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## **Animal Protein and Rational Choice: Diet in the Eighteenth Century**

The historiography of consumer behavior during the early modern era has two strands of inquiry. The first, based on the expanding world of goods, postulates a “consumer revolution,” most notably in England and the Netherlands where exotic comestibles, tableware to serve them, and tobacco to stimulate digestion—not to mention the art of conversation—came within the reach of the middle and lower classes. The second line of inquiry explores the parallel opening of a labor market in which women (and some men), released from households and institutional constraints, could earn income to spend on these new consumer goods. France provides much support for the hypothesis of what de Vries termed the “industrious revolution,” as well as of a revolution in the possession of nonperishable consumer goods that provided greater material comfort.<sup>1</sup>

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1 Consumer revolution: John Brewer and Roy Porter (ed.), *Consumption and the World of Goods* (New York, 1993); for a good overview, Michael Prinz, “Aufbruch in den Überfluss? Die englische, ‘Konsumrevolution’ des 18. Jahrhunderts im Lichte der neueren Forschung,” in *idem* (ed.), *Der lange Weg in den Überfluss. Anfänge und Entwicklung der Konsumgesellschaft seit der Vormoderne* (Paderborn, 2003), 191–217. Industrious revolution: Jan De Vries, *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present* (New York, 2008); Cissie Fairchild, “The Production and Marketing of Populuxe Goods in 18th-century

This article investigates food trends by taking advantage of a century-long account of purchases at the wealthy convent school of Saint-Cyr, showing how its diet of wheat and meat eventually yielded to a healthier and more diverse offering, which included milk, sugar, and fruit. Because innovations in consumption and the emergence of consumer capital require careful inscription into historical contexts, we distinguish between the weight of social expectations, the vagaries of taste, and the exigencies of price trends in the evolution of the school's menu throughout the century.

At the outset, butchery meat—beef, veal, and mutton—was the most prized, the most regulated, and the most indispensable food at Saint-Cyr. In December 1696, ten years after the institution's opening, Madame de Maintenon (Françoise d'Aubigné), its founder, reminded the Mother Superior to make sure that the quantities of meat specified in the "rules of the interior" were actually available to the pupils. Guidelines to run the school, written in the early eighteenth century, defined the daily allowance of "butchery meat and poultry . . . as one pound or half a pound per person." The existence of an entitlement to meat underlined its priority in the school's diet, giving away the establishment's aristocratic status. White bread was taken for granted and routinely accompanied the three daily meals, but other foods received merely an occasional mention in the administrative correspondence. Only meat had its daily ration specified; it supplied 20 percent of the daily energy intake per person (as measured by us in calories, which were as yet unknown) throughout the century.<sup>2</sup>

Quantity mattered, but so did quality. The school exclusively purchased finer cuts. Institutional wealth found expression in the inmates' food and the silver cutlery with which they ate it. "Only very good and well conditioned meat, such as is served on the best tables," was to arrive at Saint-Cyr, and the butcher was warned never to "try on the sly to pass pieces that are commonly called lower butchery" (which included shin, shank, and neck). Hence,

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Paris," in Brewer and Porter (ed.), *Consumption and the World of Goods*, 228–248; Daniel Roche, *Histoire des choses banales: Naissance de la consommation XVIIe—XIXe siècles* (Paris, 1997).

2 Madame de Maintenon to Madame de Fontaines, Dec. 1696, in Marcel Langlois (ed.), *Lettres de Madame de Maintenon* (Paris, 1939), V, 157; Mémoire de Monsieur Mauduyt sur l'administration de l'intérieur de la maison de Saint-Cyr, fol. 3, no date (between 1710 and 1745), 144 AP 145, Archives d'Ormesson, Archives Nationales. Ledgers of the Maison Royale de Saint-Cyr are located at D246–263, D446–449, D474, Archives Départementales des Yvelines (hereinafter ADY).

3 Spoons, forks, knives, and goblets were made of silver. See Jean-Joseph Milhiet,

roasting prevailed over stewing, and Madame de Maintenon frowned on warming remnants. Although lard was used as a cooking fat, the absence of plebeian pork (*charcuterie*) on Saint-Cyr's shopping list corroborated the table's aristocratic standing.<sup>3</sup>

Social expectations impelled the school's supervisory board to determine the portion of meat. This measure was not just an expression of status ambition; it also had a practical purpose—"to know," as the house rules stipulated, "precisely or at least more or less the amount of ordinary expenses." Recommended meat servings both communicated Saint-Cyr's eminent rank in the kingdom of France to its pensionnaires and the outside world and operated as an accounting tool.<sup>4</sup>

The combination of a noble establishment and financial control produced much paper work. Saint-Cyr's administrators ran their institution carefully, their eyes riveted on the food market. They did not tolerate compulsive shopping or squandering (leftovers were not to be sold but used in pies). According to an outside observer who commented on the institution's tight accounting at mid-century, the *économome* (steward), the nun who managed the daily business, "must keep expenses low, must not waste anything but buy only prime goods, be well informed about markets and provisioning, . . . keep up with prices of everything and avoid being cheated." Personnel regularly ventured into the outside world to sample, compare, and acquire much of the food. Indeed, instructions for purchasing insisted that "the person in charge of logistics . . . must not only stop at one sole merchant of each kind

"Historique de la Maison Royale de Saint-Louis," in *Les Demoiselles de Saint-Cyr: Maison Royale d'Éducation 1686–1793* (Paris, 1999), 74. For information about the cut and classification of meat from butchers' contracts, see D 446, ADY. Maintenon to Madame de Fontaines, April 1694, in Langlois (ed.), *Lettres* (Paris, 1935), IV, 259. For the hierarchy of cuts and their preparation, see Sydney Watts, *Meat Matters. Butchers, Politics, and Market Culture in Eighteenth-Century Paris* (Rochester, 2006), 27–41.

4 Mémoire de Monsieur Mauduyt," fol. 2. Voltaire used a letter by Maintenon to illustrate how a budget helps to run a well-managed aristocratic household; meat made up 35% of the expenses at the household in question, its quantities per person slightly larger than at Saint-Cyr. See "Économie," in Voltaire (ed. Nicholas Cronk and Christine Mervaud), *Questions sur l'Encyclopédie, par des amateurs* in *Les œuvres complètes de Voltaire* (New York, 2009), XL, 593–595. For the entire letter, dated Sept. 25, 1679, see Théophile Lavallée (ed.), *Correspondance générale de Madame de Maintenon* (Paris, 1865–1866), II, 64–70; for Saint-Cyr's material set-up, its educational project, and organization of daily life, *idem*, *Histoire de la Maison Royale de Saint-Cyr 1686–1793* (Paris, 1853); Milhiet, "Historique," 8–111; Lucette Peter, "Le Temporel de la communauté des Dames de Saint Cyr 1686–1789," thèse de doctorat (Université Paris I—Panthéon-Sorbonne, 1975).

who could abuse her trust but must enter all the shops and boutiques to find the best merchandise and the business that sells it most cheaply.” This policy provides the very portrait of a rational consumer. During the school’s existence, institutional guidelines offered a blueprint for cautious decision making when purchasing food. Changes in the *économé*’s office had no effect on the way in which the daily business was run. The house rules and provisioning procedures authorize economic analysis in terms of prices, revenues, and budget parts without running the risk of anachronism.<sup>5</sup>

