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Simone Mazauric, *Fontenelle et l'invention de l'histoire des sciences à l'aube des Lumières*. Paris: Librairie Arthème Fayard, 2007. 399 pp. Notes and bibliography. €24 (pb). ISBN 978-2-213-63306-0.

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Why is there so little scholarship on the life and work of Bernard le Bovier de Fontenelle (1657-1757)? Certainly the accomplishments of the man do not explain this neglect, for Fontenelle was by all accounts an intellectual superstar. He was launched into his career in his early twenties through his sparkling reviews, poems, and essays published in Donneau de Visé's pioneering *mondain* periodical *Le Mercure galant*. For the next seventy-five years his reputation for *esprit* and literary panache never waned. He further produced a striking range of influential texts, from his widely popular *Entretiens sur la pluralité des mondes habités*, one of the most popular and commercially successful books in any genre from this period, to his *Histoire des oracles*, an important libertine tract that contributed to the currents of radical philosophy and politics of the time. He was also a serious mathematician, publishing a dense treatise on the philosophy of infinitesimal analysis in 1727 while also becoming the first Frenchman ever to hold chairs in both the *Académie française* and the *Académie royale des sciences* simultaneously. While unquestionably prolific and influential as a writer, Fontenelle also worked during a crucial moment in European intellectual history, the period that Paul Hazard famously described as "la crise de la conscience européenne." "Quel contraste! Quel brusque passage ... La majorité des Français pensait comme Bossuet: tout d'un coup, les Français pensent comme Voltaire: c'est une révolution."<sup>[1]</sup> Fontenelle reached intellectual maturity around 1680 at the very beginning of this upheaval, and his work figures prominently in Hazard's account of the rebellions that unseated the traditional values of Bossuet. Yet Fontenelle also lived well beyond the end of Hazard's crisis, and he ended his life fighting against Voltaire as well. So given his nearly century-long record of vital intellectual work directed toward some of the major intellectual trends of his day, why does Fontenelle remain so remarkably understudied?

The magisterial scholarship of Alain Niderst is the exception that proves the rule, for while Niderst has been prolific over the last thirty-five years in establishing modern editions of Fontenelle's works (including the still unfinished *Oeuvres complètes* being published by Fayard) and providing authoritative interpretations of them, his example has not worked to foster a broader field of modern Fontenelle studies.<sup>[2]</sup> Niderst's biography remains the only modern, systematic study of Fontenelle's life and work published in the last half century, and while earlier work, by Leonard Marsak in particular, still remains valuable, scholars of Fontenelle confront today a dearth of interpretive perspectives despite Niderst's achievements.<sup>[3]</sup> The problem is further compounded by the broader literature that does exist since it is authored primarily by French scholars writing for either the specialized discussions that define French literary studies, or the national (and regional, especially Fontenelle's native Normandy) communities who have a special interest in his legacy.<sup>[4]</sup> The limited Anglophone scholarship that exists, moreover, is either defined by these same paradigms of academic French literary analysis, or directed toward other conversations—gender history for example—that tend to isolate French and "Anglo-Saxon" scholars.<sup>[5]</sup> Scholarship in other languages is likewise very thin.

Among the reasons for this scholarly shortage is Fontenelle's awkward position with respect to the disciplinary divisions that define research within the contemporary academy. Fontenelle's *oeuvre* includes everything from witty essays, poems and plays, to libertine tracts, and abstruse reflections on infinitesimal calculus. His most studied and famous work, *Entretiens sur la pluralité des mondes habités* (1686), is also an odd hybrid. Melding into one complex text the genres of the learned and the libertine dialogue along with the idioms of *mondain* sociability and the new novel of the seventeenth century in a discussion centered on cosmology and Cartesian natural philosophy, *Des Mondes*, as the wildly successful book affectionately came to be called, speaks from the alien disciplinary culture that preceded the installation of the modern arts and sciences in the eighteenth century. Interpretations of the book are consequently divided between those that think of it as literature and those that think of it as popular natural science. No matter which stance commentators take, they also tend to take for granted a "Two Cultures" divide that isolates the "literary" dimensions of the book from its "science." There is a small corpus of scholarship on Fontenelle's scientific work, especially his mathematical thought, produced by historians and philosophers of science. Yet these studies place the "literary" dimensions of Fontenelle's writing outside their purview while also ceding to other scholars any consideration of Fontenelle's more recognizably "literary" pursuits.[6] Literary scholars have happily returned the concession with respect to Fontenelle's scientific writings, yet the problem with this disciplinary *entente cordiale* is that the arts and sciences were not divided for Fontenelle in this modern way. *Des Mondes* epitomizes Fontenelle's pre-modern comfort with a fusion of what we would now isolate as philosophy, science, literature, and art, and by failing to treat his work in this historically accurate, holistic way, the modern disciplines produce as many distortions as insights. The result, to gloss a Groucho Marx joke favored by Woody Allen, is a scholarly literature on Fontenelle that is neither fully historically appetizing nor generous in its portions.[7]

