

A Cast of Thousands: Co-authorship and Sub-authorship Collaboration in the Twentieth Century as Manifested in the Scholarly Journal Literature of Psychology and Philosophy

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We chronicle the use of acknowledgements in twentieth century scholarship by analyzing and classifying more than 4,500 specimens covering a 100-year period. Our results show that the intensity of acknowledgment varies by discipline, reflecting differences in prevailing socio-cognitive structures and work practices. We demonstrate that the acknowledgment has gradually established itself as a constitutive element of academic writing, one that provides a revealing insight into the nature and extent of sub-authorship collaboration. Complementary data on rates of co-authorship are also presented to highlight the growing importance of collaboration and the increasing division of labor in contemporary research and scholarship.

Introduction

The old adage “strength in numbers” holds for research and scholarship. As Posner (2001, p. 540) has observed, “academic work increasingly is teamwork, just like industrial production.” Numerous studies have documented the growth in inter-institutional, interdisciplinary, and inter-sectoral scientific collaboration in the second half of the 20th century, especially in “big science” (e.g., Bordons & Gomez, 2000; Luukkonen, Persson & Sivertsen, 1992). The internationalization of science and scholarship is also irreversibly established: “Scientific research in our time is either global or ceases to be scientific” (Castells, 2000, p. 125).

Various theories have been put forward to explain the growth in collaboration, ranging from resource optimization and the progressive professionalization of science (e.g., Beaver & Rosen, 1978; Eaton, 1951) to functional explanations of collaborative behavior (Wray, 2002). The most visible indicators

of the trend to collaboration and also the increasing division of labor are national and international co-authorship rates, data on which can be mined from online bibliographic sources such as the citation databases produced by the Institute for Scientific Information (ISI). (Another, though less immediately accessible and less comprehensive, indicator would be the number of co-PIs on research grant applications to agencies such as the National Science Foundation.) Co-authorship rates have risen across the board, but most dramatically in science, technology, and medicine (e.g., Cronin, 2001, pp. 560-561; Wray, 2002, pp. 159, 167). Collaboration is not a function of professional rank or status; Nobel laureates also collaborate intensively. According to Zuckerman (1977, p. 176), “the majority of investigators honored by Nobel awards have involved collaboration,” and the trend increased during the course of the twentieth century reflecting “the secular shift to joint research in all the sciences ...” (p. 176). In other words, teamwork pays off, whatever your place in the pecking order. It is also worth noting that the rates of return to multi-authored papers, in terms of citations—an important form of symbolic capital in the academic reward system (Cronin & Shaw, 2002; Gelman & Gibelman, 1999)—are consistently greater than for single-authored papers (Glänzel, 2002, p. 472).

In fields such as biomedicine and high-energy physics, the number of co-authors can sometimes be in the hundreds, the phenomenon described by Cronin (2001) as “hyperauthorship.” Here the scale and complexity of projects are invariably beyond the capabilities of an individual or a small group, requiring instead professionally-managed teams of often globally-distributed scientists supported by complex research infrastructures and significant levels of federal funding (by way of illustration, total R&D expenditures in the U.S. for FY02-03 were \$112 billion). Structural interdependence (between research groups, labs, and institutional partners) has become a fact of life in many scientific fields, supplanting “the privatized monastic rules of research” (Gilroy, 2002, p. B20). Then there are disciplines such as astronomy and botany that have long relied on the observations and testimonies of teams of amateur observers—“citizen science” (Van House, 2002, p. 101). In short, the idea of the “lone wolf” scholar (Patel, 1973, p. 92), though appealing, is largely anachronistic, not only in the natural and physical sciences but also the social sciences. That said, we have a strong impressionistic sense that in the humanities sole authorship continues to be the norm.

Co-authorship, though, is not a complete measure of collaboration: not all forms of professional interaction are signaled so directly (Katz & Martin, 1997). Historically, some types of collaboration—what Wray (2002, p. 152) has termed “collective but non-collaborative research”—have seen credit and responsibility vested publicly in one individual rather than in the research group or *atelier*; one thinks of Shapin’s (1995, chapter 4) description of Robert Boyle’s work environment, the Great Man’s relationship with his technical assistants, and, more generally, the “epistemic role of support personnel” (p. 359) in the conduct of early scientific research.

Some individuals whose names are included as co-authors may have contributed little or nothing to the work reported; this is known variously as “gift” or “gratuitous” authorship (Croll, 1984; Rennie & Flanagin, 1994). Others, who have made material contributions, may find that they are not mentioned at all, or, at best, included in a paper’s acknowledgments. These underappreciated souls are often referred to as “ghost” authors (Rennie & Flanagin, 1994). Such practices (gifting and ghosting) may not be universal, but in biomedicine they have become a significant and well-documented source of concern to researchers, publishers, and editors alike. Nor is the problem limited to biomedical publishing. A recent survey of the membership of the American Physical Society also revealed concerns about the ethics of scientific co-authorship (Tarnow, 2002).

There is another, often over-looked, measure which can be used alongside co-authorship in documenting and analyzing trends in scholarly collaboration—sub-authorship collaboration, a term coined by Patel (1973), and employed subsequently by Heffner (1981). Sub-authorship collaboration is made manifest in acknowledgment statements. In the 20th century, the acknowledgment seems to have become a constitutive feature of the academic journal article (Cronin, 1995), as well as a potentially rich source of insight into the myriad forms of assistance and interaction—both formal and informal—which are otherwise invisibly inscribed in scholarly texts (Davenport & Cronin, 2001). The acknowledgment furnishes documentary evidence of what Mullins (1973, p. 30) calls “trusted assessorship.”

As with citation, theoretical discussion of acknowledgment is often framed in terms of normatively-grounded behaviors: a set of reciprocal practices for which a tacitly understood “governing etiquette” (Cronin, 1995, p. 107) exists. Unlike citations, which point or link to other publicly-accessible work, acknowledgments have limited “instrumental cognitive functionality,” though—and to continue using Merton’s (2002, p. 438) terminology—they do share with citations a number of “symbolic institutional functions.” In fact, acknowledgments, rather like citations, “provide pellets of peer recognition” (Merton, 2002, p. 438), and in recent years seem to have become a standard feature of scholarly texts (Cronin, 1995).

Combined, co- and sub-authorship data could in theory provide us with the means to create a compound index of collaboration in research, as Patel (1973) suggested in his longitudinal study of such practices in four leading sociology journals. These two meta-textual elements (byline and acknowledgment) constitute a cumulating ledger of socio-cognitive connections and dependencies within and between scholarly discourse communities; but because acknowledgment data are not machine-searchable and analyzable in the way that author and citation data are with ISI’s citation databases, most often they are ignored in sociometric analyses of scholarly communication—understandably, if regrettably.

Relatively few analyses of acknowledgment practices, genres, and trends have been undertaken because of this very basic, practical limitation. There is thus a temptation to dismiss acknowledgments as little more than marginalia in the annals of science; but as Hollander notes (2002, p. 63), “their significance emerges when they are aggregated.” (Precisely the same argument has been made—and compellingly made—in respect of citations [e.g., White, 1990].) Cronin (1995) has reviewed a range of acknowledgment studies covering the journal literature of such fields as history, information science, psychology, and sociology. However, these and subsequent explorations (e.g., Cronin, Davenport, & Martinson, 1997; Cronin & Shaw, 1999) typically cover only five or 10 years’ worth of the literature, which makes it difficult to develop a reliable sense of whether and how the acknowledgment genre has co-evolved with other features of the scholarly article and, moreover, the discipline of which it is a byproduct. Hartley (2003) has looked recently at the comparative frequency with which single authors, pairs, and larger groups

of authors acknowledge colleagues, and found that the fewer the number of authors, the greater the number of acknowledgments. Bazerman's (1984) description of the evolution of experimental articles in *Physical Review* (1893-1980)—though not dealing specifically with the phenomenon of public acknowledgment—does at least help locate the convention in its larger historical and discursive context, noting, for instance, how the practice emerged, faded, and resurfaced over the years in this one journal. On the other hand, Hyland's (2000) wide-ranging monographic analysis of the lexical and stylistic features of a number of scholarly textual genres—including research articles—makes no mention whatsoever of acknowledgments as either an established or emerging sub-genre in academic writing.

To date there has been very little systematic analysis of the evolution of the acknowledgment, and little discussion of its functional or symbolic significance. The present study is a modest comparative effort to redress this gap in the literature, and focuses on two fields—psychology and philosophy. Data are gathered from two leading and persistent journals, *Psychological Review* and *Mind*. The former (American) is an example of the literature of the social sciences, while the latter (British) is an example from a humanities discipline. Both journals have been in existence continuously for more than 100 years and both are highly regarded in terms of their scholarly import and impact. *Magazines for Libraries* (Katz & Katz, 2000) described *Mind* as “a preeminent British philosophy journal” (pp. 1170-1171) and *Psychological Review* as a “longstanding, basic resource for psychology” (p. 1248). Moreover, the 1999 (chosen to reflect a contemporary perspective) *Journal Citation Reports (JCR)* impact factor ranking placed *Psychological Review* 3 out of 107 journals in psychology. (*JCR* data are not available for arts and humanities journals, including *Mind*.) By logging and examining every acknowledgment in every issue in each of these journals over the course of the 20th century we want to observe whether and how this humble, textual sub-genre has developed, and also consider whether its stylistic form and ostensive purposes have co-evolved with disciplinary practices and discourses. (We are at the time of writing completing a similar, long-term study of the *Journal of the American Chemical Society*, a leading chemistry journal.)

