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# THE LIFE CYCLE OF A BOOK: A PUBLISHING HISTORY OF D'HOLBACH'S *SYSTÈME DE LA NATURE*

Robert Darnton

In grappling with intellectual history, one sometimes feels like a child trying to catch smoke: it seeps through the fingers and floats off into a cloudy climate of opinion. *Was ist Aufklärung?* We are still groping for an answer. But we can get a grip on more manageable questions, such as: What was the Enlightenment as a campaign for spreading light (*Lumières*)? Or, more concretely still, how did the *philosophes* get their message across to the public? How did their books reach readers? To be sure, a great deal will be lost in transliterating from philosophy to something that smacks of sociology, and a shift in the way of putting questions will not provide an answer to Kant's original query. But something may be gained—if not a new notion of the spirit of the age, at least some knowledge of the social history of ideas and of the Enlightenment as a process of idea diffusion.

In order to illustrate this proposition, I would like to trace the life cycle of an edition of a key Enlightenment text, *Le Système de la nature* by Paul-Henri Dietrich, baron d'Holbach.<sup>1</sup> When the book first appeared in 1770, it created a sensation: here was bold-faced atheism, illegal and unashamed, shouldering its way past the police and onto the literary marketplace. The *succès de scandale* fired appetites everywhere in the book trade. As soon as the work's original publisher, Marc-Michel Rey of Amsterdam, saw that the first edition was being snapped up, he started setting type for a new one, and a dozen other publishers raced to get out pirated editions.<sup>2</sup>

"Piracy" hardly describes their assault on the market, however. Atheistic tracts could not be published openly anywhere, least of all in France, where the censors, the booksellers' guild, and the police set limits to the legal book trade. No one dared claim ownership of a work like *Le Système de la nature*, so everyone felt free to reprint it. By 1770, the reprint trade was

booming, especially in the publishing houses located across France's boundaries in a great arc that stretched from Amsterdam to Avignon. No international copyright agreement restrained the scramble for business in this border territory, and local authorities--the duke of Bouillon, the prince-bishop of Liège, the prince of Trévoux, the legate of Avignon, and the burgher councils of the Dutch and Swiss cities--actively encouraged it. In the eighteenth century, best-sellers reached readers by a process that differed fundamentally from what exists today. Instead of being produced in huge numbers by a single publisher, who might auction rights to a paperback house, they appeared in many small editions put out simultaneously by competing firms, which tumbled over one another in the general rush to get to the market first.

Something of the flavor of this business can be appreciated from a report sent to one of those publishers, the Société Typographique de Neuchâtel (STN), from its agent at the book fair of Bern in November, 1770:

It has been impossible for me to get my hands on the *Système*. M. Syrini [a bookseller from Basel] did everything in his power ten days ago to find it for a French officer, who had offered him 10 louis [240 livres, a spectacular price]; and he wasn't able to obtain it. . . . The fair is turning out to be terrible, and it looks as though I won't sell much at all. . . . The place is full of spies, who keep their eye on everything transacted on the market.<sup>3</sup>

Police spies, market reports, secret shoptalk about fabulous profits--everything pointed to the possibility of a coup, if only the STN could find a copy of the text in time to put out a quick reprint from its shop in Neuchâtel, Switzerland. Then, just when the time seemed ripest, a copy materialized in the printing shop itself. It came in the baggage of Jean Louis de Boubers, a publisher from Brussels, and Boubers arrived on business. He was a specialist in illegal literature, one of the boldest in the book trade. Having invested heavily in a pirated edition of Paul-François Velly's *Histoire de France*, an eight-volume work then being extended to sixteen volumes by its Parisian publisher, he had learned that the STN was planning to counterpirate him from Neuchâtel. Instead of undercutting one another, he proposed that they cooperate. He would supply the STN with 100 copies of his duodecimo edition and 25 of his quarto in exchange for an assortment of books from its stock. Meanwhile, it could occupy its presses with the *Système de la nature*, printing from his copy, an octavo in two volumes. To sweeten the deal, he would place an advance order for 500 copies, but he wanted them at a reduced price, one sou per sheet, and he wanted them fast--by February 1771 at the latest.

Such were the terms of the agreement as far as one can tell from the subsequent correspondence of the two publishers.<sup>4</sup> They never signed a contract, perhaps because the STN did not want to keep any compromising documents among its papers. In its account books it always referred to the *Système* by a code name, *Ouvrage de Boubers*. Its principal director, Frédéric-Samuel Ostervald, received permission from the local censors to produce the book on the grounds that the entire edition would be sold outside the principality, but he knew that he could get in trouble if Neuchâtel's ministers, organized in the Vénérable Classe des Pasteurs, got wind of the business. Still, Ostervald had considerable influence himself. As banneret, or head of the local militia, he occupied an important place in the governing Conseil de ville, and he knew that he could always appeal above the Conseil to the ultimate sovereign of the principality, Frederick II of Prussia, who could not have cared less if some atheism came off the presses of his Swiss subjects.