Meticulously kept purchase ledgers show how the school’s administrators translated social values and economic constraints into meat consumption. These exceptional data expand our documentary evidence about consumer behavior during the *ancien régime*, especially since Saint-Cyr’s archives offer quantitative data about a segment of the population whose economic conduct has received relatively little attention. Extant expense registers yield 1,200 monthly prices for butchery meat from 1688 to 1788. The series thus capture short-term, month-to-month variations of meat purchases and their long-term development. They also contain yearly budget figures for chicken, fish, and game between 1703 and 1788, thus chronicling routines, shifts, and shocks. They unveil a penny-pinching operation forced to adjust on the fly to changing conditions. Indeed, Saint-Cyr’s standards did not prevent meat portions from varying substantially during its 100 years of existence—rising for the first forty-five years, sliding for the next thirty-five years or so, and then climbing again for the remaining fifteen years. The questions are why did Saint-Cyr’s provisioning of animal proteins drift from the original norm defined at the outset and re-affirmed several times later, and which variables explain the recomposition of the institution’s food basket during the eighteenth century?<sup>6</sup>

Social status and economic shrewdness were the hallmarks of Saint-Cyr’s commercial behavior. The analysis of Saint-Cyr’s ledgers of meat consumption provides an opportunity to enter into a dialog with other scholarly disciplines that feature elaborate theories to “account for taste(s).” Both economics and sociology reflect

5 Mémoire de ce qui s’observe dans la royale Maison de Saint-Louis établie à Saint-Cyr, fol. 25–26, no date (mid-18th century), Ms. Nlle. Acq. Fr 10677, Bibliothèque Nationale de France; Mémoire de Monsieur Mauduyt sur l’administration de l’intérieur, fol. 4.

6 Philip T. Hoffman, David S. Jacks, Patricia A. Levin, and Peter H. Lindert, “Real Inequality in Europe since 1500,” *Journal of Economic History*, LXII (2002), 324–325.

on preferences in consumer behavior, relying on certain axioms to explain human agency. Much of their disagreement stems from different definitions of taste as well as divergent hypotheses about their formation and their influence. Economists, the foremost protagonists in this intellectual dispute, interpret *taste* in a way that captures predilections (in other words, tastes *for* something); they posit the permanence of taste—or its distribution across a population—subject only to varying material constraints. Sociologists use *taste* as a tool of classification—constructing hierarchies according to good or bad iterations—the aim of which is to establish and maintain social distinction and influence.<sup>7</sup>

Whether taste appears as irrelevant or active, these studies rarely rely on extended historical data series. Hence, their pretensions to the contrary, they lack dynamic factors: In sociology, the mechanism of social competition is timeless, and in economics, material stimuli always cause the same rational response. In a paradoxical way, volition, however indexed to economic or social circumstances, is foreign to consumer choices. Such is the historical weightlessness and the absence of change that the Saint-Cyr records help to overcome. The literary and quantitative sources herein animate the elusive category of utility that haunts economics, and they revise the notion of luxury consumption as free expression that has a place in sociology. Our explanation moves from the testable influence of quantitative variables to contextual evidence. It thus integrates economic, social, and symbolic concerns that tend to appear more disjointed in historical attempts to explain change in food repertoires.<sup>8</sup>

The analysis offers three insights. First, economic rationality as an expression of income and relative prices works well in the short run but cannot explain the long-term transformation of the consumption pattern. Second, although the search for social distinction helps to explain the composition of the food basket and its persistence in time, the notion that wealth automatically leads to capricious, even idiosyncratic, behavior finds no corroboration at

7 Gary S. Becker, *Accounting for Tastes* (Boston, 1996); Pierre Bourdieu, *La distinction: Critique sociale du jugement* (Paris, 1979).

8 The reliance on one or the other mode of explanation appears clearly in review articles like Barbara Krug-Richter and Clemens Zimmermann, “Ernährung,” in Friederich Jaeger (ed.), *Enzyklopädie der Neuzeit* (Stuttgart, 2006), III, 464–485; Reynald Abad, “Consommation alimentaire,” in Michel Figeac (ed.), *L’ancienne France au quotidien: La vie et les choses de la vie sous l’Ancien Régime* (Paris, 2007), 133–137.

Saint-Cyr. In the eighteenth century at least, status claims functioned as a moral imperative; failing to live by them would have triggered a loss in reputation. Moreover, taste as a tool of social judgment and power throws no light on the long-term alterations to the school's food repertoire. Having assessed the temporal reach of rational choice and status disposition, our analysis focuses on taste as an independent, organoleptic variable that imposes its own demands on a diet's composition and the management of the institutional purse.

PROVISIONING SAINT-CYR The idea of founding a boarding school to raise and educate the orphaned daughters of the aristocracy originated in the 1680s with Madame de Maintenon—widow of the poet Paul Scarron, favorite mistress of Louis XIV, and later the king's wife, after a secret wedding in 1683. Louis generously endowed the institution with farms and forests; with a real estate of 14,826 acres, Saint-Cyr became one of the fifteen richest female abbeys of the 300 or so that thrived during the eighteenth century.<sup>9</sup>

Institutional wealth found expression in the inmates' food. Although the majority of the French population ate a monotonous, starchy diet in which meat was scarce and cereals accounted for as much as 80 percent of the energy supply (at best, peasants and the urban lower classes ate only miniscule portions of beef, pork, or chicken), the diet at Saint-Cyr was rich, varied, and, as at other similar institutions for the titled elite, geared toward the inculcation of aristocratic manners and taste. Vegetables (garden-fresh, cooked, or pickled) and fruit (fresh, cooked, preserved, or baked in pies) accompanied the staples of bread and meat. One former demoiselle reported that the older girls received 1 lb of meat per day—"a piece of beef, and boiled veal or mutton in the morning, roasted beef and mutton in the evening," whereas the younger pupils received 12 oz. Maintenon was intransigent about servings and their variety. "Do not allow a diminution of the food," she wrote to the mother superior in 1696, "diversify so that the Demoiselles eat well. They must not only be fed, they must grow. We must assure them a good

9 Veronica Buckley, *The Secret Wife of Louis XIV: Françoise D'Aubigné, Madame de Maintenon* (London, 2008); Peter, "Temporel."

health.” Physical appearance, with a premium on personal beauty, was of great importance; a deformed, stunted aristocrat making her worldly debut upon leaving the school at twenty years of age would “find neither a husband, nor a place in a convent, nor a position as a retainer in a lady’s company.”<sup>10</sup>

An adamant refusal to rely on indoor production buttressed the administrators’ compulsion to keep meticulous accounting ledgers. They recorded the purchases of six foods by quantity and price (wheat, butchery meat, wine, butter, eggs, and milk) and twenty foods by expense only (animal proteins from fish, fowl, and game; condiments like sugar and olive oil; and fruits and vegetables). The accounting vision at Saint-Cyr extended to goods coming from its property. Wheat from its farms entered its granaries as an expense based on its current price in nearby markets, and game from its forests had a price tag attached, too.<sup>11</sup>

The diet that the 250 pupils and 60 nuns enjoyed never fell below 2,300 kcal per day throughout the eighteenth century. For lack of quantities, this calculation omits the contributions of fish, fowl, game, cheese, dried fruit, edible oils, sugar, fruits, and vegetables. (boarding schools for the aristocracy’s male offspring made available about 4,000 kcal per day and per person, but this total included leftovers to be sold or distributed among the poor). The memoirs of the former pupil mentioned earlier situated all of these foods precisely to highlight the profusion that reigned in the school’s dining halls. The preparation of the dishes varied: Marinated, minced, grilled, or boiled cuts were all represented, as was mince pie and stew. The sick, the weak, and those who found the butchery meat distasteful received poultry and game. Vegetables varied according

10 Fernand Braudel, *Civilisation matérielle, économie et capitalisme 15<sup>e</sup>–18<sup>e</sup> siècle. I. Les structures du quotidien* (Paris, 1979), 216–221; Jean-Louis Flandrin, “Les temps modernes,” in *idem* and Massimo Montanari (ed.), *Histoire de l’alimentation* (Paris, 1996), 549–575, 602–616, 660–665; Watts, *Meat Matters*, 27–41. According to Milhiet, “Historique,” 81, no menus survive, but the former demoiselle’s “Mémoire de ce qui s’observe dans la Maison Royale de Saint-Louis, fondée par Louis XIV,” provides a suggestive description of the daily meal. Maintenon to Madame Du Pérou, May 30, 1696, in Langlois (ed.), *Lettres*, V, 66; Maintenon to Du Pérou, March 20, 1696, *ibid.*, 41.