Simone Mazauric's *Fontenelle et l'invention de l'histoire des sciences à l'aube des Lumières* is a welcome corrective to this situation. Mazauric is a philosopher who writes history of science in the characteristic philosophical way that French scholars tend to write it.[8] She has written two other books about early modern French science, one a study of the seventeenth-century debate about the void and a second on Théophraste Renaudot and his *Bureau d'adresse*. [9] Her new book, therefore, does not stem from the literary discussions that largely define Fontenelle studies today; nor is she interested in the recognizable science that Fontenelle pursued. Instead, Mazauric takes her point of departure from the inquiries into historical epistemology that have been a characteristic feature of French historical philosophy for over half a century. Especially important to her thinking is the work of Gaston Bachelard and Georges Canguilhem, as well as the work of Canguilhem's most famous pupil, the early, archaeological Michel Foucault. Canguilhem's 1957 essay "Fontenelle, philosophe et historien des sciences" in fact provides the precise frame for Mazauric's study, and from this vantage point she is not interested in Fontenelle *per se*, but in his singular role in initiating the modern disciplinary field of history of science.[10] The result is a rare specimen: a serious work of seventeenth-century intellectual history that has Fontenelle squarely at its center.

To understand the nature of Mazauric's claims, some brief historical background is necessary. In 1697, at forty years of age, Fontenelle effected something of a career change, one that shaped his work and reputation over the remainder of his life. Riding the wave of fame that his astonishingly popular *Des Mondes* created (the book went through nine editions during his lifetime) and basking in the glow of literary and cultural authority that this success solidified -- he joined the immortals in the *Académie française* in 1691 -- Fontenelle accepted a new position as the Perpetual Secretary of the Royal Academy of Sciences in Paris. Two years later, he found himself at the center of a major reform initiative as the Academy of Sciences was transformed into a new kind of institution. Originally conceived according to the logics of court patronage as an assembly of about a dozen savants whose work would radiate glory upon the sovereign who patronized them, the Academy of Sciences after 1699 was transformed into the proto-professional organ of modern scientific research that has since become its hallmark. The reform vastly increased the academy's membership, and slotted academicians into new disciplinary groups

(*astronome, géomètre, mécanicien, botaniste*, etc.) according to a three-tiered *élève-associé-pensionnaire* hierarchy. Protocols for admission and promotion were also standardized around new imperatives that tied individual savants to personal research programs and publication expectations. The institution as a whole was also pushed toward the wider public through new requirements encouraging international correspondence and scholarly networking and the admission of a new class of officially designated “foreign correspondents.” Perhaps most important of all, all of these new regulations were fully enumerated in a written constitution that was published by the academy.