Disciplinary Profiles

But first a few words on the two focal fields in order to situate our data in some recent historical context. If the result seems like caricature, the fault is ours. Our potted history of psychology draws liberally on Wertheimer's (1987) book, *A Brief History of Psychology*. In the early part of the 20th century, North American psychology was distinguished by a number of competing schools or systems (e.g., behaviorism, functionalism, Gestalt psychology) with their different intellectual leaders and paradigmatic preferences. In the early 1900s, psychology was still a domain that could accommodate "the mystical humanist" (Wertheimer, 1987, p. 157); the subject was commonly considered a subdivision of philosophy. (The journal *Mind*, it is worth noting, was originally known as *Mind, A Journal of Psychology and Philosophy*.) However, by the middle of the century, psychology was moving into a post-schools mode, with the objective empirical method asserting dominance. The growing emphasis on mathematics and quantitative methods in general also contributed to the willingness of governments and foundations to make funds available to support behavioral research programs in psychology.

By the 1960s, departments of psychology were firmly established in universities and colleges worldwide. Another important development was the rapid professionalization of psychology—as evidenced in the prodigious growth in the membership of the American Psychological Association (APA) during the twentieth century (Garvey & Griffith, 1972, p. 124). Figure 1, updating Garvey and Griffith with data from the APA's web site (<http://www.apa.org/archives/yearlymembership.htm>), shows how the membership rose from 127 in 1900 to 72,064 by the end of the century. The advent of the computer also had a profound effect on the discipline, leading, *inter alia*, to the emergence of cognitive science and neuropsychology as important experimentally-based areas of research. By the tail-end of the century, psychology "had become a huge, self-respecting, diverse endeavor, almost unrecognizably different from its counterpart a century earlier" (Wertheimer, 1987, p. 147).

It was more than a hundred years earlier (1874) that James McKeen Cattell, one of the founding fathers of the discipline, started *Psychological Review* with another influential pioneer, James Mark Baldwin. The journal thus provides a window into the maturing of psychology as a scholarly discipline and also serves as a valuable archival record of the extent to, and ways in, which collaboration was

operationalized. Additional insights are afforded by the APA *Publication Manual* and its various editions over the decades. By way of illustration, the *Manual* expanded from 61 pages in 1967 to 439 in 2001. This six-fold growth reflects the increasing sophistication of the field and its concern for promulgating explicit academic norms and standards. Likewise, the amount of coverage given to acknowledgments in the *Manual* has increased over the years from 59 words in 1967 to 151 in 2001 (see Appendix 1). For more on the growing prescriptiveness of the APA *Publication Manual*, see Bazerman (1988, pp. 261-263).

If psychology is a recent entrant to the disciplinary pantheon, philosophy is a long-standing member of some distinction. According to the *Encyclopaedia Britannica* (<http://search.eb.com>) “the tradition of philosophical ‘professionalism’” was established during the Enlightenment by Kant and Wolff. Yet, it is worth remembering that some of philosophy’s most notable figures (e.g., Kierkegaard, Schopenhauer) were not, in fact, academicians. Contemporary philosophy, though unquestionably more technical and specialized than in the 18th and 19th centuries (a trend reflected in the increasing specialization of the discipline’s journals), is still recognizably the same subject, grappling with the same large epistemological, ontological, moral, and logical issues that have exercised philosophers for centuries. And it is probably true to say that the material practice of philosophy, unlike psychology, has remained essentially unchanged. This is one discipline in which individual research and sole authorship continue to be defining features, impressionistically at least. Philosophy has not been “industrialized,” to use Posner’s (2001) term, nor has it been transformed by the advent of the computer, though philosophers, cognitive scientists, and computer scientists now have overlapping areas of concern (e.g., artificial intelligence). Indeed, the stereotype of the philosopher as a solitary, reflective scholar persists in the popular imagination, a fact testified to by the general public’s evident fascination for the biographical details of luminaries such as Ludwig Wittgenstein, Bertrand Russell, Karl Popper and A. J. Ayer (see, for instance, *Wittgenstein’s Poker* [Edmonds & Eidinow, 2001]).

Methods

We physically examined every issue of the 100 volumes of both *Psychological Review* and *Mind* in order to (i) identify all research articles, (ii) log the number of authors and co-authors, (iii) record the

number of acknowledgments, (iv) capture the full text of all acknowledgments, and (v) extract the names of all those mentioned in acknowledgments. We did not include editorials, letters, notes, responses, reviews, *in memoriam* or other similar items in our analysis. We scrutinized all articles to discover any acknowledgment embedded in the text, as well as those set apart at either the beginning or end of the article in the typical acknowledgment statement. Next, we classified all acknowledgments using a modified 6-part typology derived from Cronin (1995, pp. 41-45).

Acknowledgments are often compound entities; authors may in one breath thank colleagues for ideas, funding agencies for support, spouses for forbearance, etc. We recorded each type of acknowledgment for each research article, and classified them as follows: *conceptual* (source of inspiration, idea generation, critical insight, intellectual guidance, etc.); *editorial* (providing advice on manuscript preparation, submission, bibliographic assistance, etc.), *financial* (recognition of external or intra-mural funding); *instrumental/technical* (providing access to tools, technologies, facilities, and infrastructural resource, and also furnishing technical expertise, such as data capture, experimental design, or statistical analysis); *moral* (recognizing the support of family, friends, etc.). We added a sixth category during our analysis of *Psychological Review—reader*—to accommodate expressions of gratitude to people who presented (i.e., read) a paper at a meeting, a practice which appears to have died out at the end of the first decade of the 20th century. (*Mind* did not contain any instances of this category.) When we were uncertain as to the nature of an acknowledgment, we classified it as *unknown*. We did not include oblique references (proto-citations, if you will) such as the following example from *Mind*: “The excellent suggestion to treat name-variables as pronouns is, so far as I know, due to Quine.”

At the outset, team members individually classified samples of acknowledgments and compared notes to develop a better common understanding of the categories. In cases of divergence, we discussed our respective interpretations and rationales. During the course of the data-gathering stage we tested the reliability of our coding scheme on a 15% random sample of *Psychological Review* volumes. Our first test revealed inconsistencies in the coding of conceptual and editorial acknowledgments. These were reviewed

and recoded, and on the second test inter-coder reliability averaged 91% (with a range of 85%-100%). We repeated the procedure with *Mind*, and achieved an average reliability of 89% (range 80%-96%).

Results

Psychological Review

We identified a total of 2,707 research articles in *Psychological Review*. The number of articles per decade varied somewhat over the course of the century: the low (172) was for 1900-1909; the high (373) for the years 1950-1959 (see Table 1). The practice of affixing acknowledgments to journal articles changed strikingly during the 20th century. Almost half (49%) of the articles in *Psychological Review* contained some form of acknowledgment, though the variation was wide, ranging from 10% in the nineteen twenties to 97% in the eighties (see Table 1). By the end of the 20th century, almost every article contained an acknowledgment. The most notable change occurred between 1940 and 1969. In the forties, only 22% of articles included an acknowledgment. By the fifties that had virtually doubled (43%), and almost doubled again by the end of the sixties (84%). The breakdown of acknowledgment categories is shown in Table 2. It should be remembered that an article can contain multiple acknowledgments, for instance, to a funding agency, a mentor, and technical support personnel. The relative frequencies were as follows: financial 36%; conceptual 31%; instrumental/technical 20%; editorial 11%. The categories moral and reader accounted for nine and 13 mentions, respectively, which together amounted to only one per cent. The most striking change over time has been the frequency with which funding support was acknowledged. None of the 172 articles identified for the years 1900-1909 contained a financial acknowledgment, whereas 214 of the 268 (80%) identified for the nineties did. In the 1950s, only 17% of articles included an acknowledgment for financial support, but by the following decade this had risen to 61%, a trend that continued. Acknowledgments for editorial assistance also showed sustained growth, rising from zero at the beginning of the century to 29% in the 1990s. In the first half of the century, the conceptual category averaged 7%, rising in the second half to 49%. An example of each acknowledgment category is shown in Appendix 2.

A majority (74%) of the 2,707 articles were sole authored (see Table 3). The 706 multiple-authored articles involved a total of 907 co-authors. Figure 2 shows the ratio of single- to co-authored

articles for the entire century. During the eighties, the number of co-authored articles exceeded the number of sole-authored articles for the first time. During the nineties, 71% of all research articles were co-authored, whereas during the first three decades of the century co-authorship accounted for only 15%, 11%, and 5% of all articles, respectively. The change between the first and second halves of the century was highly significant ($\chi^2 = 300.193$, $df=1$, $p<.001$).