11 For the resolve to forgo production on the premises, see *Mémoires de Manseau, intendant de la Maison royale de Saint-Cyr*, publiés d’après le manuscrit autographe par Achille Taphanel (Versailles, 1902), 69–70; H. Chouet, “Le temporel à la Maison Royale de Saint-Cyr,” *Revue d’histoire de Versailles* (1912), 362. A different budget (its current whereabouts unknown) dealt with such personnel as cooks, gardeners, et al.

to the season, but fruit “always accompanied lunch and even dinner, if available” (dried fruit seemed to substitute when fresh fruit had run out).<sup>12</sup>

Meat’s exceptional status among the comestibles available at Saint-Cyr affected its mode of purchase. Whereas immediate transactions in spot markets at Versailles were customary for such foodstuffs as eggs, dairy products, groceries, vegetables, and wine, commercial contracts regulated the school’s purchases of butchery meat throughout its existence. The role of price taker for all comestibles except butchery meat distinguished Saint-Cyr from many other prestigious institutions with extensive market power. The *Ecole Militaire* in Paris, charitable establishments like the *Hôtel-Dieu* in Paris, or noble households tended to rely instead on contractual purveyors of foodstuffs or on produce coming from their own farms.<sup>13</sup>

At Saint-Cyr, local master butchers signed three-year agreements; renewal typically required new signatures and a new expiration date. When both parties were satisfied, relations could last for decades, as in the case of master Michel Le Moine who supplied meat to the boarding school for more than twenty-four years after his initial engagement in 1762 (the relationship ended with the French Revolution and the dissolution of the convent school). Contractual stipulations extending three years into the future determined the quality, quantity, and price of the carcasses and cuts destined to provide for the daily needs of the 310 residents. They unchangingly specified the weight of the ordinary delivery on meat-eating days to be “three hundred and twenty pounds more or less.”<sup>14</sup>

12 Willem Frijhoff and Dominique Julia, “L’alimentation des pensionnaires à la fin de l’Ancien Régime,” *Annales*, XXX (1975), 491–504; Bartolomé Benassar and Joseph Goy, “Contributions à l’histoire de la consommation alimentaire du XIV<sup>e</sup> au XIX<sup>e</sup> siècle,” *ibid.*, 409–411; Mémoire de ce qui s’observe dans la Royale Maison de St Louis, fol. 9–13.

13 Robert Laulan, “Le service de l’alimentation à l’Ecole militaire de Paris (1753–1788),” in *L’alimentation et ses problèmes, I. Actes du 93<sup>e</sup> Congrès national des Sociétés savantes* (Tours, 1969) (Paris, 1971), 377–390; Maela Marzin, “Du blé au pain des malades: La filière panifiable de l’Hôtel-Dieu de Paris (1701–1750),” Mémoire de Master d’histoire sous la direction de Reynald Abad (Université Paris IV-Sorbonne, 2009); Pierre Couperie, “Les marchés de pourvoirie: viandes et poissons chez les Grands au 17<sup>e</sup> siècle,” *Pour une histoire de l’alimentation: Cahiers des Annales n° 28* (Paris, 1970), 241–253; Natacha Coquery, *L’hôtel aristocratique: Le marché du luxe au 18<sup>e</sup> siècle* (Paris, 1998), 169.

14 All contracts in D446, ADY. For those that lasted longest, see Marché fait avec le sieur Le Moine pour la fourniture de viande, Sept. 22, 1762, renewed for the last time Oct. 25, 1786.



Nonetheless, long-lasting contracts did not result in stable consumption volumes, though they did keep variations in expenses for butchery meat within much narrower boundaries than those recorded for wheat. The relative standard deviation of expenses for wheat is 32.86 percent, whereas it stands at 14.78 percent for meat. The relative standard deviation in price is 33.42 percent for wheat and 15.14 percent for meat. The daily allowances of butchery meat, adjusted for 160 meatless days, fluctuated between a minimum of 300 grams per person during the subsistence crisis of 1694 and a stunning 583 grams in 1738; the average between 1688 and 1788 stood at 436 grams (see Figure 1). The first half-century, though tending to an increase in the portion size, saw much more variability than did the half-century after 1738—the year when the availability of butchery meat peaked at Saint-Cyr. The figures slid downward during the 1760s and 1770s to levels that were actually not much higher than those suffered in earlier crisis years (1694 and 1709). After this low point, purchases picked up again to reach a daily allowance of 408 grams per head per day in 1788.<sup>15</sup>

The pattern is a puzzle to explain. Yet, reversal points in the provisioning of butchery meat offer clues to moments of change. Analysis of the late 1730s (when meat as well as food expenditures reversed upward trends) and the decade after 1765 (when meat portions grew again) suggests possible causes for Saint-Cyr's modified consumer behavior in both the short and the long run—first involving economic variables (prices, supply, and revenues) and then adducing other determinants mainly regarding matters of taste.

#### EXPLANATORY VARIABLES

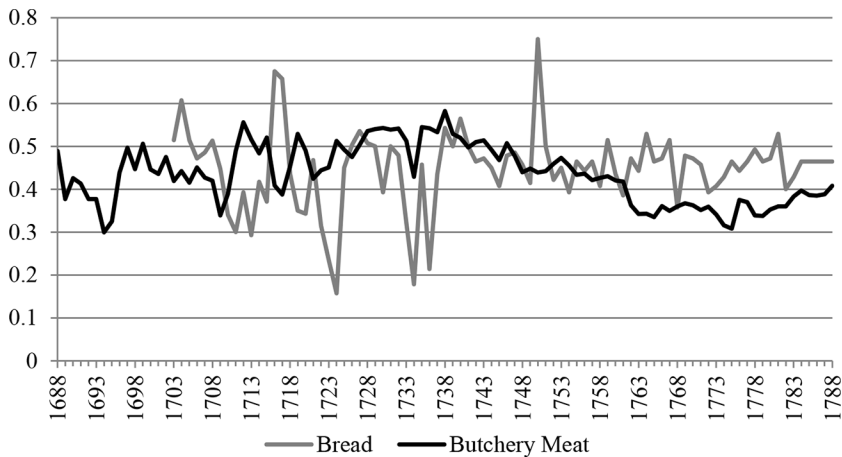
*Budget and Revenues* While revenues and food expenses moved apace at Saint-Cyr through mid-1765 (Figure 2), outlays for meat followed an independent trajectory. On a short-term basis,

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The butcher contract with Jacques Marche was in 1714, with Etienne Gallois in 1722, and with Le Moine in 1762.

15 Relative standard deviation is calculated as  $100 \times \text{standard deviation} / \text{mean}$  to arrive at comparable values. No one else has calculated these boundaries, which are likely to explain why other institutional or noble households relied on contracts; they kept the vagaries of the market at a certain distance. The absence of information about the number of lean days observed at Saint-Cyr forces reliance on Massimo Montanari, *La faim et l'abondance: Histoire de l'alimentation en Europe* (Paris, 1995), 109–110; Abad, “Consommation alimentaire,” 136. Lent and lean days affected yearly and weekly consumption, but their impact on total consumption

Fig. 1 Daily Allowance of Bread and Butchery Meat (on Meat Days) 1688–1788 (kg/Person)



NOTE The calculation allows for a 60% bolting factor in milling, since the demoiselles received white bread.