At the center of these changes was a new role for the academy’s secretary, one centered on practices of public science that had not existed for Fontenelle’s predecessor, the erudite Latinist Jean-Baptiste du Hamel. Du Hamel’s job had amounted to little more than maintaining a record of the academy’s meetings while after 1699 Fontenelle was put in charge of a massive public outreach program. Like Du Hamel, Fontenelle’s first task was to maintain the *procès-verbaux* of the academy’s twice-weekly meetings, yet unlike him he also became an archivist in this role, recording and preserving the individually authored scientific *mémoires* that the new regulations formalized into the centerpiece of post-reform academic science. Academic assemblies before 1699 were collective affairs devoted to jointly pursued discussions of commonly agreed upon questions. The new reform changed this, instituting a new protocol whereby each academician declared a personal research project and then pursued it by presenting individually authored *mémoires* to the academy that reported its results. The job of the academy secretary was to collate this work in preparation for its wider publication, and the 1699 reform also created a new official text, the *Histoire de l’Académie royales des sciences* as a vehicle for this publicity.

Production of the annual *Histoire*, which appeared for the first time in 1702 and continued without interruption until the Revolution, was one of the central tasks of the academy secretary after 1699. The office holder ceded to an academic committee decisions about which of the academy’s many *mémoires* to publish, but he controlled their interpretation in other, more significant ways. The 1699 regulations, for example, directed the secretary to write a narrative account of the “year in science” (or the year in French academic science since these were histories of the science at this one institution alone). This history served as the preface to the published *mémoires* themselves, and its function was to interpret the often abstruse work of the academicians in terms accessible to a wide audience. Fontenelle’s talents, demonstrated elegantly in *Des Mondes*, for making complex scientific topics accessible to lay audiences recommended him for this task, and for more than forty years (he retired from his post in 1740) he made the production of one of these annual histories a fixture of his intellectual labors.

Since the academy reform also introduced other public outreach initiatives tailored to the particular talents of the new secretary, Fontenelle’s widely admired work as a historian of science was also joined with other equally esteemed pursuits. Most famous was his invention of a new practice of funeral oration commemorating recently deceased academicians. Although not explicitly mandated by the 1699 regulations, Fontenelle invoked “les nouvelles règles” in announcing in 1702 that he would begin the practice of delivering these *éloges* whenever appropriate. The venue for these orations was the twice-annual public assembly of the academy, another piece of public outreach instituted in 1699. These regularly scheduled assemblies presented a carefully staged performance of the academy and its work to a broad audience of urban elites, and once begun, rarely did one of these widely attended and discussed public events occur without Fontenelle using the occasion to deliver one of his *éloges*. Since the practice of publishing the *éloges* in the annual *Histoire* alongside the academic *mémoires* and Fontenelle’s expository interpretation of them also became customary, the overall result was to place Fontenelle in control of several authoritative organs of public scientific discourse that were both highly influential and without any real precedent.

Mazaucic’s claim (properly nuanced in the details of her analysis) is that Fontenelle’s work as the Perpetual Secretary of the Royal Academy of Sciences between 1697 and 1740 played a singular role in initiating the modern *champ de savoir* called the history of science. From the perspective of Fontenelle

studies, the argument also advances a number of important re-alignments by simply arguing for the centrality of what is largely a vast corpus of rather arcane institutional writing in Fontenelle's wider *oeuvre*. The diligence of Fontenelle's work for the Paris Academy of Sciences after 1697 offers another explanation for his contemporary scholarly neglect since after 1699 his writing was almost entirely consumed by his institutional duties as academy secretary. The sixty-nine *éloges* that he wrote in this capacity have been incorporated into his wider *oeuvre* since these are recognizable literary texts easily treated using the methods of literary history. But what to do with the forty-one annual histories he wrote, documents that speak to the very narrow labors of the Paris Academy and to the currents of eighteenth-century science in which its members swam? Or what about the retrospective histories of the academy's work between its founding in 1666 and the reform of 1699, texts also institutionally motivated yet voluminous in scope? It is telling that the period studied in Alain Niderst's authoritative literary analysis of Fontenelle's writing is 1657-1702, the years before he devoted himself almost entirely to institutional academic work. Equally telling is the fact that while the *éloges* have been compiled and published in Niderst's edition of the *oeuvres complètes*, the histories have not. If they ever are included, the editor will face the daunting challenge of providing annotations and commentary capable of helping modern readers understand what are largely a set of institutional texts, rooted in precise moments of time, and addressed toward particular, ephemeral discussions of contemporary science.