We identified all those mentioned by name in two categories of acknowledgment: conceptual and instrumental/technical. These are the two types that capture what McCain (1991) refers to as peer interactive communication, and, as such, they constitute a credible index of substantive scholarly collaboration. This gave us a total of 4,398 names, of which 3,126 were unique. We recognize that the latter number may be slightly inaccurate. First there is the issue of homographs: To take an extreme case, is Dr. William McDougall acknowledged in 1914 the same individual acknowledged with that name in 1963? We have assumed that acknowledgments with the same name are to the same individual, since the impact of one's contributions may extend even beyond a lifetime. Then there is the matter of allonyms (White, 2001, p. 91): Is "Harold Sedgwick" acknowledged in 1974 the same individual acknowledged as "Hal Sedgwick" in 1999? We have also assumed that different names represent different individuals, although when Web searches for the most-acknowledged individuals uncovered alternate forms of the same name these were combined. Most of those who were acknowledged were mentioned but once (2,477, or 79%). The most frequently acknowledged individuals were R. Duncan Luce (25), William Estes (20), and Amos Tversky (20).

The names and latest institutional affiliations of all those mentioned six times or more are shown in Table 4. A tiny number of scholars are acknowledged relatively often; the great majority rarely if ever (see Table 5). The power curve in Figure 3 is characteristic of such distributions (Cronin, 1995, p. 56, p. 76; Davis & Cronin, 1993). Most of these individuals are contemporary notables rather than historic grandees, which is only to be expected given the documented growth over time in the rate of acknowledgment in *Psychological Review*. Not surprisingly, the list includes three editors of the journal; Estes, Solomon, and Warren.

Stylistics of Acknowledgment

Acknowledgments in early issues of *Psychological Review* were distributed throughout the text and footnotes of the articles in which they occurred. By 1930 acknowledgments were typically situated in footnotes, and by the 1950s these appeared most often as the first footnote on the first page of an article. Formality of address declined over time. The first acknowledgment that identified a person without using a title (Mr., Professor, etc.) occurred in 1942; by 1970 the use of titles was largely abandoned. The first moral acknowledgment did not occur until 1973, and moral acknowledgments were rare thereafter.

Length and specificity of acknowledgment increased over time as authors apparently attempted to acknowledge everyone who might have had any influence upon the final draft of the article. By the late 1970s it became common to thank anonymous referees as well. For example, the 1992 statement, shown in Appendix 2 as the example of a conceptual acknowledgment, mentions 54 individuals and “four anonymous reviewers.” Even with thanks for every possible contribution, by the mid-1970s authors were taking great pains to absolve those whom they acknowledged from responsibility for the article as published: “to all individuals who encouraged our work gently, who argued with us avidly about its interpretation, or who supplied corrections to earlier versions of this article unsparingly, we offer our great thanks” (v. 101, p. 129). The occasional *memento mori* is also to be found: “I would like to express my intellectual indebtedness to the memory of John Thibaut, whose generosity and gentle encouragement will be greatly missed” (v. 100, p. 609). Or, “I wish to acknowledge my appreciation and debt to the late Israel Lieblich, who was a partner in my first steps in this area” (v. 94, p. 42).

Formulaic construction of all types of acknowledgments, especially for both conceptual and instrumental/ technical support, was common throughout the century. Acknowledgments typically used language that expressed sincere appreciation, thanks, or gratitude, or recorded a debt or obligation. While early acknowledgments tended to be effusive, using terms such as “deeply indebted,” “cordial thanks,” and “heartily appreciation,” more recent acknowledgments tended to be more specific in terms of the acknowledgees' actions: “for many privileges on the ward,” “for their unfailing cheerfulness,” “for Marigold Linton's living room floor” (v. 88, p. 1).

Actions for which authors typically acknowledged others were: kindness and courtesy, suggestions, encouragement, criticism, assistance, discussion, granting access, or reading a manuscript. Authors occasionally acknowledged individuals for calling something to their attention; a concept, an article, an experimental method, or result. Humor is sprinkled throughout these acknowledgments, *vide* the “living room floor” acknowledgment (above), the thanks to “everyone who ever thought about the hippocampus” (v. 92, p. 512), or the example of a moral acknowledgment in Appendix 2. Popular culture even enters the journal's pages with “Finally, we acknowledge a debt to Kurt Lewin [founding father of social psychology] and Kurt Cobain [lead singer of the grunge rock band Nirvana, who committed suicide], whose writings on the topics of causal explanation and paranoia, respectively, influenced our work” (v. 102, p. 331).

Mind

We identified a total of 1,850 research articles in *Mind*. The number of articles per decade varied over the course of the century: the low (130) was in the nineteen forties; the high (253) in the fifties (see Table 6). A quarter (25%) of all articles contained some form of acknowledgment, though the variation was wide, ranging from 3% in the twenties to 83% in the nineties (see Table 6). Significant growth occurred at end of the 20th century: in the last two decades the percentage of articles with acknowledgments rose from 27% (in the seventies) to 63% and 83%, respectively. The breakdown of acknowledgments by category is shown in Table 7. Conceptual (69%) is by far the most common, with editorial and financial accounting for 11% each. There were no financial acknowledgments in the first half of the century. Instrumental/technical and moral acknowledgments accounted for 4% and 1%, respectively. The overwhelming majority (98%) of the 1,850 articles were sole authored (see Table 8). The 34 multiple-authored articles involved a total of 36 co-authors. Figure 4 shows the ratio of single to co-authored articles for the entire century. There has been a notable increase in co-authorship rates in the second 50 years ($\chi^2 = 16.833$, $df=1$, $p<.001$).

We identified all those mentioned by name in two categories of acknowledgment: conceptual and instrumental/technical. This gave us a total of 1,535 names, of which 1,008 were unique. Most of those who were acknowledged were mentioned but once (795, or 79%). The most frequently acknowledged

individuals were Mark Sainsbury (25), David Lewis (21), and Simon Blackburn (20); Sainsbury and Blackburn were both editors of the journal. The names and latest institutional affiliations of all those mentioned five times or more are shown in Table 9. A tiny number of scholars are acknowledged relatively often; the great majority rarely if at all. Once again, the power curve in Figure 5 is characteristic of such frequency distributions.

Stylistics of Acknowledgment

The choice of words to acknowledge conceptual, instrumental, or technical assistance in *Mind* was consistent, with most authors drawing on a relatively constrained set of terms. Frequently occurring phrases were: “I am grateful to...,” “I am indebted to ...,” “I should/wish to thank ...,” or more recently, “Thanks to ...” In addition to indebtedness, many acknowledgments mentioned “owing” something to someone, or “benefiting” or “profiting” from someone. A less frequent, but not uncommon form of acknowledgment noted that someone had “suggested,” “pointed out,” or “drawn [the author's] attention to” something. This last form, as well as the “I owe this point to” occurred most often in a footnote acknowledging assistance with a particular line of reasoning or formulation of an argument. Until the 1970s general acknowledgments appeared most often in a footnote on the first page of the article. For the final quarter of the century acknowledgments that were not tied to specific points in the paper were placed as a footnote on the last page.

Early acknowledgments reflected the writing style of the day; for example “I wish to express here my gratitude to Prof. Müller and my appreciation of the liberality with which he placed many resources of his laboratory at my disposal” (v. 10, p. 52). The use of the title (most often Professor or Mr.) before the name was typical in the early part of the century; the first acknowledgment to give a name without a title appeared in 1940. The “I should like to/wish to thank...” form appeared consistently, while the less formal “Thanks to...” was first used in 1974.

Acknowledgments were rare in the early years of the 20th century, and only occasionally engaging.

However, an unusually verbose statement of gratitude appeared in 1900: “From some helpful criticisms which I owe to different logicians I gather that my recent contributions to this magazine contain certain obscurities; and the editor has kindly placed a few of its pages at my disposal in order to dispel them” (v. 9, p. 75). As the century wore on, acknowledgments became more specific: “I would like to thank Steve Humphrey for the raucous conversations that stimulated my interest in this topic” (v. 95, p. 445); and more colloquial, “Thanks to some good eggs: Jesse Prinz, John Richardson, Mark Sainsbury, and David Sanford” (v. 101, p. 403); even to including insider jokes: “Infinite improvements were effected by the sequence <Jack Copeland, Andre Gallois, Patrick Grim, James Hardy, Robert Koons, Graham Priest, Stephen Read, Neil Tennant, Stephen Yablo>“ (v. 107, p. 153).

Mind contributors were careful to acknowledge specific lines of argument or statements of a problem provided by others: “I owe to the assistance of Prof. Percy Nunn my restatement of Ockham, but of course this does not make him responsible for the cumbrous manner I have used” (v. 25, p. 508); “I owe this and the preceding case to C. J. Bryant and Martin Coles respectively. It must be acknowledged that I do not draw from these cases the conclusions they wished to draw” (v. 88, p. 168); “Dorothy Edgington has seen the present version of this paper, near enough, and disagrees with some of it. She doubts the importance - and even the existence - of the Opt-out Property, and rejects my separation of Zero from the Superzero Property. To my regret, I have been unable to address these matters within the confines of this paper; but my intellectual debt to her is profound” (v. 104, p. 353).

This example from 1999 demonstrates the importance of collegial interaction that has been frequently acknowledged in *Mind*: “At two places in this paper, I have remarked that Murali Ramachandran deserves credit for the final formulation of a component of the theory. Let me acknowledge once more the important role he played in the development of the ideas put forward here. I very much doubt whether I would have arrived at them alone ... Perhaps I should also note that he does not accept my theory and is developing his own!” (v. 108, p. 124).

