49.8%)	11.38	6.95	
2	2,691 (39.6%)	11.43	4.97	
Alphabetically	2,460 (91.4%)	11.39	4.98	
Nonalphabetically	231 (8.6%)	11.91	4.83	
3	628 (9.3%)	11.60	4.08	
Alphabetically	507 (80.7%)	11.44	4.07	
Nonalphabetically	121 (19.3%)	12.28^^	4.07	
4	84 (1.2%)	10.55**	3.38	
Alphabetically	26 (31.0%)	8.60	3.16	
Nonalphabetically	58 (69.0%)	11.43^^	3.12	
5	8 (0.1%)	7.18**	3.25	
Alphabetically	0	_	_	
Nonalphabetically	8 (100%)	7.18	3.25	
All Multiauthored	3,411 (50.2%)	11.43	4.78	
Alphabetically	2,993 (87.7%)	11.37	4.83	
Nonalphabetically	418 (12.3%)	11.86^^	4.43	

Notes: Alphabetical order refers to alphabetical ordering of all authors.

perceive alphabetical discrimination to exist—and in the light of our previous findings such a perception may indeed have some merit.

It should be noted that while the reported results pool all five journals, the results are qualitatively similar for the *JPE*, *QJE* and *REStud* when the analysis is performed separately for each journal. The results for the *AER* are weaker, while *Econometrica* publications reveal no interesting pattern in the dimensions we analyze. All the reported results are fairly robust to the inclusion of a time trend.

Possible Channels

A surname with a first letter that is earlier in the alphabet is correlated with several proxies for professional success in the economics labor market. We suspect that the accepted norm in economics of alphabetical ordering of credits in collaborative work may play an important role in creating this "alphabetical discrimination." It is essentially the only institutional structure creating asymmetries between market participants with different surname initials. Furthermore, alphabetical placement seems to have no significant consequences on academic success in

^a No paper in the data set has more than five authors.

^{**} Significantly lower (at 5 percent) than single-authored papers; the test is based on Table 7 in Einav and Yariv (2004), which reports the results from a linear regression of the mean initial on a set of "number of authors" dummy variables interacted with an alphabetically ordered dummy variable.

^{^^} Significantly higher (at 5 percent) than the corresponding alphabetically ordered multiauthored papers; the test is based on Table 7 in Einav and Yariv (2004), which reports the results from a linear regression of the mean initial on a set of "number of authors" dummy variables interacted with an alphabetically ordered dummy variable.

psychology, in which publications specify authors predominantly according to their intellectual contribution. Indeed, we also document a significant relationship between alphabetical placement and participation in multiauthored projects and willingness to deviate from the accepted norm and list authors nonalphabetically. These patterns suggest that market participants are aware of this "alphabetical discrimination" and respond.

There are several possible channels by which the alphabetical ordering norm can produce alphabetical discrimination.

First, when referring to a paper with more than two authors, it is common to mention only the first author and then to use "et al." for the rest. Thus, the work of first authors, with surname initials earlier in the alphabet, may be easier to remember.

Second, the fact that first authors appear first on every mention of their collaborative work (even when all the coauthors are listed), as well as the fact that reference lists are normally ordered alphabetically, may draw attention to authors with lower average surnames. In fact, this sort of influence on attention appears to be heavily exploited in the realm of advertising. For example, the 2003–2004 Los Angeles Westside Yellow Pages reveal more than 450 listed businesses with names containing a seemingly redundant initial A, as in "A-Approved Chimney Services," "A Any Way Bail Bonds," "A Budget Moves," and the like.

Third. the Social Science Citation Index in book form lists works according to first authors only, creating potential biases in citation counts favoring authors with lower initials. While the online version of the citation index corrects for this by accounting for all authors of the referenced work, this is so only for published work in journals covered by the citation index. For other types of research, such as working papers or books, only first authors are accounted for (according to the online guidelines for "cited ref" search in ISI's Web of Science), so some bias may still exist.

Our findings regarding authors' choices of coauthorships are important in ruling out one potentially appealing explanation. Suppose authors with later initials in the alphabet were reluctant to coauthor, at least early in their careers. To the extent that coauthorships allow an author to write more papers, this effect alone would make the resumes of higher-initial authors shorter, leading to apparent alphabetical discrimination. Given our findings that such a response is only present for four- and five-author papers, which account for less than 3 percent of all multiauthored papers, we do not think that this channel can explain the observed patterns.

We remain agnostic as to which of these (or other) mechanisms are at work. Nonetheless, we maintain that some policy implications may be drawn from the observed effects of alphabetical placements. For example, economics journals could require the termination of the use of "et al." Citations can appear as footnotes (as in law reviews) instead of endnotes, or their order can be determined by their importance, their order of appearance in the text, or by a chronological order of publication. The order of coauthors could be randomized or ordered by contribution (as in most other academic disciplines). At the individual level, economists entering the labor market could simply change their names. Indeed, one of us is currently contemplating dropping the first letter of her surname.

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