So the STN set to work, printing the *Ouvrage de Boubers*. Its progress can be followed, sheet by sheet and week by week, in several account books of the firm. We can study the printing of volume I as a model of the production process -- its rhythm, costs, and labor. This involves a certain amount of esoteric detail, but the detail is worth studying, because we still know relatively little about how books were produced and distributed in the era of the common press.

By way of background information, it should be noted that the STN's *Système de la nature* was published under the false address "Londres, 1771" in two octavo volumes printed at a pressrun of 2,000. Volume I contained 26 sheets (416 pages). The accounts were kept primarily in French livres tournois (1 livre = 20 sous; 1 sou = 12 deniers) but also in Neuchâtel livres (4 livres tournois = 3 Neuchâtel livres). In accounting for paper, the STN reckoned in reams (*rames*), quires (*mains*), and sheets (*feuilles*) -- 1 ream = 500 sheets or 20 quires; 1 quire = 25 sheets. But the basic unit of production was the sheet, or strictly speaking the *feuille d'édition*--that is, the total output for each sheet, a sheet corresponding to a signature of the gathered volume and to the two formes of type used in the printing.

Because it aimed its edition at a public of *curieux*, or free spirits who wanted to read something scandalous, the STN did not attempt to produce a luxurious book. It bought an ordinary grade of paper--*bâtard mi-fin petit format*--from an obscure paper-miller named Monnier in Sirod, a small bourg in the Franche-Comté. The *Registre de papier délivré* reveals the overall size of the pressrun: four reams (2,000 sheets) with four quires (100 sheets) as *chaperon* to cover spoilage. The accounts also show precisely how many perfected sheets were produced by the teams working at each press.

For example, the first and last sheets of Volume I appear as follows (the columns on the right refer to *rames*, *mains*, and *feuilles*):

			No. des presses	Papiers blanc			Papier imprimé		
				R	M	F	R	M	F
Déc. 7	pour Ouvrage f.	A.....	3	4	4	-	4	3	23
Déc. 8	pour.....	B.....	3	4	4	-	4	3	7
Déc. 13	.....	C.....	3	4	4	-	4	3	8
[Then skipping to the end of the volume:]									
Jan. 31	.....	X.....		4	4	-	4	2	21
Fév. 4	.....	Y.....		4	4	-	4	3	21
Fév. 5	.....	Z.....		4	4	-	4	3	17
Fév. 7	.....	Aa....	2	4	4	-	4	3	18
Fév. 12	.....	Bb....		4	4	-	4	3	18
Fév. 13	.....	titre		4	4	-			

In order to measure the rhythm of the work and to identify the men who did it, one can compare the above information with that available from another account book, the *Banque des ouvriers*, which shows who printed each sheet. It then becomes clear that on December 7, the press team of Patin and Pousillon began work on sheet A. Having received the standard allotment of paper (four reams and four quires of *papier blanc*), they produced 4,098 perfected sheets and spoiled only two sheets (their *papier imprimé* came to four reams, three quires, and twenty-three sheets.) On the next day, Vogl and Aberli started printing sheet B. They spoiled eighteen sheets, but they worked faster, because in that week they also ran off the second *forme* of sheet C. The spoilage reached a peak on January 31, when Angol and Gayet completed sheet X, having spoiled twenty-nine sheets while putting in the heaviest week of work among all the printers who labored on that volume: they produced 10,500 impressions (the first *forme* of sheet T and both *formes* of sheets U and X). The actual production of the volume therefore came to 2,071 copies.<sup>5</sup>