Discussion and Conclusions

We examined all research articles published in two leading journals, *Psychological Review* and *Mind*, throughout the course of the twentieth century to determine the extent of co-authorship and sub-authorship collaboration. While these two journals may be both prestigious and persistent, we do recognize that a single journal may not be representative of the literature of an entire field. Our results should, therefore, be treated with caution, and the discussion which follows is appropriately restrained. The profiles that emerged from our study differed on a number of important dimensions, but also exhibited commonalities. Almost half (49%) of all articles published in *Psychological Review* contained an acknowledgment of some kind, compared with a quarter of the articles in *Mind*. The intensity of acknowledgment in both cases picks up dramatically in the latter decades of the century (see Tables 1 and 6). In the case of *Psychological Review*, we would note how, in the *APA Manual*, mention of acknowledgment practice increased from 1967 onward, while since the sixties, there has been a surge in the number of *Psychological Review* articles that contain an acknowledgment of some kind. A broadly comparable upswing can be observed in *Mind*, dating from the eighties.

The importance of financial support to contemporary psychology is evident from the growth in financial acknowledgments witnessed during the sixties (see Table 2). This is presumably a reflection of the post-war growth and professionalization of the field noted earlier. It is also linked to the fact that as the discipline has “hardened,” it has been able to secure greater amounts of federal support. Moreover, as the scale and complexity of some psychological research have grown, the need for collaboration, both formal and informal, has also grown commensurately. This difference is most compellingly shown in the data on co-authorship trends (compare Figures 4 and 7). Over the course of the century, 74% of psychology and 98% of philosophy papers, respectively, were written by a single author. In addition, *Psychological Review* had 139 articles with three or more authors, while *Mind* had only one article with more than two authors; nine and three authors were the respective maxima. However, if we look at the last few decades of the century only, a quite different picture emerges—at least as far as *Psychological Review* is concerned. By the eighties, co-authorship had become the norm in psychology, and while the numbers were considerably smaller, co-authoring in philosophy was also significantly more common. Psychological research (as

reflected in the discipline's publication practices) had become much more of a collective activity, while philosophers were more inclined to "bowl alone."

In a way, the data in Figure 7 support the popular image of humanists (philosophers in this case) as independent scholars, working, or at least writing, in relative isolation. The socio-cognitive differences between the two disciplines are further suggested by the relative frequency with which instrumental/technical acknowledgments were made over the course of the century; 25% of articles in *Psychological Review* and 4% in *Mind* included this category of acknowledgment. As psychology has "hardened" as a subject over the decades, and become more quantitative and experimental in character, it is become commonplace to modularize research projects and allocate discrete tasks to different individuals. The work of philosophers is rather different; typically they wrestle much of the time, privately, with abstract issues and theories, not with problems, subjects, trends, and data located in the real world. At the risk of oversimplifying, the interior (subjective) world of philosophy contrasts strongly with the external (objective) world of contemporary psychology. And, in fact, the "lone wolf" image is (largely) reinforced by the data in Table 7. Until the end of the seventies, the percentage of *Mind* articles containing a conceptual acknowledgment never rose above 19%. Either philosophers must have been gleaned little from their peers, or they simply did not feel a need to record such socio-cognitive interactions. Yet, in the subsequent two decades, the number of articles containing conceptual acknowledgments grew to 56% and 83%, a striking upswing, and one that is hard to explain based on our earlier, brief history of the subject. These data suggest, if we may paraphrase John Donne, that in the land of philosophers no man is a scholastic island, entire unto itself.

One, thus, has to ask whether this is part of a broad, cross-disciplinary trend to collaboration, or, alternatively, evidence of a growing determination by scholars to record with greater meticulousness the various forms of sub-authorship interventions that have previously gone unremarked? It may well be that authors, generally speaking, have become more attuned to the etiquette of acknowledgment, in part, at least, as a result of the growing amount of public debate on subjects such as credit, attribution, and plagiarism in contemporary research and scholarship. Whatever the explanation, the importance of

acknowledgement to our understanding of how scholars interact with their peers and sundry others, both formally and informally, cannot be gainsaid.

Acknowledgment

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Appendix 1: American Psychological Association *Publication Manual* Statements on

Acknowledgments

“Revised Edition” 1967 (manual is 61 pages)

From 4.71 Footnotes; Numbering and placement (page 29) - 59 words

- a. Acknowledgment of support. A footnote naming the sponsor of a grant or contract, the grant or contract number, acknowledgment, and occasionally the location is noted to the title.
- b. Acknowledgment of assistance and change of affiliation. The superscript arabic number is placed after the last author’s name for a general acknowledgment of help in preparation of the manuscript.

Second Edition, 1974 (136 pages)

From 3.63 Kinds of Footnotes (page 68) - 57 words

Acknowledgment and author identification. Standard footnotes of acknowledgment and author identification appear on the first page of an article. These notes should:

- acknowledge the basis of a study (e.g., doctoral dissertation or paper presented at a meeting)
- acknowledge a grant or other financial support
- acknowledge scholarly review or assistance in conducting the study or preparing the manuscript

Third Edition, 1983 (208 pages)

From 3.85 Author Identification Notes (page 106) - 50 words

Author identification notes appear with each printed article. These notes should:

- acknowledge (a) the basis of a study (e.g., doctoral dissertation or paper presented at a meeting, (b) a grant or other financial support, and (c) any scholarly review or assistance in conducting the study or preparing the manuscript

Fourth Edition, 1994 (368 pages)

From 3.89 Author Note (pages 164-165) - 149 words

Second paragraph: acknowledgments. Identify grants or other financial support for your study; it is not necessary to identify the recipient of the grant or precede grant numbers by *No.* or *#*. Next, acknowledge colleagues who assisted you in conducting the study or critiquing your manuscript (see section 6.05 for a discussion of criteria for authorship). Do not acknowledge the persons routinely involved in the review and acceptance of manuscripts – peer reviewers or editors, associate editors, and consulting editors of the journal in which the article is to appear (if you would like to acknowledge a specific idea raised by a reviewer, do so in the text where the idea is discussed). In this paragraph you may also explain any special agreements concerning authorship, such as if you and your colleagues contributed equally to the study. You may end this paragraph with thanks for personal assistance, such as for manuscript preparation.

Fifth Edition, 2001 (439 pages)

From 3.89 Author Note (pages 203-204) - 151 words

Third paragraph: Acknowledgments. Identify grants or other financial support (and the source, if appropriate) for your study; do not precede grant numbers by *No.* or *#*. Next, acknowledge colleagues who assisted you in conducting the study or critiquing your manuscript (see the sub-section on publication credit in section 8.05 for a discussion of criteria for authorship). Do not acknowledge the persons routinely involved in the review and acceptance of manuscripts – peer reviewers or editors, associate editors, and consulting editors of the journal in which the article is to appear. (If you would like to acknowledge a specific idea raised by a reviewer, do so in the text where the idea is discussed.) In this paragraph you may also explain any special agreements concerning authorship, such as if you and your colleagues contributed equally to the study. You may end this paragraph with thanks for personal assistance, such as for manuscript preparation.

Appendix 2: Examples of Categories of Acknowledgment

Moral

“And last but by no means least, I should like to thank my darling Sarah-Jane for her brilliance, fun, and 4 years of hard work down at Mrs. McDog's Farm as her dazzling capacity for pretense unfolded.”

Financial

“Preparation of this paper was supported by NSF grant BNS-76-15024 to D. E. Rumelhart, by NSF grant BNS-76-24062 to J. L. McClelland, and by the Office of Naval Research under contract N00014-79-C-0323. (1982).”

Editorial

“Irving Singer has read an earlier draft of the manuscript and corrected a number of sentences and phrases which were not idiomatic.”

Instrumental/Technical

“We thank Steve and Sharon Roe for suggesting the name Mr. Chips for the computer simulation, Steve Mansfield for computing the standard deviation of letter widths in several fonts, Paul Beckmann for help with graphics, and Andrew Luebker for help in solving programming bugs.”

Conceptual

“A number of people read earlier drafts of this article and made many valuable comments: Justin Aronfreed, John Baron, John Cacioppo, Margaret Clark, Robyn Dawes, Barbara Fiske, Donald Fiske, Susan Fiske, Michael Goodwin, Jon Haidt, V. Lee Hamilton, Nick Haslam, Shinobu Kitayama, Ray Jackendoff William Lambert, R. Duncan Luce, John Lucy, Hazel Markus, Joan Miller, Judson Mills, Richard Nisbett, Emiko Ohnuki-Tierney, Paul Rozin, John Sabini, Edward E. Sampson, Fred Strodtbeck, Barry Schwartz, Harry Triandis, Stanley Udy, Robert Weller, and four anonymous reviewers. The work that resulted in this article was stimulated by many discussions with friends and teachers, including Assaad Azzi, Mihaly Csikzentmihalyi, John Comaroff, Jean Comaroff, Siri Dulaney, Barbara Fiske, Donald Fiske, Susan Fiske, Suzanne Gaskins, Lila Gleitman, Lisa Jaycox, Donald Levine, John Lucy, Kathryn Mason, Margaret Meibohm, Paul Rozin, John Sabini, Shalom Schwartz, Richard Shweder, Scott Weinstein, and Harold Zullow. These people read earlier work and made valuable comments on it, as did a number of others: Arjun Appadurai, Sandra Barnes, Muriel Bell, Donald Campbell, Roy DAndrade, Amitai Etzioni, Charles R. Gallistel, Walter Goldfrank, Michael Kelly, Arthur Kleinman, Nicholas Maxwell, Clark R. McCauley, Susan Milmoie, Pauline Peters, Charlie Piot, David Premack, Rena Repetti, and Deborah Stearns. My thanks to all of them.”