To not include these texts, however, would be to exclude a major corpus of Fontenelle's writing, and it is here that the great virtue of Simone Mazauric's study resides. She offers a rich account of these histories, along with the *éloges* and other prefaces, introductions, and occasional institutional texts that were the essential body of Fontenelle's work between his appointment at the Academy of Sciences and his death sixty years later. She also puts these labors into a compelling context by situating Fontenelle's writing not only in the emerging disciplinary field of modern history of science but also at the center of the production of the modern sciences themselves.

She could have developed this crucial insight more fully, but she is right to argue that modern science and modern history of science are Siamese twins, born together and forever conjoined. What, for example, is science? To write a history of this object, the object of study needs to be delineated, and one of the key ways that it is defined (or has been defined in the West since the seventeenth century) is by framing it in terms of innovatory claims to newness rooted in an alleged rupture that distinguishes "science" from all other ways of knowing nature. The "new science" of the seventeenth century, the one that laid the foundation for the science we know today, was therefore as much about a new set of historical claims as it was about new techniques of knowing. Frameworks such as Ancients versus Moderns, or science versus myth, or scientific Enlightenment versus Medieval Scholastic darkness were not simply rhetorical tropes or historical frames useful for describing the newness of some already created "new science;" they were rather constitutive categories crucial for marking out the distinctive features that made the "new science" what it came to be. Fontenelle, Mazauric argues, was one of the first to systematically write science in this modern way, and as such he was not only a key figure in the invention of the field of history of science but also a key player in the making of Western science itself.

Fontenelle also pursued his work as an institutional agent of state, one that was likewise making innovatory claims about itself in the service of a new kind of political order. Mazauric baldly sums up her argument when she writes: "L'histoire des sciences est donc née d'une décision monarchique, dans un contexte institutionnel très précis qui lui assignait une finalité tout aussi précise, ce qui a évidemment contribué à lui imprimer les principaux traits sous lesquels elle à commencer d'exister" (p. 71). Fleshing out this assertion, Mazauric's claim is that because Fontenelle's writing with respect to science after 1697 was pursued in an official capacity as an agent of the French crown, there is a determinative entanglement between the innovative science writing that he produced and the state motivations that pushed him into this office and then in this precise rhetorical direction. To anchor this argument, Mazauric recounts a familiar history of the Royal Academy of Sciences that treats it as a child of the

rationalist urges of Bourbon absolutism. In this story, the academy comes to life as the creation of Jean-Baptiste Colbert, who recognizes in the “new sciences” that are percolating in sites like the Mersenne circle in Paris a new resource suitable for reinforcing a new kind of political order. In the wake of the so-called administrative revolution that Louis XIV effected in 1661, a shift that is alleged to have placed Colbert at the helm of a new rationalist system of statecraft, the Royal Academy of Sciences is seen to come to life as a creation of Colbert who views it as an agent for this new politics. Through it, science and state are wedded in a new, modernizing way, a relationship that is catalyzed in 1699 through reforms that catalyze the same symbiosis. Fontenelle, already on the job by 1697, picks up the baton from here, becoming over the course of forty years the agent of this same politics, while adding a new force behind them, as he eloquently integrates writing about science with the ongoing promotion of rational absolutism *à la louis quatorze*.