SOURCE D246–263, D446–449, D474, Archives Départementales des Yvelines.

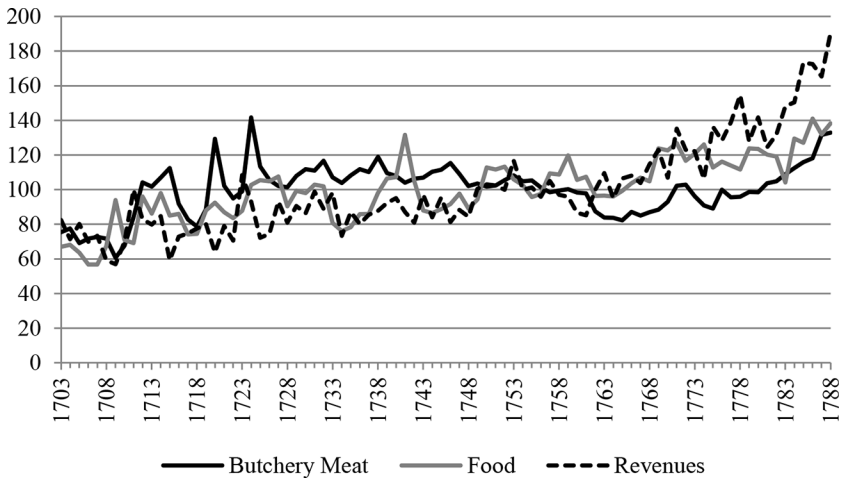
however, changes in food expenditures affected the quantities of purchased meat. The connection is evident in the statistically significant but small budget elasticity for butchery meat (equal to 0.156). Although this development may seem to contrast with the high and significant value for wheat (1.879), it reflects only that variations in quantities were smaller for meat than for wheat. Meat by all accounts was a necessary good. Its consumption increased with the institution's food budget, but it did not do so proportionately.<sup>16</sup>

Oddly, the model evaluates wheat as a luxury good because its share in food expenses increased with expenses. This counterintuitive appraisal is the result of subsistence crises. Indeed, the calculations for two sub-periods show significant differences: Wheat still appears as a luxury good in the sub-period of 1703 to 1742

did not vary during the century. The same point holds true for fish consumption—high during lent and on lean days without changing the yearly pattern.

<sup>16</sup> Budget elasticities illustrate the effect (in percentage) of a 1% increase in food expenditure for each quantity. Uncompensated price elasticities measure the change (by percentage) in consumption induced by a 1% change in prices, holding food expenditure constant.

Fig. 2 Revenues and Food and Butchery Meat Expenses at Saint-Cyr (1703–1788 = 100)



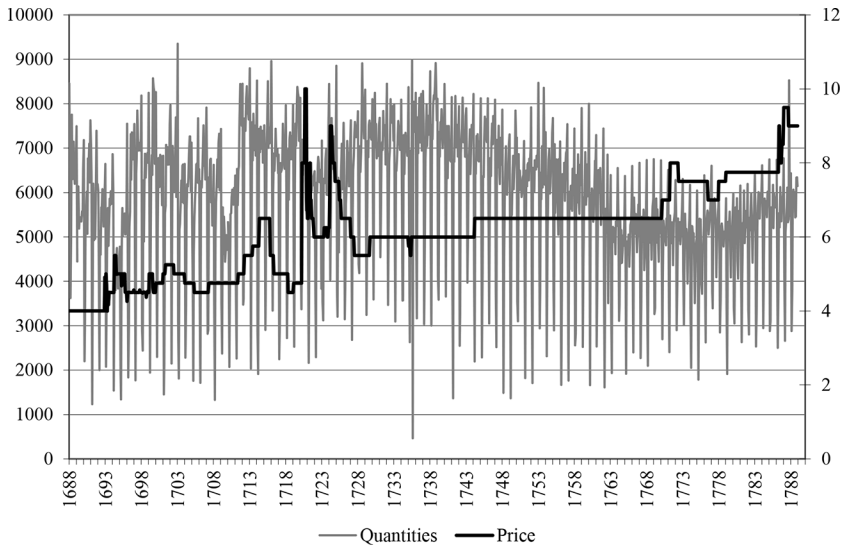
SOURCE D246–263, D446–449, D474, Archives Départementales des Yvelines.

(2.813), characterized by more hard times and the consequent higher volatility of purchased quantities. But it becomes a necessity between 1743 and 1788, with a budget elasticity equal to 0.689. When we split the century into sub-periods—covering, for example, the rise and fall of the provisioning curve—meat does not show a similar heterogeneity in time. Regarding revenues, the income elasticity of meat is almost zero and insignificant; for wheat, it is larger but still insignificant. The reason is the statistical disconnection between revenues and food budget.<sup>17</sup>

Accounting included more than records of revenues and expenditures. Saint-Cyr's steward anticipated yearly income. At times, this anticipation was faulty, never more so than between 1734 and 1738 when reality shortchanged expectations by more than 10 percent every year. The year 1738 was distinguished by a cascade of five consecutive erroneous assessments; its reduction of meat consumption, the budget's largest part, could well have

17 For the time-series econometrics, see Bruegel, Chevret, Lecocq, and Jean-Marc Robin, "Explaining the Food Purchases of the Convent School at Saint-Cyr 1703–1788," *Annals of Economics and Statistics*, CIX/X (2013), 63–91.

Fig. 3 Price (in Livres Tournois) and Monthly Purchases (in lbs) of Butchery Meat at Saint-Cyr, 1688–1788



SOURCE D246–263, D446–449, D474, Archives Départementales des Yvelines.

been a reaction to revenues that did not meet the *économé*'s extrapolation.

*Prices* If the contracts signed between the institution and its suppliers could not hold quantities constant, does the evolution of meat's price explain the long-run waves of its provisioning at the convent school? Price variations rarely occurred after 1727 (Figure 3). Contractual terms succeeded in keeping rates steady, and tacit renewal enforced the stated price beyond its usual three-year application. Before 1727, however, price stability obtained for shorter durations, often in months and sometimes in years. There is no evident relationship between the waves of purchased quantities and price movements in the long run. In the short run, a similar picture emerges: Own-price elasticity is not significantly different from zero ( $-0.098$ ). It remains so regardless of period. As a comparison, the quantity of wheat purchased is highly sensitive to wheat price ( $-0.511$ ), especially before 1742. Inspection of cross-price elasticities (see Appendix) show that variations in the price of other foods played a role in the explanation of short-run fluctuations in the consumed quantity of butchery meat: An increase in

the price of milk or butter had a positive and significant effect on meat consumption (which was therefore a substitute for milk and butter). Overall, variations in budget and prices are able to explain 77 percent of the short-term variations in the share that butchery meat represented in the budget at Saint-Cyr.<sup>18</sup>