Unknown

“Also I wish to acknowledge a more indirect debt to the influence of President James R. Angell.”

Reader

“From the University of California Psychological Laboratory:
Communicated by Joseph Stratton
The effect of verbal suggestion upon the estimation of linear magnitudes.
By Joseph E. Brandt”

Note: Our interpretation is that the paper was read by someone other than the author, perhaps for health reasons or because of the difficulty of travel during the early years of the century. This convention was peculiar to *Psychological Review*. We found examples from 1900-1910, with the last occurrence in 1937. This category represents 0.53% of the total acknowledgments in *Psychological Review*. It always takes the form of a header “Communicated by.” This is located in the area either just above the title, or just below the author statement.

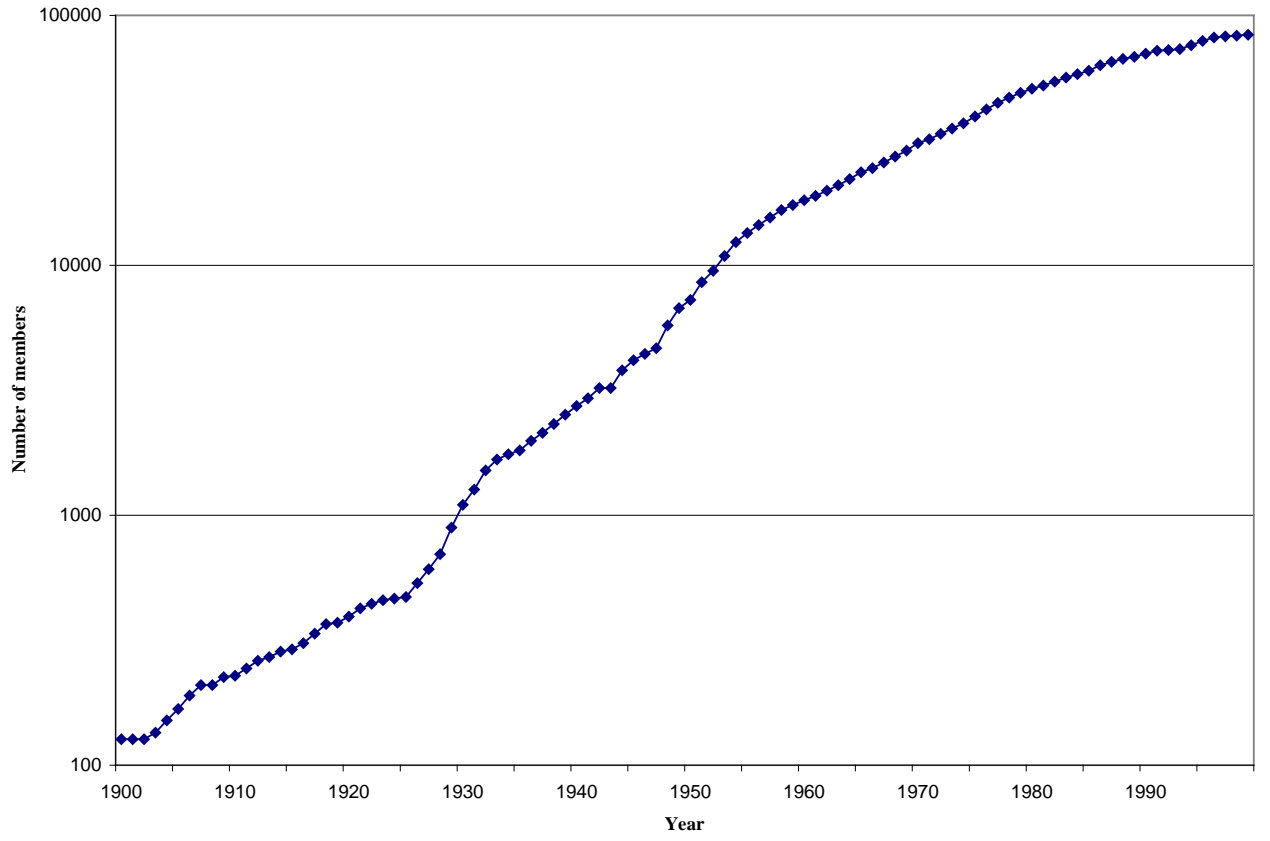


Figure 1. American Psychological Association membership, 1900-1999

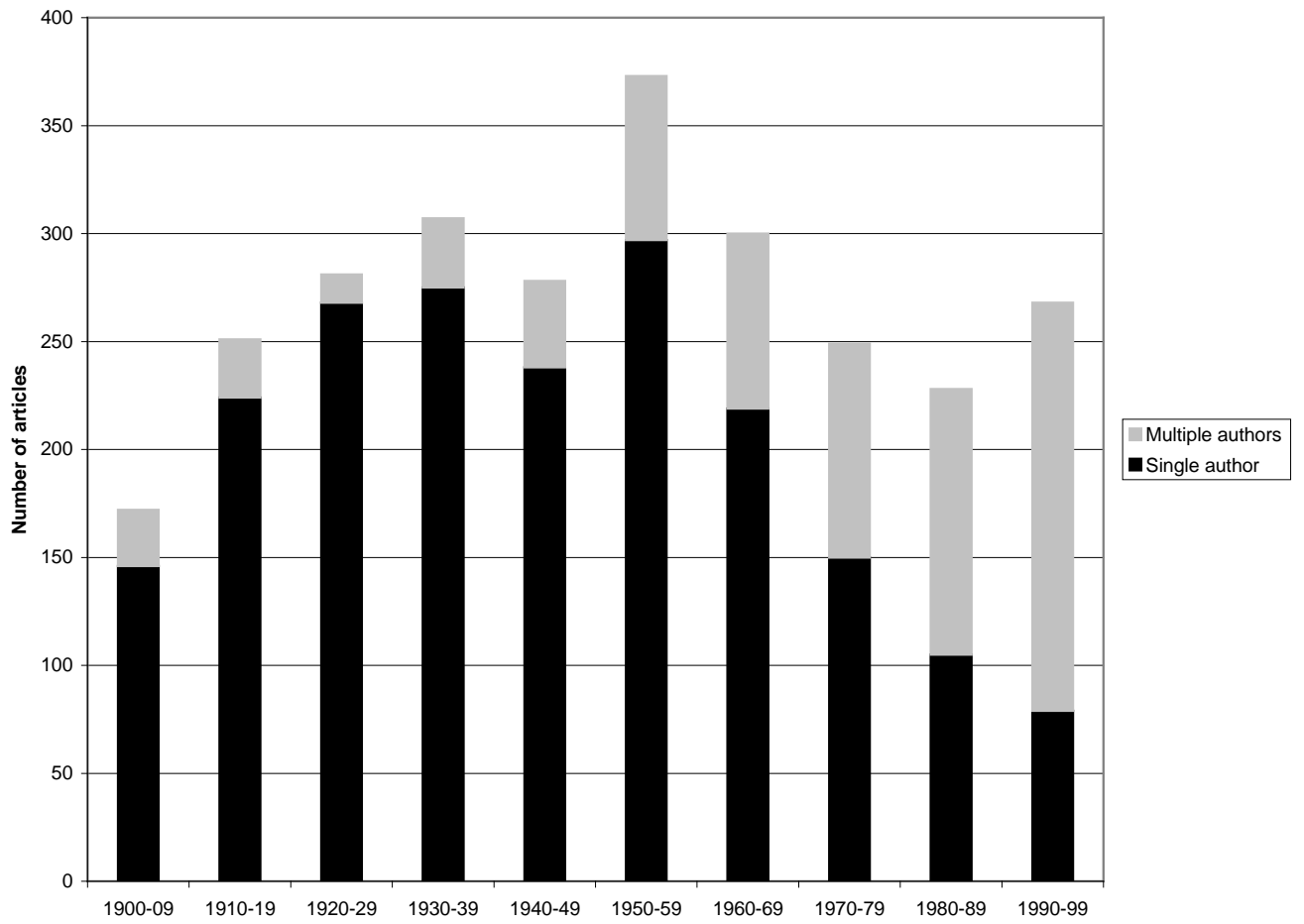


Figure 2. *Psychological Review*: Single- and multiple-author papers

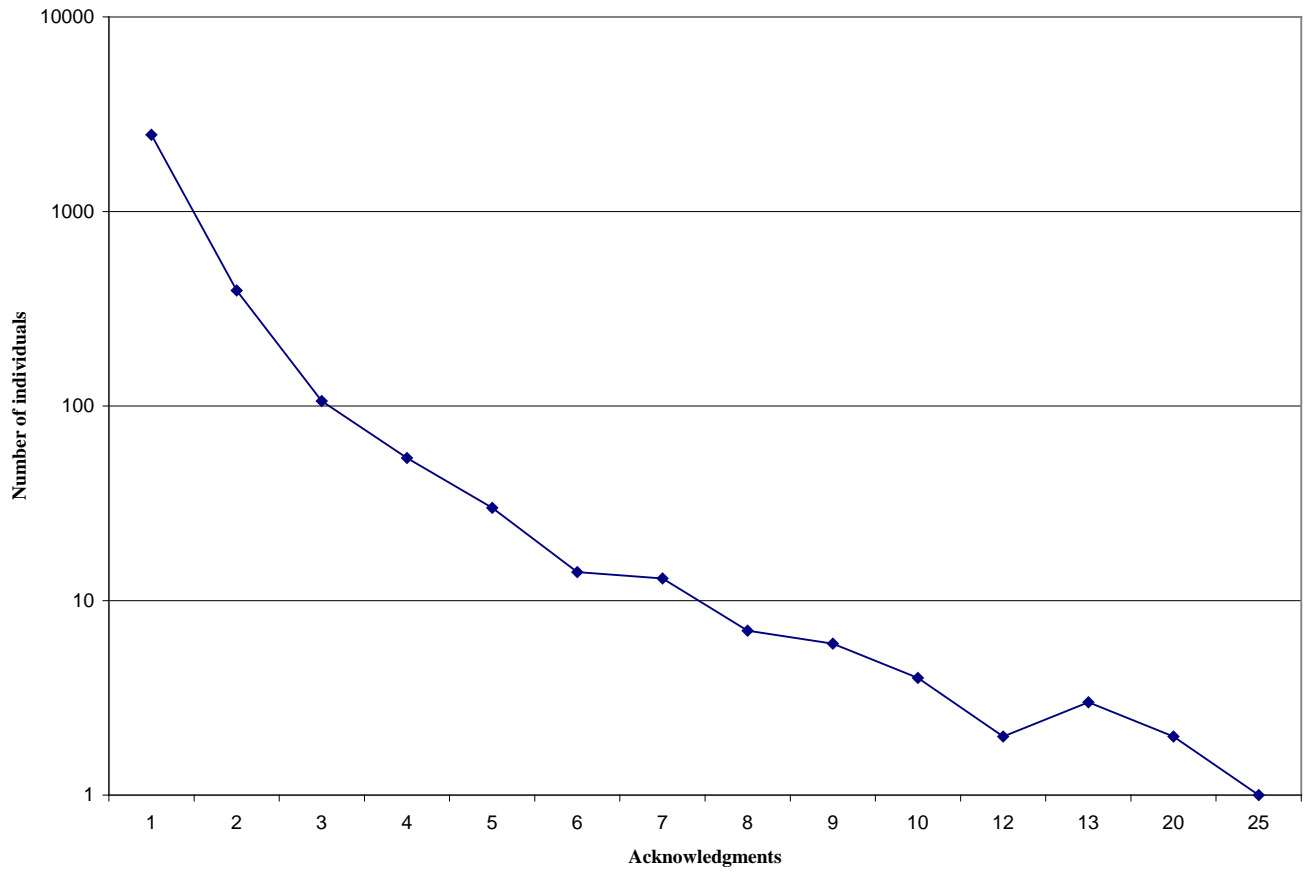


Figure 3. *Psychological Review*: Frequency distribution of acknowledgments

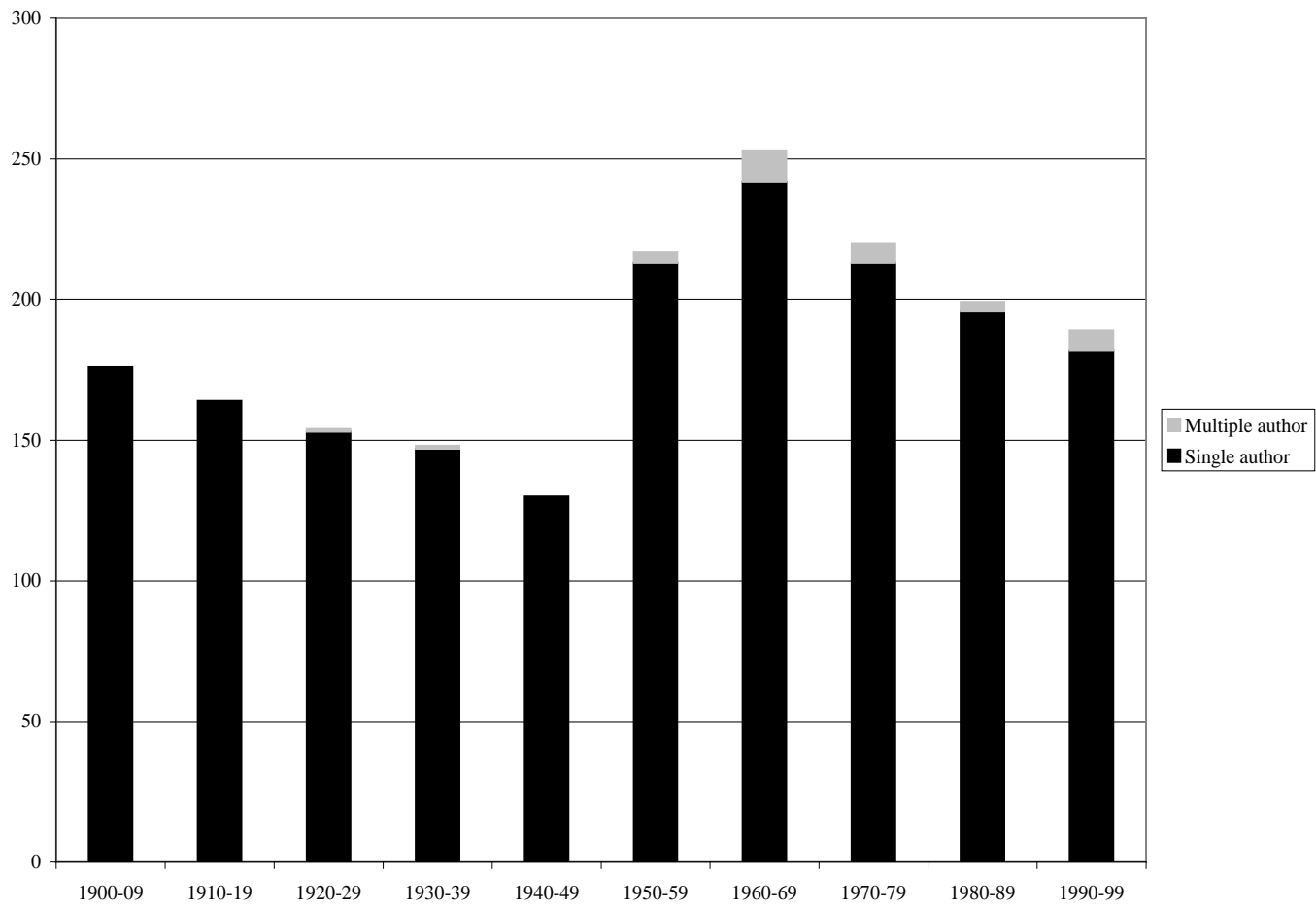


Figure 4. *Mind* : Single- and multiple author papers

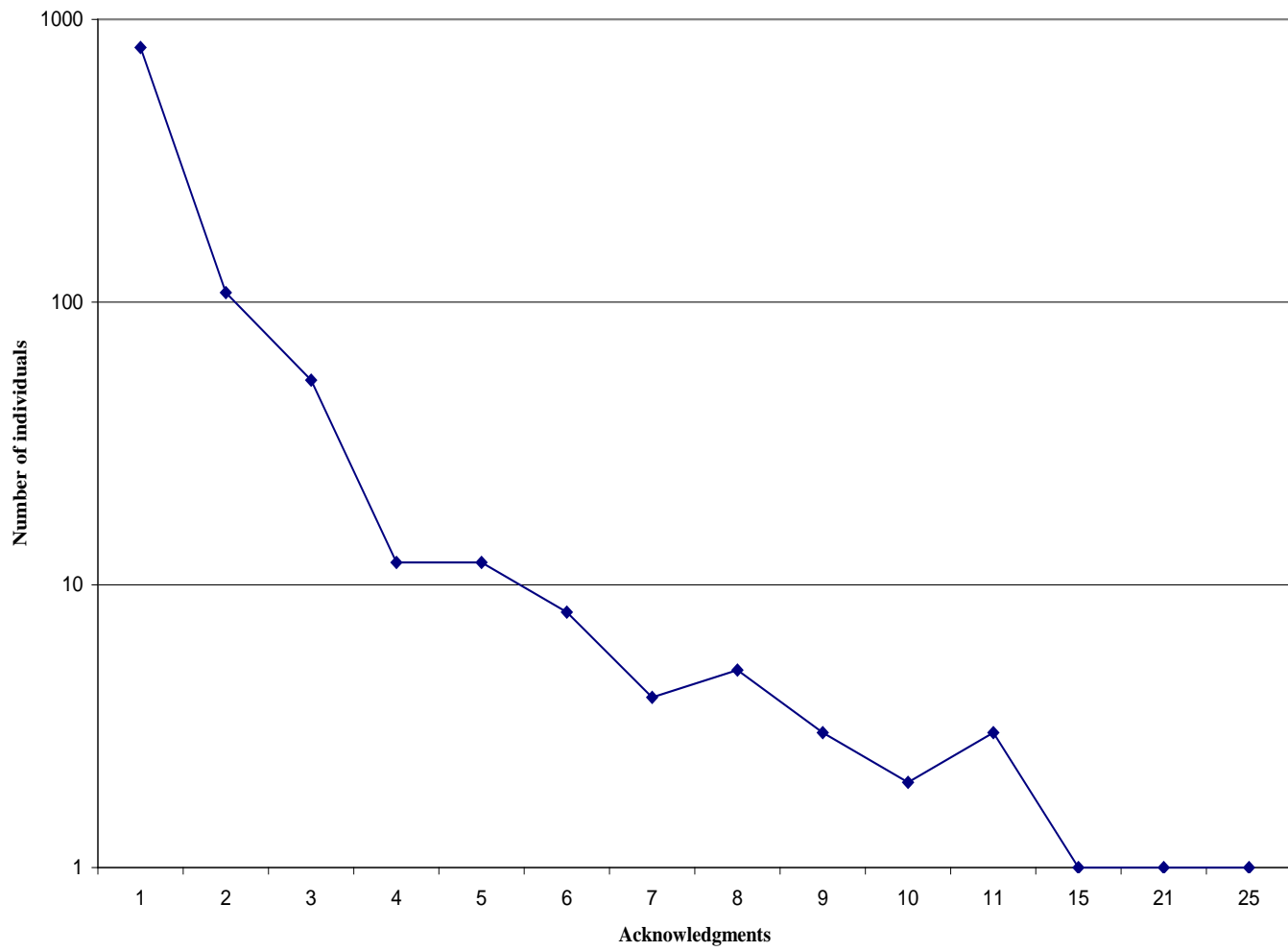


Figure 5. *Mind*: Frequency distribution of acknowledgments

acknowledgments	21	22	24	13	17	23	22	25	23	31	221
Percentage	100%	100%	96%	93%	94%	100%	100%	93%	96%	97%	97%
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Articles	26	26	29	33	21	27	27	30	26	23	268
Articles with acknowledgments	26	23	28	32	19	26	24	27	24	23	252
Percentage	100%	88%	97%	97%	90%	96%	89%	90%	92%	100%	94%

Table 1. *Psychological Review*: Distribution of articles and acknowledgments
Total 2,707 articles, with acknowledgments, 1,346 (50%).

	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	Total	Percentage of all acknowledgments
Conceptual	5	12	16	24	38	102	120	127	161	155	760	31%
percent of articles	3%	5%	6%	8%	14%	27%	40%	51%	71%	58%	28%	
Editorial	0	4	1	10	9	31	31	48	43	79	256	11%
percent	0%	2%	0.4%	3%	3%	8%	10%	19%	19%	29%	10%	
Financial	0	2	6	8	12	63	184	201	173	214	863	36%
percent	0%	0.8%	2%	3%	4%	17%	61%	80%	76%	80%	32%	
Instrument/Technical	18	52	12	16	16	29	90	91	69	100	493	20%
percent	11%	21%	4%	5%	6%	8%	30%	37%	30%	37%	18%	
Moral	0	0	0	0	0	2	2	2	2	1	9	0.4%
percent	0%	0%	0%	0%	0%	1%	1%	1%	1%	0.4%	0.3%	
Reader	10	0	1	1	1	0	0	0	0	0	13	0.6%
percent	6%	0%	0.4%	0.3%	0.4%	0%	0%	0%	0%	0%	1%	
Unknown	4	2	4	1	3	3	3	0	2	4	26	1%
percent	2%	1%	1%	0.3%	1%	1%	1%	0%	1%	2%	1%	