Certainly the state-science entanglement is crucial to the history that Mazauric analyzes, and she is right when she emphasizes the way that Fontenelle’s precise discursive work at the Royal Academy was also political work on behalf the French crown. The problem, though, is the one-dimensional nature of the presentation. Start with science. As she rightly emphasizes when discussing the production of science within Fontenelle’s writing, but as she does not stress enough when talking about science and the academy at its inception, there was not a ready-made science already available to royal administrators like Colbert in the middle of the seventeenth century. Quite the contrary, modern science was in the making, without any pre-determined logic or outcome inscribed within it. The state-science entanglement that Colbert unquestionably helped to initiate was not, therefore, the determined result of an established entity (science) being applied to governance in a new way (rational bureaucratic absolutism); it was, rather, a creative and transformative process that forged new *savoirs* and a new *politique* in mutually constitutive ways. Mazauric suggests this complexity by referring to the Royal Academy before 1699 as the “Baroque academy,” yet her account of its early formation and development effaces this pre-modern contingency by treating the institution as always and already modern and scientific. She nevertheless has fascinating things to say about how Fontenelle’s historical writing as academy secretary produced this modernist image of the academy as part of his program of writing science in the eighteenth century. Unfortunately, the force of the analysis is evacuated by the analytical frame that is deployed, for Mazauric takes Fontenelle’s understanding of these developments to be natural and identical with the view that historians should adopt today. Fontenelle’s understanding is indeed our understanding (or better said, the understanding of modernist historiography) in the sense that Fontenelle is in fact, as Mazauric claims, an initiator of the now commonplace framework that sees a *sui generis* science calling into being new institutions (the Royal Academy) and new agents for its promotion (the absolutist state) in a natural and determined way after 1650. Yet the real power of her argument rests in the invented nature of this framework in the early eighteenth century and the politics of that invention in this precise time and context, not in its existence as a natural historical reality that Fontenelle merely mirrored. Unfortunately, the latter understanding is too often what the book presents, and the former is only stated but never fully developed.

If science in Mazauric’s rendering is always already modern and disciplined, then the seventeenth-century state that she sees is likewise always already in a process of modernization and rationalization. Her image of the Bourbon monarchy in the seventeenth century is the standard picture of a *roi-machine* ruling through ministers like Colbert over a fully rationalized, bureaucratic state in pursuit of scientifically calculated strategic interests. This picture, long the darling of Weberian theorists of modern state rationalization and bureaucratization, is not wrong so much as one-dimensional. Certainly a new urge toward rational statecraft is a dominant theme of Louis XIV’s monarchy, and the Royal Academy of Sciences, created early in the reign (1666) was certainly a place where these political urges came together with parallel urges percolating within European learning as a whole. Yet as a whole generation of recent scholarship has taught us, the drive toward rational administration under Louis XIV was a fraught enterprise. Not only did traditional modes of governance remain resilient well into the eighteenth century, but traditional modes of statecraft also shaped Bourbon politics as well. This

complexity is lost in Mazaauric's presentation, and too often we are given an image of Fontenelle as an over determined agent of a monolithic royal politics whose agency is understood in equally monolithic and deterministic terms.

This homogenization of the actual politics of state and science under the Bourbon monarchy is particularly disappointing given the potential raised by the project as a whole. 1699 was indeed an important moment in the development of both modern science and modern statecraft, and Fontenelle did indeed make a significant contribution toward uniting them through his work as academy secretary. Yet his work was not, as Mazaauric too often suggests, the determined result of modernizing forces, ones that created the position from which he spoke, the objects about which he discoursed, and the motivations and agendas that governed his speech. Nor should his writing of science be understood as royalist politics *tout court* since Fontenelle was not a singular embodiment of a singular fusion of knowledge with state, but a locus of contests where the many dimensions of early modern science, society, and state competed with one another for supremacy. This is not to say that Fontenelle was a free agent either, inventing worlds and language in a space unconstrained by historical or political pressures. What it is saying, however, is that the constructive negotiations that did produce his writing, and the co-production of modern science and state to which it contributed, are missed when they are framed, as they too often are in this book, within reductive categories and teleological logics, be they philosophical, political, or otherwise.