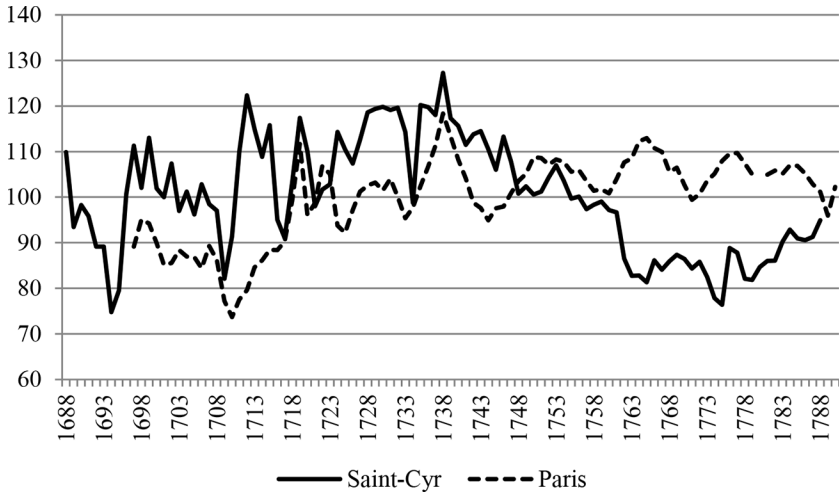
*Supply* Did supply control meat purchases at Saint-Cyr? A look at the cattle markets provisioning Paris (Figure 4) provides an intriguing angle on Saint-Cyr's meat purchasing behavior (oxen for beef, cows and calfs for veal, and lamb for mutton, though not pigs for pork, were transformed into their beef-weight equivalents). Before 1738, and even five years afterward, a great deal of synchronicity existed between Saint-Cyr's demand and the volumes offered in the French capital. In both cases, 1738 represented the century's peak. But even though the market in Paris had recovered from its steep, 30-percent decline by 1744 to enter forty years of relatively constant, if cyclical, supply, Saint-Cyr's consumption of butchery meat declined steadily through the mid-1760s, stabilizing at about three-quarters of a pound per head per day, before rising again after 1774. These trajectories suggest that by the 1740s, Saint-Cyr's administrators were no longer taking full advantage of the available meat volumes. They obviously made different choices, demonstrating a great deal of independence with respect to meat supply. Average availability per head declined in Paris from 0.188 kg to 0.165 kg during the last two decades of the ancien régime, at the precise time when they began to recover in the convent school.<sup>19</sup>

*Social Expectation* The levels of butchery-meat consumption that had remained more or less stable but comparatively low between 1767 and 1773 fell to around 316 grams and 308 grams per day per person in 1774 and 1775, respectively. This low point, however, was also a turnaround, triggering, if not a complete volte-face, at least a decision to reverse the decline of meat rations at Saint-Cyr. During the decade following 1765, the institution was apparently willing to save on meat expenses, but only above a certain quantity. By this time, three-quarters of a pound—the ration that Maintenon had once considered adequate for the younger

18 *Ibid.*

19 Marcel Lachiver, "L'approvisionnement de Paris en viande au 18<sup>e</sup> siècle," in *La Société de démographie historique* (ed.), *La France d'Ancien Régime: Études réunies en l'honneur de Pierre Goubert* (Toulouse, 1984), I, 352.

Fig. 4 Cattle Supply (Beef Equivalent) in Paris and Butchery Meat Purchases at Saint-Cyr in the Eighteenth Century (Series' Means = 100)



SOURCES D246–263, D446–449, D474, Archives Départementales des Yvelines; Marcel Lachiver, “L’approvisionnement de Paris en viande au 18<sup>e</sup> siècle,” in *La France d’Ancien Régime: Études réunies en l’honneur de Pierre Goubert* (Toulouse, 1984), I, 345–354.

pupils—had become the benchmark below which the quantity of butchery meat should not fall without betraying the school’s aristocratic standing.

Administrators appeared to have decided to take action against further decline when butchery-meat rations fell drastically low in 1774, eighty years after their touching rock bottom in the terrible winter of 1693/94. They had already faced such a crisis in 1765 when the daily allowance dropped below three-quarters of a pound per person when the *économé*, after having saved on butchery meat since 1738, could no longer refrain from spending extra money. This first jolt in 1765 and then the second one in 1775 forced the school to raise the bar to maintain conventional quantities of butchery meat. The short-term upset of 1774/75 must certainly have left an indelible mark on the consumption routine that recalled the school’s reaction to crises during the first thirty years of its existence.

Indeed, in the early days, when the subsistence crisis of 1709

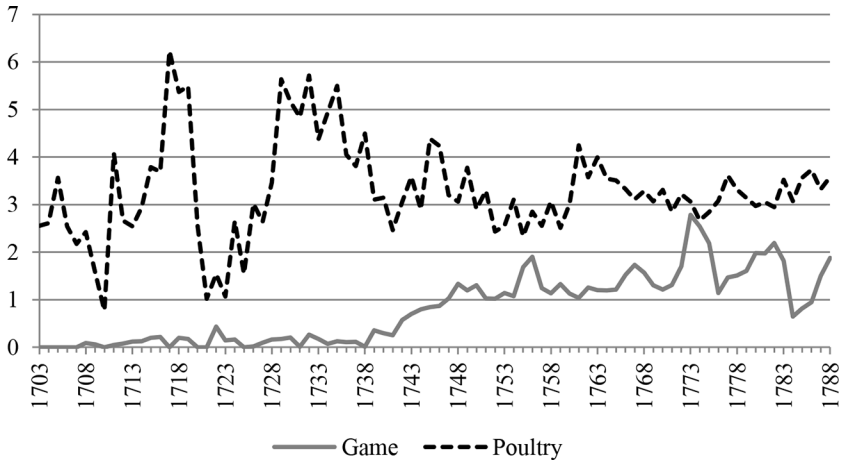
loomed on the horizon, Maintenon left no doubt about the importance of meat to a person's social identification. She derided a fellow nobleman for failing to honor the aristocratic custom of providing 1 lb of meat per day per soldier in his squadron. The measure seemed to hold elsewhere in the eighteenth century. A tally taken shortly before the French Revolution in a noble household put the portion of butchery meat on fat (meat) days at 1 lb 8 oz (roughly 640 grams) per person. In an institutional context, the norm regulating aristocratic meat consumption led to upheaval: Discontent among the blue-blooded pensionnaires at the *Ecole militaire* led the minister of war to mandate a meat-heavy diet in 1777, the daily ration of one-and-a-half pound of meat deemed insufficient for adolescent *gentilhommes* at an institution wishing to maintain its reputation. The cultural definition of *adequate supply* came with an economic fee; the disability to meet it entailed a decline in honor and may have fostered anxiety about the demoiselles' health. Saint-Cyr's experience demonstrated that this imperative operated as a threshold below which it was socially unacceptable for meat rations to fall.<sup>20</sup>

*Substitute for Butchery Meat* The contribution of game to the institutional diet escalated after 1738 (Figure 5). Deer, rabbits, young boars, and partridges were occasionally served at Saint-Cyr before butchery meat began its twenty-five-year decline at the end of the 1730s. Thereafter, the administrators made a concerted effort to offset some of this diminution with a supplement of venison. The budget allotted for poultry continued to oscillate around 3 percent, suggesting that chicken did not substitute for red meat. The new fare by no means exhausted the 10 percent savings in the budget for butchery meat as it amounted only to a 1.5 percent additional expenditure. Yet game was cheaper than butchery meat by unit weight and by calorie.

Game weighed about 36 grams per meat day on average between 1768 and 1789 (years for which extant data allow a quantitative estimation). The contribution of wild animals to overall portion size after 1738 may have been small, but the addition of venison made sure that meat rations never slipped below three-

20 Maintenon to the Duc de Noailles, June 22, 1709, in *Mémoires et lettres de Madame de Maintenon* (Maestricht, 1778), XI, 128; Sean Takats, *The Expert Cook in Enlightenment France* (Baltimore, 2011), 80–81; Laulan, "Service de l'alimentation," 386–390.