Total	37	59	40	60	79	230	430	469	450	553	2418	100%

Table 2. *Psychological Review*: Categories of acknowledgment

Year	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	Total
Number of articles	23	20	15	13	17	18	13	16	15	22	172
Single authored	19	13	11	11	16	15	13	15	14	19	146
Multiple authored	4	7	4	2	1	3	0	1	1	3	26
Year	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	
Number of articles	22	18	21	24	30	29	25	28	26	28	251
Single authored	21	18	17	19	28	27	24	26	25	19	224
Multiple authored	1	0	4	5	2	2	1	2	1	9	27
Year	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	
Number of articles	29	22	29	28	31	28	27	28	31	28	281
Single authored	24	22	29	28	31	28	26	25	30	25	268
Multiple authored	5	0	0	0	0	0	1	3	1	3	13
Year	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
Number of articles	31	33	29	32	30	32	30	32	23	35	307
Single authored	30	29	28	26	26	29	27	31	19	30	275
Multiple authored	1	4	1	6	4	3	3	1	4	5	32
Year	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	
Number of articles	31	33	37	26	25	25	23	20	24	34	278
Single authored	28	30	31	25	21	22	19	18	18	26	238
Multiple authored	3	3	6	1	4	3	4	2	6	8	40
Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	
Number of articles	32	37	47	48	37	41	38	32	34	27	373
Single authored	30	20	40	37	30	32	33	26	30	19	297
Multiple authored	2	17	7	11	7	9	5	6	4	8	76
Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
Number of articles	26	25	32	30	31	26	31	31	31	37	300
Single authored	23	12	26	22	27	17	20	22	24	26	219
Multiple authored	3	13	6	8	4	9	11	9	7	11	81
Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	
Number of articles	33	30	28	26	26	21	24	17	24	20	249
Single authored	24	20	18	14	14	14	15	10	13	8	150
Multiple authored	9	10	10	12	12	7	9	7	11	12	99
Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	
Number of articles	21	22	25	14	18	23	22	27	24	32	228
Single authored	10	11	16	4	9	12	10	13	8	12	105
Multiple authored	11	11	9	10	9	11	12	14	16	20	123
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Number of articles	26	26	29	33	21	27	27	30	26	23	268
Single authored	5	14	10	12	2	6	9	10	7	4	79
Multiple authored	21	12	19	21	19	21	18	20	19	19	189

Table 3. *Psychological Review*: Single and multiple authorship
Total 2,707 articles, of which 2001 (74%) are single authored.

Number of acknowledgments	Name and affiliation
25	R. Duncan Luce, University of California at Irvine
20	William K. Estes, Indiana University [<i>PR</i> Editor, 1977-1982]
20	Amos Tversky, Stanford University
13	Daniel Kahneman, Princeton University
13	Roger N. Shepard, Stanford University