Notwithstanding these shortcomings, Mazaauric's book is probing and insightful, and it intervenes in important ways in discussions currently going on among historians and philosophers of early modern science and historians of ancien régime France. One suggestion that might be offered as an antidote to the book's blind spots is that readers integrate the analysis offered in this book with the vast body of recent "historiographie sous l'influence anglosaxonne" (Mazaauric's term, p. 228) about these topics, save Fontenelle, that Mazaauric neither cites nor engages with. Her account of early modern science, for example, would have benefitted enormously from the perspectives offered in the work of Anthony Grafton, Steven Shapin, Pamela Smith, Lorraine Daston, and Katherine Park, to name only the luminaries, and her understanding of the relationship between academicism, the state, court culture, the Republic of Letters, and seventeenth-century society as a whole would also have been improved had she integrated the work of Mario Biagioli, Paula Findlen, Peter Miller and Anne Goldgar.[11] Indeed, given the precise focus of her argument, it is astonishing that her bibliography includes under the heading "Épistémologie et histoire des sciences" the important works of Eric Brian and Isabelle Stengers but no mention of Shapin and Schaffer's *Leviathan and the Air Pump* or of any of the works of Bruno Latour. There is also a large, unacknowledged Anglophone literature on Bourbon absolutism that calls into question many of the guiding assumptions of this book.[12] The perspectives of Sharon Kettering are especially glaring in their absence in a book that deals so crucially with the clientelist regimes that anchored old regime French society.[13] Gender is also much more than just a useful category of historical analysis with respect to the topics studied here, and given the complex gender dynamics that operated in Fontenelle's negotiations between salons, urbane society, the state, and the newly disciplinized space of official academic science, the absence of any engagement with the large Anglophone literature on gender, sociability, politics, and science in this period is also a noteworthy lacuna.[14]

Mazaauric's philosophical style of historical analysis certainly has its merits, not least in its attention to close, careful textual interpretation, and in its insistent scrutiny of the conceptual changes attendant to and constitutive of the arrival of modern science. One should also avoid falling into the trap, created by the previous paragraph, of condemning her for failing to write *une histoire anglosaxonne*. Her work can and should be read on its own terms, and if my Anglo-Saxon outlook often led me to want something different from the book, it did not stop me from appreciating the value and the insights of what it did contain. Overall, this is an exceedingly thoughtful and provocative study that deserves, despite its shortcomings, to be read by historians of science and historians of old regime France alike.

## NOTES

[1] Paul Hazard, *La Crise de la conscience européenne 1680-1715* (Paris: Fayard, 1961), 7.

[2] Alain Niderst ed., *Oeuvres complètes de Fontenelle*, 8 vols. (Paris: Fayard, 1990- ). In addition to the numerous articles, Niderst has also published three major books: a monograph, Alain Niderst, *Fontenelle à la recherche de lui-même (1657-1702)* (Paris: Nizet, 1972); a biography, idem., *Fontenelle* (Paris: Plon, 1991); and an edited conference volume, Alain Niderst ed. *Fontenelle, Actes du colloque tenu à Rouen en octobre 1987* (Paris: Presses Universitaire de France, 1989).

[3] Leonard Marsak, "Bernard de Fontenelle: The Idea of Science in the French Enlightenment," *Transactions of the American Philosophical Society* vol. 49, part 7 (1959); idem., "Cartesianism in Fontenelle and French Science, 1686-1752," *Isis* vol. 50, no. 1 (March 1959): 51-60. Other than this work and that by Niderst, the only other modern studies of Fontenelle are Jean-Raoul Carré, *La Philosophie de Fontenelle, ou le Sourire de la raison* (Paris: Félix Alcan, 1932); and François Grégoire, *Fontenelle, une philosophie "désabusée"* (Nancy: G. Thomas, 1947).

[4] An annual *Revue Fontenelle* has been published by the University of Rouen since 2003, and this same university also hosted a colloquium in 1987 devoted to Fontenelle that resulted in Niderst's edited volume (cited in note 2 above) that remains one of the few scholarly works devoted exclusively to his work and legacy.

[5] Anglophone literary scholarship that treats Fontenelle without necessarily focusing on him exclusively includes Joan DeJean, *Tender Geographies: Women and the Origins of the Novel in France* (New York: Columbia University Press, 1991); idem., *Ancients Against Moderns. Culture Wars and the Making of a Fin de Siècle* (Chicago: University of Chicago Press, 1996). DeJean's work points to the close ties between Fontenelle and the gendered emergence of modern literature in seventeenth-century France, and these same themes are explored more fully with respect to Fontenelle and the literature-science-gender entanglement in Erica Harth, *Cartesian Women: Versions and Subversions of Rational Discourse in the Old Regime* (Ithaca: Cornell University Press, 1992). This same nexus is also analyzed in Nina Rattner Gelbart, "Introduction," Bernard le Bovier de Fontenelle, *Conversations on the Plurality of Worlds*, trans. H.A. Hargeaves (Berkeley: University of California Press, 1990), vii-xxxii; Mary Terrall, "Gendered Spaces, Gendered Audiences: Inside and Outside the Paris Academy of Sciences," *Configurations* 3 (1995): 207-232; and J.B. Shank, "Neither Natural Philosophy, Nor Science, Nor Literature: Gender and Natural Knowledge in Fontenelle's *Entretiens sur la pluralité des mondes*," in Judith Zinsser ed., *Men, Women, and the Birthing of Modern Science* (DeKalb: Northern Illinois University Press, 2005), 86-110. A study of Fontenelle's *éloges* written by a historian of science is Charles B. Paul, *Science and Immortality: The Eloges of the Paris Academy of Sciences (1699-1794)* (Berkeley: University of California Press, 1980).