Fig. 5 Budget Parts of Poultry and Game, 1703–1788 (Percentage)



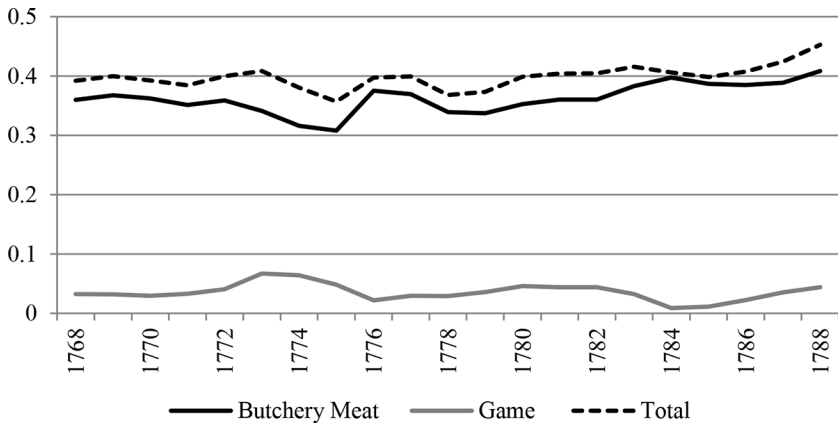
SOURCE D448, D449, Archives Départementales des Yvelines.

quarters of a pound per day when beef and veal were on the downward trend (Figure 6)—Maintenon’s recommendation for girls aged seven to twelve. Feathered and ground game compensated in part for vanishing butchery meat, helping to maintain quantitative standards. The negative and highly significant correlation between the two series ( $-0.605$ ) is clear when plotted as variations around their trend (Figure 7), showing that provisioning with butchery meat and game was contrapuntal, aimed at ensuring a certain quantity in the short run. Game not only increased the variety of the fare and kept meat’s volume above aristocratic expectations; it also held great symbolic value. Its emblematic meaning as a noble food added more distinction to the alimentary regime at the convent school.

*Taste* Meats were not the only food group in which the components changed. Reshuffling affected the entire food basket (see Appendix). Just as in Dutch orphanages and English households, Saint-Cyr turned toward sweeter foods. The increasing prominence of sugar on the shopping list was singlehandedly responsible for the growing budget share of groceries. While its share in food expenditures grew from 1.5 to 5 percent, consumption expanded from less than 1,000 lbs per year during the first decade of the eighteenth century to roughly 5,000 lbs during its last. The sec-



Fig. 6 Daily Availability of Butchery Meat and Game per Person, 1768–1788 (kg)



SOURCE D448, D449, Archives Départementales des Yvelines.

ular expansion translated into a climb from 4 to 20 grams per person per day.<sup>21</sup>

Attention to the 1730s, a turning point, brings greater refinement to our knowledge of consumption shifts and the arbitrages that they required. Growth of sugar consumption proceeded faster during the first half of the eighteenth century than during the second half, but purchases were more regular after the first third. The development of a provisioning routine—the curtailment of opportunist purchases after the 1730s—owed much to increased supply, as overseas plantations grew and exportations to metropolitan France expanded. This increased supply stimulated the taste for sugar. Price did not play even a minor role in the development; the correlation between price and purchased quantities is  $-0.1436$  ( $p$ -value =  $0.3583$ ).

The popularity of sugar was the key to another modification of consumer conduct. At Saint-Cyr, just as at the table of Louis XIV, the willful spurning of such exotic goods as coffee, chocolate, and tea coincided with the consumption of sugar with fruit and

21 Anne McCants, “Monotonous but Not Meager: The Diet of the Burgher Orphans in Early Modern Amsterdam,” *Research in Economic History*, XIV (1992), 89; Carole Shammas, “The Eighteenth-Century English Diet and Economic Change,” *Explorations in Economic History*, XXI (1984), 284–286.

Fig. 7 Provisioning of Butchery Meat and Game, 1768–1788: Variations around Trend\*



\*Moving average: 11 observations (5 lags, 5 leads).

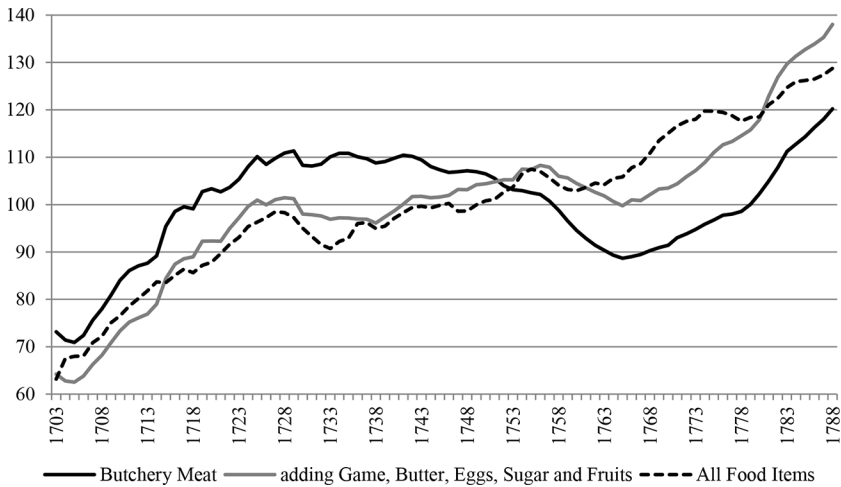
SOURCE D448, D449, Archives Départementales des Yvelines.

berries. Their part of the budget grew from 1 to almost 4 percent. Although our sources are silent about acquired quantities, the économe at Saint-Cyr was certainly willing to spend enough money on fresh fruit to allow the demoiselles to continue preparing fruit pies or to serve fresh apples, apricots, cherries, pears, plums, and peaches as desserts.<sup>22</sup>

Pastry required butter and eggs. Butter's rise in price more than doubled that of meat, and eggs outpaced it by 50 percent. But the culinary imperative prevailed over this economic constraint. Their respective quantities could not suffer trimming without compromising the quality of baked desserts at Saint-Cyr, even to the detriment of the original budget. Hence, their shares increased, respectively, from about 2.5 to 4.5 and 6 to 8 percent over the century. Gourmandise was a privilege that put pressure on the budget. The incurred expenses affected the costliest item on the institutional shopping list; the most substantial savings derived from cutting back on butchery meat.

22 There is no single accounting instance of Saint-Cyr's buying such stimulants as tea, coffee, or chocolate. See Stanis Perez, *La santé de Louis XIV: une biohistoire du Roi-Soleil* (Seysssel, 2007), 232, for Louis XIV's avoidance of them. *Mémoire de ce qui s'observe*, fol. 24.

Fig. 8 Food Expenditures Indices (1703–1788 = 100)\*



\*Moving average (5 leads, 5 lags).

SOURCE D246–263, D446–449, D474, Archives Départementales des Yvelines.

This remarkable confluence of developments regarding meat, game, sugar, and fruit may have reinvigorated Saint-Cyr's accounting vigilance, which had been reeling from the aforementioned erroneous assessments that severely constrained the food budget during the late 1730s. The various indices of food expenses throughout the century suggest that the rising taste for sweets, and for the butter and eggs that complemented it, combined to diminish expenses for butchery meats. Figure 8 reproduces the secular evolution of outlays for butchery meat and other food groups. When indices of game, butter, eggs, sugar, and fruit augment the index for meat, they do not alter the dynamics of total food expenses, even after the 1740s when the outlays for meat declined. Responding to different economic cycles, the other groups injected spikes into the long-term pattern of food expenditures that do not align with its general form. This additional evidence clinches the point. Meat consumption declined in order to maintain the quantities of butter and eggs required in a rich cuisine. Furthermore, the reduction in meat consumption favored the epochal shift toward a sweeter diet. The critical decade between 1765 and 1775 reveals the extent to which the consumption of meat could fall without compromising the aristocratic canon.