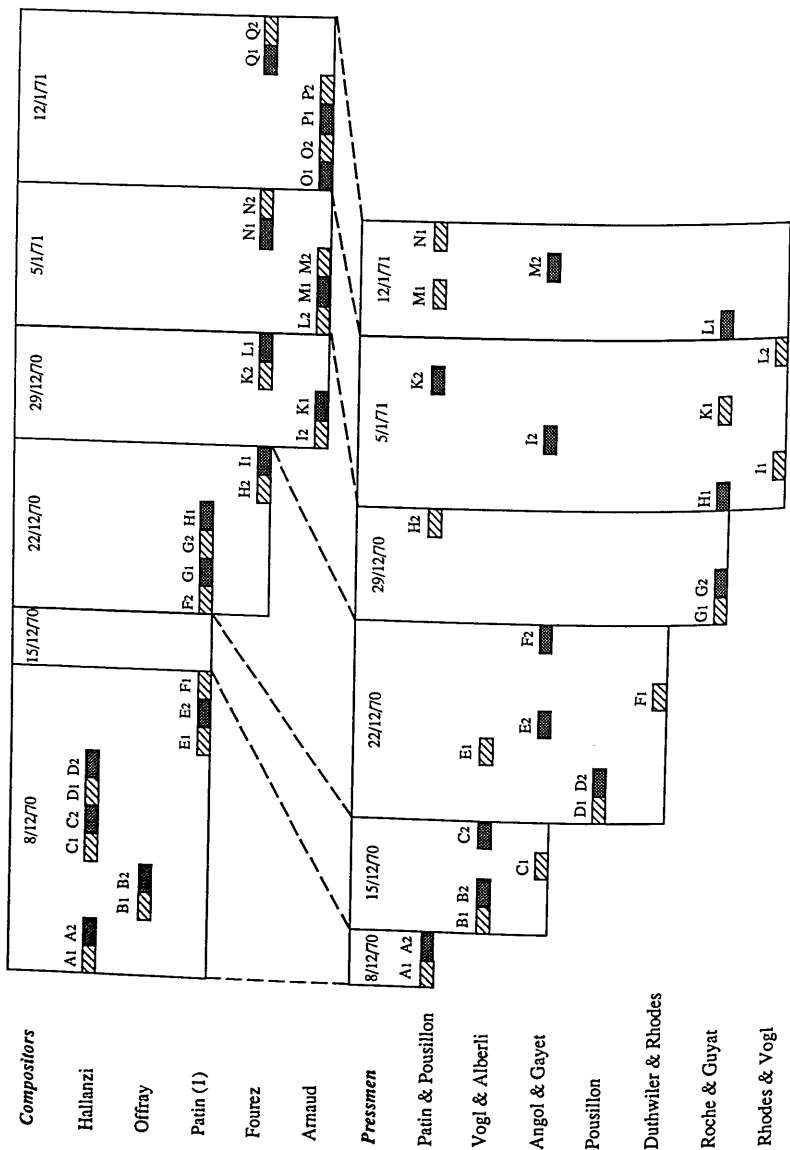
While the accounts for *Papier délivré* record the daily transformation of *papier blanc* into *papier imprimé*, the *Banque des ouvriers* shows production from the perspective of the shop foreman. He recorded payments made every Saturday for the labor performed each week on each sheet in the two halves of the printing shop, the *casse*, where the compositors worked at the type cases, and the *presse*, where the printers operated the presses, working in teams of two. The labor on the first nine sheets appears as follows:<sup>6</sup>

Composition				Tirage			
[sheet]	[worker]	[date]	[wages]	[sheet]	[worker]	[date]	[wages]
A	Hallanzi	Dec. 8	5--	A	Patin & Pousillon	Dec. 8	6--
B	Offray	Dec. 8	5--	B	Vogl & Aberli	Dec. 15	6--
C				C1	Angol & Gayet	Dec. 15	
D	Hallanzi	Dec. 8	10--	C2	Vogl & Aberli	Dec. 15	6--
				D	Pousillon	Dec. 22	6--
E	Patin	Dec. 8	5--	E1	Vogl & Aberli	Dec. 22	
F1 forme	Patin	Dec. 8	2-10	E2	Angol & Gayet	Dec. 22	6--
F2 forme	Patin	Dec. 22	2-10	F1	Duthwiler & Rhodes	Dec. 22	
G	Patin	Dec. 22	5--	F2	Angol & Gayet	Dec. 22	6--
H1 forme	Patin	Dec. 22	2-10	G	Roche & Gayet	Dec. 29	6--
H2 forme	Fourez	Dec. 22	2-10	H1	Roche & Gayet	Jan. 5	
I1 forme	Fourez	Dec. 22	2-10	H2	Patin & Pousillon	Dec. 29	6--
I2 forme	Arnaud	Dec. 29	2-10	I1	Rhodes & Vogl	Jan. 5	
				I2	Angol & Gayet	Jan. 5	6--

Compositors received two livres ten sous (in Neuchâtel livres) for every *forme* that they composed. So at the *banque* (payday) of Saturday, December 8, the foreman paid Hallanzi fifteen livres for setting all of sheets A, C, and D. He paid Offray five livres for sheet B. And he paid Patin seven livres ten sous for sheet E and the first *forme* of sheet F. At the same time in the other half of the shop, the pressmen had begun printing the *formes* supplied by the *casse*. They received one livre ten sous (in Neuchâtel livres, the equivalent in the local coinage of fifteen batz) for every thousand impressions. Thus, the foreman paid the team of Patin and Pousillon six livres for printing the 2,000 copies of both *formes* of sheet A. And in the next week he paid Vogl and Aberli nine livres for printing sheet B and the second *forme* of sheet C; and he paid Angol and Gayet three livres for the first *forme* sheet C.