[6] Most prolific in recent years has been Michel Blay, who edited, with Alain Niderst, a modern critical facsimile edition of Fontenelle, *Eléments de la géométrie de l'infini* (Paris: Klincksieck, 1995), and contributed an introduction to the work. Fontenelle's mathematical thought also figures centrally in Blay's *Les Raisons de l'infini. Du monde clos à l'univers mathématique* (Paris: Gallimard, 1993), translated into English by M. B. DeBevoise as *Reasoning with the Infinite. From the Closed World to the Mathematical Universe* (Chicago: University of Chicago Press, 1998). It is also a topic of analysis in Blay's *La Naissance de la mécanique analytique. La Science du mouvement au tournant des XVIIe et XVIIIe siècles* (Paris: Presses Universitaire de France, 1992). A generation ago, Suzanne Delorme also produced a body of scholarship on Fontenelle's science. See for example "La Géométrie de l'infini et ses commentateurs de Jean Bernoulli à M. de Cury," *Revue d'histoire des sciences* (Oct-Dec. 1957); "La vie scientifique à l'époque de Fontenelle d'après les *Eloges des savants*," *Archeion, Archivio di storia della scienza* 19 (1937): 217-35; and

Suzanne Delorme ed., *Fontenelle, sa vie et son oeuvre 1657-1757*. Proceedings of the *Journées Fontenelle, organisées au Centre international de synthèse, Salon de Madame de Lambert, les 6, 7, 9, et 10 mai 1957* (Paris: Centre internationale de synthèse, 1961).

[7] The original joke, told by Woody Allen in his film *Annie Hall*, features two old women complaining about a Pocono mountain resort. “The food here is horrible,” the first declares. “Yes, and the portions are tiny,” the second replies.

[8] I have discussed the differences between French and Anglo-American history of science in another H-France review, *H-France Review* Vol. 3 (May 2003), No. 46. <http://www.h-france.net/vol3reviews/shank2.html>.

[9] Simone Mazauric, *Gassendi, Pascal et la querelle du vide* (Paris: Presses Universitaires de France, 1998); idem., *Savoirs et philosophie à Paris dans la première moitié du dix-septième siècle* (Paris: Les Publications de la Sorbonne, 1997).

[10] Georges Canguilhem, “Fontenelle, philosophe et historien des sciences,” *Annales de l'Université de Paris* (1957). Reprinted in *Études d'histoire de la pensée scientifique concernant les vivants et la vie* (Paris: Librairie Vrin, 1968).

[11] The full scholarship invoked here is too voluminous to cite in its entirety, but noteworthy examples include Anthony Grafton, *Defenders of the Text: The Traditions of Scholarship in an Age of Science, 1450-1800* (Cambridge: Harvard University Press, 1991); Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994); Pamela Smith, *The Business of Alchemy: Science and Culture in the Holy Roman Empire* (Princeton: Princeton University Press, 1995); Lorraine Daston and Katherine Park, *Wonders and the Order of Nature, 1150-1750* (Cambridge: M.I.T Press, 2001); Mario Biagioli, *Galileo, Courtier: The Practice of Science in the Culture of Absolutism* (Chicago: University of Chicago Press, 1994); idem., *Galileo's Instruments of Credit: Telescopes, Images, Secrecy* (Chicago: University of Chicago Press, 2006); Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (Berkeley: University of California Press, 1994); Peter Miller, *Peiresc's Europe: Learning and Virtue in the Seventeenth Century* (New Haven: Yale University Press, 2000); Anne Goldgar, *Impolite Learning: Conduct and Community in the Republic of Letters, 1680-1750* (New Haven: Yale University Press, 1995).