13	Richard L. Solomon, University of Pennsylvania [<i>PR</i> Editor, 1959-1964]
12	Hastie Reid, University of Chicago
12	Kenneth W. Spence, University of Texas
10	John R. Anderson, Carnegie Mellon University
10	Donald E. Broadbent, University of Cambridge
10	David H. Krantz, Columbia University
10	Edward E. Smith, University of Michigan
10	Saul S. Sternberg, University of Pennsylvania
9	Robyn M. Dawes, Carnegie Mellon University
9	James L. McClelland, Carnegie Mellon University
9	Douglas Medin, Northwestern University
9	Bennett Murdock, University of Toronto
9	Roger Ratcliff, Northwestern University
9	R. A. Rescorla, University of Pennsylvania
8	S.S. (Stanley Smith) Stevens, Harvard University
8	John W. Atkinson, University of Michigan
8	Ward Edwards, University of Southern California
8	Eugene H. Galanter, Columbia University
8	Julian Hochberg, Columbia University
8	Walter Kintsch, University of Colorado Boulder
8	Donald Norman, University of California San Diego
8	Robert Nosofsky, Indiana University
8	Endel Tulving, University of Toronto
7	R.C. Bolles, SRI International
7	Jerry Busemeyer, Indiana University
7	Clyde H. Coombs, University of Michigan
7	Donald O Hebb, McGill University
7	Keith Holyoak, University of California Los Angeles
7	James Johnston, NASA Ames Research Center
7	Carol Krumhansl, Cornell University
7	Frederick Mosteller, Harvard University
7	Michael I. Posner, Cornell University
7	Paul Rozin, University of Pennsylvania
7	David. E. Rumelhart, Stanford University

7	Richard Shiffrin, Indiana University
7	Edward C. Tolman, University of California Berkeley [APA President, 1937]
6	Robert P. Abelson, Yale University
6	Robert R. Bush, University of Pennsylvania
6	Gary Dell, University of Illinois at Urbana-Champaign
6	Heinz Heckhauser, Max Planck Institut für psychologische Forschung, Munich
6	Philip N. Johnson-Laird, Princeton University
6	Gordon Logan, McGill University
6	Allen Newell, Carnegie Mellon University
6	Richard Nisbett, University of Michigan
6	Lee D. Ross, Stanford University
6	Edward E. Smith, University of Michigan
6	James Townsend, Indiana University
6	Anne Treisman, Princeton University
6	Thomas S. Wallsten, University of Maryland
6	Howard C. Warren, Princeton University [APA President, 1913; <i>PR</i> Editor, 1901-34]
6	Robert B. Zajonc, Stanford University

Table 4. *Psychological Review*: Names and affiliations of those acknowledged 6 or more times (n=56)

Number of acknowledgments	Number of individuals
25	1
24	0
23	0
22	0
21	0
20	2
19	0
18	0
17	0
16	0
15	0
14	0
13	3
12	2
11	0
10	4
9	6
8	7
7	13
6	14
5	30
4	54
3	106
2	392
1	2477