ARISTOCRATIC CONSUMPTION: BETWEEN SOCIAL ANXIETY AND ECONOMIC PRESSURE The convent school at Saint-Cyr was not just another old-regime institution in which the nobility indulged its usual, profligate mode of living. Analysis of the nobility's purchases of butchery meat not only opens a window on consumption and consumer behavior in the eighteenth century; it also refines our information on food markets and the strategies that people deployed to acquire merchandise. The improvement in factual knowledge yields amendments to conventional wisdom, particularly in two areas: (1) The influence of economic consideration on institutional management is not to be denied. Saint-Cyr's accounting stipulations enforced close attention to the food markets; costs mattered. (2) Management and bookkeeping were far from myopic; they were forward-looking enterprises. In fact, a cascade of uncharacteristically flawed anticipations of revenue during the mid-1730s likely helped to convince the administration to reduce expenses for butchery meat. However, the wave-like fluctuation in the quantities of butchery meat consumed during the school's century-long existence bear no relation to such economic variables as revenue, food budget, or produce prices. Reactive to economic variables in the short run, butchery-meat consumption responded to other considerations in the long run.

Data from Saint-Cyr suggests that a sociology of taste ascribing ever-greater choice to people as their place on the social pyramid rises is not entirely accurate. This view neglects the manner in which social expectation and representation affect everyday conduct. Material welfare was not a fail-safe key to freedom of choice at Saint-Cyr. Creature comfort and the absence of physical deprivation did not automatically lead to the satisfaction of whimsical desires. To be sure, the 250 demoiselles and their 60 caretaking nuns had access to a diet well beyond the means of most French people during the eighteenth century. But this population had a scripted alimentary regime. Veblen's acerbic description of the social expectations facing the leisure class captures the salient trait of life at Saint-Cyr better than Bourdieu's rosy picture of insouciant and carefree living at the top of the social pyramid. Butchery meat, its place on the menu and in the budget, perfectly illustrates the imperative of aristocratic self- and social representation during the school's 100 years of existence. Rarity and high price transformed

meat into a prized food, endowing it with special significance. The consumption of meat meant superiority.<sup>23</sup>

Aristocratic values compelled Saint-Cyr's managers never to purchase quantities of beef, veal, and mutton that undercut their conventional minimum standard. A shortcoming of available meat would have undermined the school's social position and shaken its pensionnaires' understanding of themselves as members of the kingdom's nobility. The diminution of the school would have *illico presto* downgraded its pupils' honor and compromised their standing as wives, ladies' companions, or nuns. The eventual substitution of game for butchery meat occurred for both material and symbolic reasons. To the extent that it was meant to compensate for shrinking purchases of beef and veal, it emphasized the school's privileged claim to the products of forests and of hunting. When, by the mid-1760s, that strategy proved insufficient, the *économé* continued to devote additional money to butchery meat until the school's demise.

Saint-Cyr's aristocratic demeanor never resulted in the conspicuous and wasteful consumption that characterized individual noble households and apparently occurred with a vengeance at the royal court in Versailles (the city where Saint-Cyr did much of its shopping). Management responded immediately to price changes of both meat and wheat to keep quantities constant. The reliance on a contract to regulate the quality and quantity of meat supplies and keep commercial vagaries at a distance shows the importance of calculation and foresight at Saint-Cyr, just as the provisioning with game responded to short-term changes in the supply of butchery meat. Such proactive consumer behavior also epitomizes the degree to which this affluent institution was enmeshed in the market economy.<sup>24</sup>

Nonetheless, economy was not the salient issue in the cutback of butchery meat during the late 1730s. Neither the market nor the school's expense account was the engine for dietary change. The shopping list would have remained the same if Saint-Cyr's palate

23 Bourdieu, *La distinction*, 178–180; Thorsten Veblen, *The Theory of the Leisure Class* (New York, 1967; orig. pub. 1899), 115–166.

24 For waste at the royal court, see Norbert Elias, *Die höfische Gesellschaft* (Frankfurt, 1983), 416–430.

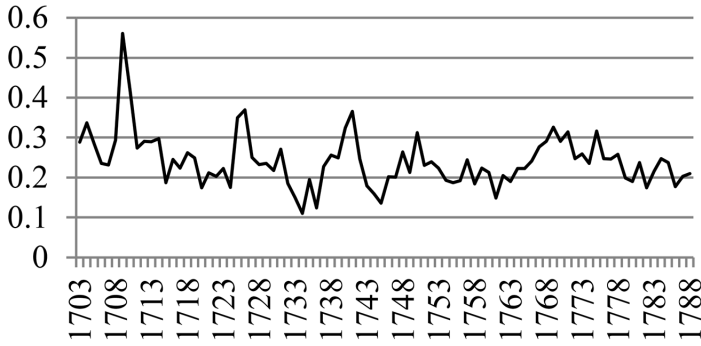
had done so. Nor was the penchant for sugar dependent on the concomitant expansion of other exotic goods like chocolate, tea, or coffee in Europe. On the contrary, larger outlays for sugar stimulated an increased purchase of such traditional goods as fruit, butter, and eggs. The pensionnaires' sweet tooth exerted pressure on the budget, and butchery meat suffered the consequences.<sup>25</sup>

The evolution of Saint-Cyr's provisioning confirms the importance of economic rationality. Moreover, in showing that Saint-Cyr held to an aristocratic standard of meat rationing, this analysis verifies sociology's claim that taxonomies reinforce social hierarchies. But neither economics nor sociology captures the entire story; in this context, both disciplines fail to predict the composition of the institution's diet in the long run. Economic variables cannot account for the evolution of food consumption because they cannot anticipate changing tastes. Sugar's growing importance at Saint-Cyr owed hardly anything to its putative power to signify distinction (meat, white bread, and variety remained the mainstays so far as status was concerned). It does highlight, however, a third dimension in this picture of the eighteenth-century French diet: Technical constraints in the kitchen—recipes, to be precise—imposed their own demands on the foodstuffs to buy. The point is so self-evident that contemporary studies easily overlook it.

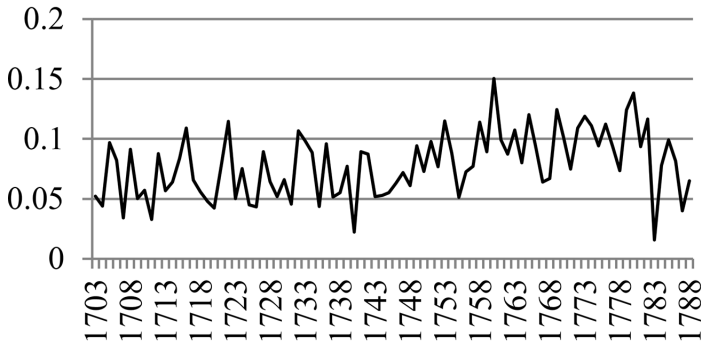
25 Sidney Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York, 1985), 125–146; Shamma, “English Diet,” 265–266; McCants, “Poor Consumers as Global Consumers: The Diffusion of Tea and Coffee Drinking in the Eighteenth Century,” *Economic History Review*, LXI (2008), 172–200.