[12] Two review essays that summarize this literature are William Beik, “The Absolutism of Louis XIV as Social Collaboration,” *Past & Present* 188 (2005): 195-224; and Richard Bonney, “Absolutism: What's in a Name?” *French History* vol. 1, no. 1 (1987): 93-117.

[13] Among the many important studies are Sharon Kettering, *Patrons, Brokers and Clients in Seventeenth-Century France* (New York: Oxford University Press, 1986); idem., “Patronage in Early Modern France,” *French Historical Studies* 17 (Fall 1992): 839-62; and idem., “Brokerage at the Court of Louis XIV,” *The Historical Journal* 36 (March 1993): 69-87. Kettering's clientelist approach to old regime society and politics also comes together exactly with the concerns of Mazauric's study through the work of Sara Chapman. Chapman has studied the Pontchartrain ministry (1691-1715) through the lens of clientelism, and since it was this ministry that appointed Fontenelle to the academy of sciences in 1697 and ordered its crucial reforms in 1699, Chapman's book, though not cited, is particularly germane to this history. See Chapman, *Private Ambitions and Political Alliances. The Phélypeaux de Pontchartrain Family and Louis XIV's Government, 1650-1715* (Rochester: University of Rochester Press, 2004). Especially crucial is the role that Jean-Paul Bignon, a relative and client of the Pontchartrains, played in these developments. Jean-Jacques Dortous de Mairan called Bignon the “Maecenas of the sciences” in his *éloge* delivered during his brief tenure as Fontenelle's interim successor as academy secretary from 1740-1743. This reference speaks to Bignon's managerial power within the cultural wing of the French

monarchy in the early eighteenth century. The precise formulation also attests to the clientelist networks that were still crucial to French science throughout this period. Yet while Bignon figures prominently in Mazauric's analysis, he does not appear as the broker of royal patronage that he was, but as a fully modern bureaucrat ruling over scientific administration in the fashion of a modern cultural minister. The latter picture is anachronistic.

[14] In addition to the works by DeJean, Harth, Gelbart, Terrall, and Shank cited in note 5 above, there is Carolyn Chappell Lougee, *Le Paradis des Femmes: Women, Salons, and Social Stratification in Seventeenth-Century France* (Princeton: Princeton University press, 1976); Dena Goodman, *The Republic of Letters: A Cultural History of the French Enlightenment* (Ithaca: Cornell University Press, 1994); Judith Zinsler, *La Dame d'Esprit. A Biography of the Marquise du Châtelet* (New York: Viking, 2006); Londa L. Schiebinger, *The Mind Has No Sex? Women in the Origins of Modern Science* (Cambridge: Harvard University Press, 1989). Massimo Mazzotti's work on Francesco Algarotti, an eighteenth-century successor to Fontenelle, who wrote a dialogue in the spirit of *Des Mondes* that articulated Newtonian as opposed to Cartesian philosophy, is also relevant here. See Mazzotti, "Newton for ladies: gentility, gender, and radical culture," *British Journal for the History of Science* 37, no. 2 (June 2004): 119-146, and his introduction to the online critical edition of Algarotti's *Il newtonianismo per le dame* (Venice, 1739) at the University of Bologna, [http://www.cis.unibo.it/cis13b/bsco3/notbyed2.asp?id\\_opera=32&offset=0](http://www.cis.unibo.it/cis13b/bsco3/notbyed2.asp?id_opera=32&offset=0). Another article that synthesizes the literature in early modern science studies cited above with the literature on early modern science and society also cited, in constructing a different picture than Mazauric gives of the ties that bound monarchy to academic science in the eighteenth century, is Michael D. Gordin, "The Importation of Being Earnest: The Early St. Petersburg Academy of Sciences," *Isis* 91 (2000): 1-31.

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