Table 5. *Psychological Review*: Frequency of acknowledgment

Year	190	190	190	190	190	190	190	190	190	190	Total
Articles	22	16	14	18	19	21	16	17	16	17	176
Articles with acknowledgment	3	3	0	1	1	0	0	2	1	1	12
Percent	14%	19%	0%	6%	5%	0%	0%	12%	6%	6%	7%
Year	191	191	191	191	191	191	191	191	191	191	
Articles	16	16	17	16	16	15	15	18	19	16	164
Articles with acknowledgment	0	2	0	0	0	1	2	1	1	1	8
Percent	0%	13%	0%	0%	0%	7%	13%	6%	5%	6%	5%
Year	192	192	192	192	192	192	192	192	192	192	
Articles	15	13	14	17	15	18	14	16	16	16	154
Articles with acknowledgment	1	0	2	0	1	0	0	1	0	0	5
Percent	7%	0%	14%	0%	7%	0%	0%	6%	0%	0%	3%
Year	193	193	193	193	193	193	193	193	193	193	
Articles	12	16	15	13	16	15	14	15	15	17	148
Articles with acknowledgments	1	3	0	1	2	1	0	1	1	2	12
Percent	8%	19%	0%	8%	13%	7%	0%	7%	7%	12%	8%
Year	194	194	194	194	194	194	194	194	194	194	
Articles	15	13	12	11	11	13	16	10	14	15	130
Articles with acknowledgments	3	2	0	0	1	2	3	3	2	2	18
Percent	20%	15%	0%	0%	9%	15%	19%	30%	14%	13%	14%
Year	195	195	195	195	195	195	195	957	195	195	
Articles	19	24	24	18	22	19	22	21	24	24	217
Articles with acknowledgments	3	4	3	0	2	3	4	1	2	2	24
Percent	16%	17%	13%	0%	9%	16%	18%	5%	8%	8%	11%
Year	196	196	196	196	196	196	196	196	196	196	
Articles	23	23	22	25	29	23	25	29	28	26	253
Articles with acknowledgments	2	3	5	4	3	1	4	5	4	5	36
Percent	9%	13%	23%	16%	10%	4%	16%	17%	14%	19%	14%
Year	197	197	197	197	197	197	197	197	197	197	
Articles	24	24	24	25	22	24	16	20	20	21	220
Articles with acknowledgments	3	3	4	5	7	10	3	7	10	7	59
Percent	13%	13%	17%	20%	32%	42%	19%	35%	50%	33%	27%
Year	198	198	198	198	198	198	198	198	198	198	
Articles	20	19	19	19	19	22	18	22	21	20	199
Articles with acknowledgments	11	14	10	8	7	14	15	15	17	15	126

Percent	55%	74%	53%	42%	37%	64%	83%	68%	81%	75%	63%
Year	199	199	199	199	199	199	199	199	199	199	
Articles	21	21	27	14	15	15	14	21	24	17	189
Articles with acknowledgments	18	14	22	10	13	14	9	19	22	16	157
Percent	86%	67%	81%	71%	87%	93%	64%	90%	92%	94%	83%

Table 6. *Mind*: Distribution of articles and acknowledgments
Total 1,850 articles, with acknowledgments, 457 (25%).

	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	Total	Percentage of all acknowledgments
Conceptual	8	6	5	9	15	20	18	42	112	157	392	69%
percent of articles	5%	4%	3%	6%	12%	9%	7%	19%	56%	83%	21%	
Editorial	2	2	0	2	2	2	17	22	9	4	62	11%
Percent	1%	1%	0%	1%	2%	1%	7%	10%	5%	2%	3%	
Financial	0	0	0	0	0	1	6	5	25	26	63	11%
Percent	0%	0%	0%	0%	0%	0%	2%	2%	13%	14%	3%	
Instrument/Technical	3	0	1	2	4	0	2	4	5	4	25	4%
Percent	2%	0%	1%	1%	3%	0%	1%	2%	3%	2%	1%	
Moral	0	0	1	0	1	1	0	1	2	0	6	1%
Percent	0%	0%	1%	0%	1%	0%	0%	0%	1%	0%	0%	
Unknown	0	0	0	0	2	1	0	4	15	1	23	4%
Percent	0%	0%	0%	0%	2%	0%	0%	2%	8%	1%	1%	
Total	13	8	7	13	24	25	43	78	168	192	571	

Table 7. *Mind*: Categories of acknowledgment

Year	190	190	190	190	190	190	190	190	190	190	Total
Number of	22	16	14	18	19	21	16	17	16	17	176
Single authored	22	16	14	18	19	21	16	17	16	17	176
Multiple	0	0	0	0	0	0	0	0	0	0	0
Year	191	191	191	191	191	191	191	191	191	191	
Number of	16	16	17	16	16	15	15	18	19	16	164
Single authored	16	16	17	16	16	15	15	18	19	16	164
Multiple	0	0	0	0	0	0	0	0	0	0	0
Year	192	192	192	192	192	192	192	192	192	192	
Number of	15	13	14	17	15	18	14	16	16	16	154
Single authored	15	12	14	17	15	18	14	16	16	16	153
Multiple	0	1	0	0	0	0	0	0	0	0	1
Year	193	193	193	193	193	193	193	193	193	193	
Number of	12	16	15	13	16	15	14	15	15	17	148
Single authored	12	16	15	13	16	14	14	15	15	17	147
Multiple	0	0	0	0	0	1	0	0	0	0	1
Year	194	194	194	194	194	194	194	194	194	194	
Number of	15	13	12	11	11	13	16	10	14	15	130
Single authored	15	13	12	11	11	13	16	10	14	15	130
Multiple	0	0	0	0	0	0	0	0	0	0	0
Year	195	195	195	195	195	195	195	195	195	195	
Number of	19	24	24	18	22	19	22	21	24	24	217
Single authored	19	24	21	18	22	19	22	21	23	24	213
Multiple	0	0	3	0	0	0	0	0	1	0	4
Year	196	196	196	196	196	196	196	196	196	196	
Number of	23	23	22	25	29	23	25	29	28	26	253
Single authored	22	23	21	25	29	21	24	27	26	24	242
Multiple	1	0	1	0	0	2	1	2	2	2	11
Year	197	197	197	197	197	197	197	197	197	197	
Number of	24	24	24	25	22	24	16	20	20	21	220
Single authored	23	23	24	24	22	24	16	20	20	17	213
Multiple	1	1	0	1	0	0	0	0	0	4	7
Year	198	198	198	198	198	198	198	198	198	198	
Number of	20	19	19	19	19	22	18	22	21	20	199
Single authored	20	19	19	19	19	22	18	22	19	19	196
Multiple	0	0	0	0	0	0	0	0	2	1	3
Year	199	199	199	199	199	199	199	199	199	199	
Number of	21	21	27	14	15	15	14	21	24	17	189
Single authored	20	21	27	13	15	15	14	19	22	16	182
Multiple	1	0	0	1	0	0	0	2	2	1	7

Table 8. *Mind*: Single and multiple authorship
Total 1,850 articles, of which 1,816 (98%) are single authored.

Number of acknowledgments	Name and affiliation
25	Mark Sainsbury, Kings College London [<i>Mind</i> Editor, 1991-1999]
21	David Lewis, Princeton University
15	Simon Blackburn, University of North Carolina [<i>Mind</i> Editor 1984-1990]
11	Frank Jackson, Australian national University
11	D. Hugh Mellor, University of Cambridge
11	Philip Pettit, Princeton University
10	John Campbell, University of Oxford
10	Crispin Wright, University of St. Andrews
9	Martin Davies, Australian National University
9	Lloyd Humberstone, Monash University
9	Peter Menzies, Macquarie University
8	Paul Boghossian, New York University
8	Mark Crimmins, Stanford University
8	Christopher Peacocke, New York University
8	Michael Martin, University College London [<i>Mind</i> Editor, 2000 to date]
8	Timothy Williamson, University of Oxford
7	Robert Audi, University of Nebraska - Lincoln
7	Donald Davidson, University of California, Berkeley
7	Michael Dummett, University of Oxford
7	Gabriel Segal, King's College, London
6	Kent Bach, San Francisco State University
6	Tim Crane, University College London
6	Jerry Fodor, Rutgers University
6	Mark Johnston, Princeton University
6	Stephen Schiffer, New York University
6	Michael Smith, Australian National University
6	Neil Tennant, Ohio State University
6	David Wiggins, University of Oxford
5	Jeremy Butterfield, University of Oxford
5	Jonathan Dancy, University of Reading
5	Graeme Forbes, Tulane University
5	Jonathan Lowe, University of Durham
5	William Lycan, University of North Carolina - Chapel Hill
5	Philip Quinn, University of Notre Dame
5	Gilbert Ryle, University of Oxford [<i>Mind</i> Editor, 1948-1971]
5	Sydney Shoemaker, Cornell University
5	J.J.C. Smart, Australian National University

5	Scott Soames, Princeton University
5	Michael Tooley, University of Colorado at Boulder
5	Peter Vallentyne, Virginia Commonwealth University

Table 9. *Mind*: Names and affiliations of those acknowledged 5 or more times (n=40)

Number of acknowledgments	Number of individuals
25	1
24	0
23	0
22	0
21	1
20	0
19	0
18	0
17	0
16	0
15	1
14	0
13	0
12	0
11	3
10	2
9	3
8	5
7	4
6	8
5	12
4	12
3	53
2	108
1	795

Table 10. *Mind*: Frequency of acknowledgment