APPENDIX 1. BUDGET PARTS

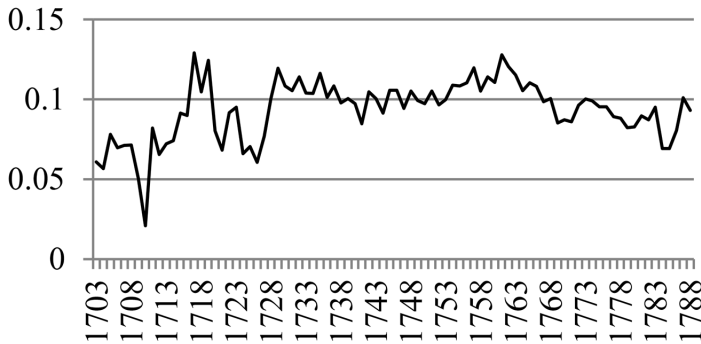
Wheat



Wine

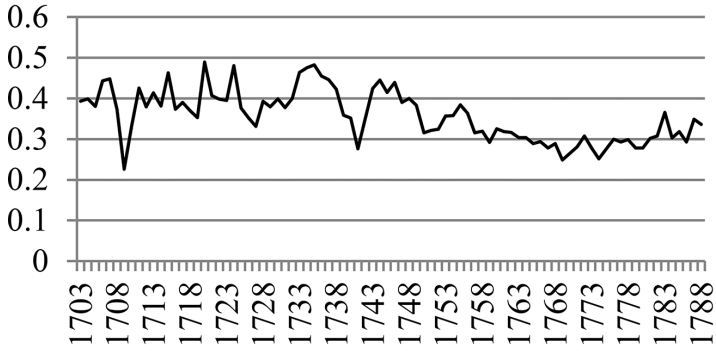


Other Meats and Cheese

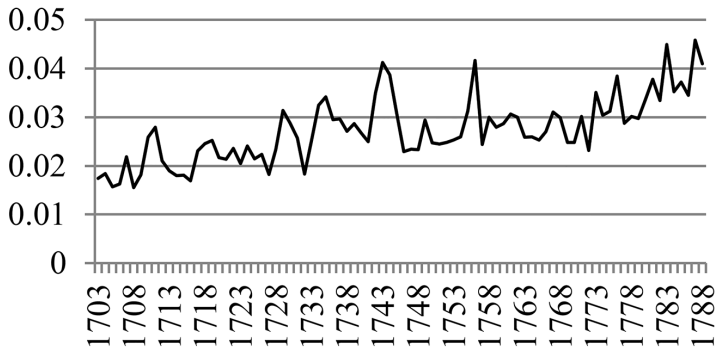


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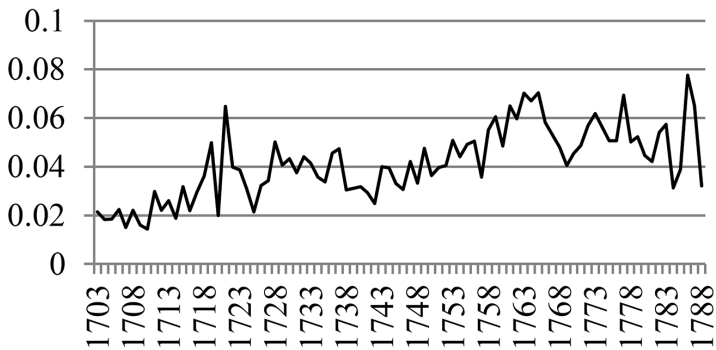
Butchery Meat



Milk



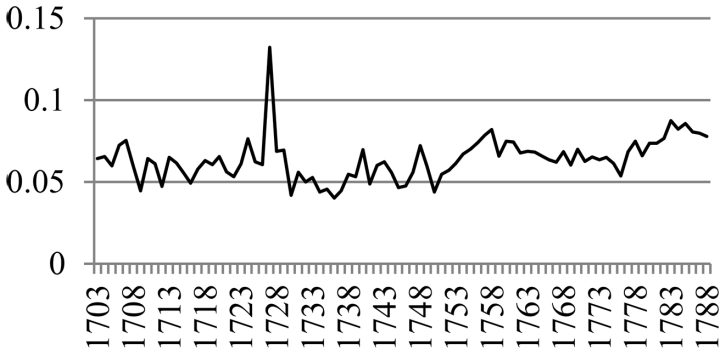
Fruits and Vegetables



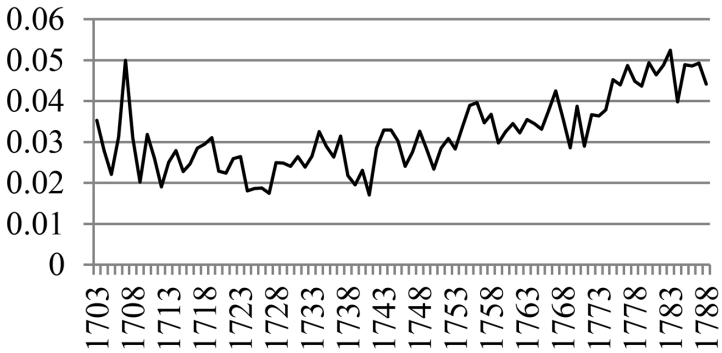


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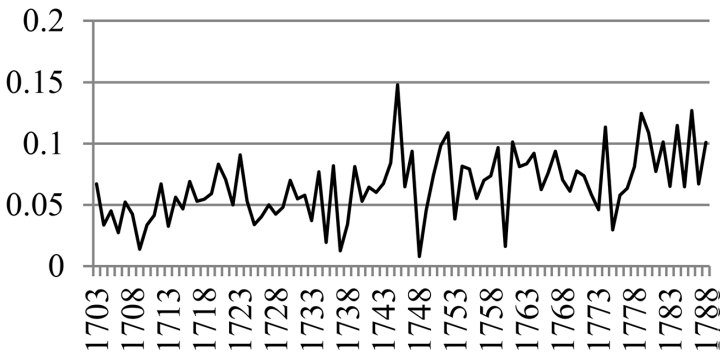
Eggs



Butter



Groceries



Appendix 2. Elasticities Estimates

	WHEAT	BUTCH. MEATS	EGGS	WINE	MILK	BUTTER	OTHER MEATS	FRUITS, VEG.	GROCERIES
FOOD EXPENDITURE ELASTICITIES									
Food outlay	1.879 (0.218)*	0.156 (0.078)*	0.543 (0.182)*	1.686 (0.384)*	0.364 (0.190)	0.225 (0.163)	1.169 (0.145)*	1.034 (0.301)*	2.362 (0.447)*
UNCOMPENSATED PRICE ELASTICITIES									
Prices									
Wheat	-0.511 (0.087)*	-0.039 (0.031)	-0.188 (0.095)	-0.329 (0.153)*	0.031 (0.075)	-0.017 (0.064)	-0.123 (0.058)*	-0.278 (0.119)*	-0.724 (0.178)*
Butch. meats	-1.250 (0.285)*	-0.098 (0.102)	-0.196 (0.238)	0.040 (0.301)	0.141 (0.248)	-0.056 (0.214)	-0.209 (0.189)	-0.757 (0.393)	0.574 (0.583)
Eggs	0.029 (0.120)	-0.032 (0.043)	-0.352 (0.100)*	0.021 (0.211)	-0.196 (0.104)	-0.030 (0.091)	-0.079 (0.080)	-0.137 (0.166)	-0.293 (0.246)
Wine	-0.133 (0.064)*	-0.008 (0.023)	-0.061 (0.053)	-0.718 (0.112)*	-0.021 (0.055)	-0.087 (0.046)	-0.077 (0.042)	0.023 (0.088)	0.400 (0.130)*
Milk	-0.939 (0.293)*	0.388 (0.105)*	0.171 (0.245)	-0.005 (0.516)	-0.559 (0.255)*	0.047 (0.220)	-0.094 (0.195)*	0.893 (0.404)*	1.389 (0.600)*
Butter	0.090 (0.104)	0.075 (0.037)*	0.053 (0.087)	-0.569 (0.184)*	0.126 (0.091)	-0.991 (0.078)*	0.094 (0.069)	-0.173 (0.144)	-0.192 (0.214)

\* Significant at the 5% level.

NOTE Standard errors in parentheses.

SOURCE For econometric details, see Bruegel, Chevet, Lecocq, and Jean-Marc Robin, "Explaining the Food Purchases of the Convent School at Saint-Cyr 1793-1788," *Annals of Economics and Statistics*, CIX/X (2013), 63-91.