The pressmen ran off sheets as the *formes* became available, so they worked on several different jobs—books, periodicals, ephemera—during the same week. Compositors labored upstream in the flow of work. They worked at their own pace, which varied enormously from day to day and man to man; and unless they were paid a fixed wage (*en conscience*) rather than by piece rates, they tended to work on one job at a time. In the case of the *Système de la nature*, however, where the foreman could cast off copy with great accuracy by following an earlier edition and the book had to reach the market exceptionally fast, the STN employed five different compositors.<sup>7</sup> They went through the text at irregular rhythms, sometimes working simultaneously, sometimes sequentially. And they fed *formes* to the pressmen in a still more erratic pattern, as is illustrated in Figure 1.

FIGURE 1: WORK-FLOW



(1) The work force includes two Patins, one at the casse and one at the presse. Presumably they were relatives.

Thus, for example, *forme* 1 of sheet I was composed by Fourez and printed by Rhodes and Vogl, while *forme* 2 of sheet I was composed by Arnaud and printed by Angol and Gayet. Then *forme* 1 of sheet K was composed by Arnaud and printed by Roche and Guyat, while *forme* 2 of sheet K was composed by Fourez and printed by Patin and Pousillon. There was no consistency in the pattern of work, either within the *casse* and the *presse* or between the compositors and the pressmen.

These details may seem esoteric, but they are worth stressing, not only for what they tell us about the nature of work in the preindustrial era but also because of their relevance to textual criticism. A good deal of Shakespearean scholarship is based on a series of inferences, which run backward from the physical character of the printed work to hypothetical pressmen, hypothetical compositors, and a hypothetical copy text--what Shakespeare must have really written. Some of those inferences may be correct, but many of them assume stable relations in the pattern of work. If the compositors and printers who produced the First Folio in Jaggard's shop were as irregular in their behavior as those in the shop of the STN a century and a half later, some readings of Shakespeare could be very wide of the mark. It may be misleading to think of a perfect reading in the first place, for we may never be able to hypothesize our way back to the original copy. Perhaps we should settle for a conception of Shakespeare as performance instead of as Ur-text.<sup>8</sup>

It can be safely assumed that the STN's workers did not worry about the implications of their work for Shakespearean scholarship. They may not have had any interest in the text of d'Holbach. But by setting that text in type and imbedding it in paper, they did their part in the diffusion of the Enlightenment. That part ended on February 16, 1771, when Patin and Guyat ran off the last sheet and the title page, which had been composed by Arnaud. The foreman then tallied the total costs of labor at the *casse* and the *presse*, and a clerk posted the totals, along with the expense for paper, to another account book, *Brouillard A*.

At this point the accounts begin to reveal more about economic history than the history of labor. In fact, they make it possible to construct a model of the *Système de la nature* as an economic speculation, and the model can be used to reveal the conditions that determined the financial strategy of Enlightenment publishing. The figures come from *Brouillard A* and concern only the first of the two volumes in the STN's edition:

#### Costs

Paper .....		498 or 64%
Composition ...	130	
Presswork .....	156	<u>286</u> or 36%
		784 Neuchâtel livres, 1,065 livres tournois



Projected Income

500 copies at 1 l. 6 s. to Boubers ...	650 livres tournois
1500 copies at 2 l. ....	<u>3,000</u>
	3,650 l.
minus costs .....	<u>1,065</u>

Projected Profit (excluding overhead) 2,585 l. (+ 243 %)

On an outlay of 1,065 livres, the publisher could make 2,585 livres in gross profit, a margin of 243 percent (or of 225 percent if one allows for overhead: see Appendix I--provided he could sell the entire edition, deliver it to his customers, and get them to pay for it. The projected profit for the two volumes was about 5,000 livres, the equivalent of approximately ten years of labor for a skilled workman like one of the STN's compositors. That was what made the illegal book trade so attractive: enormous profits in the face of a certain amount of risk.

How much risk? It is difficult to calculate the danger of marketing a prohibited book from a relatively safe haven such as Neuchâtel, a Prussian principality in Switzerland separated from France by the Jura Mountains. But the STN cut its potential losses to a minimum. It had sold a quarter of the edition in advance: Boubers's advance order for 650 livres, which covered 61 percent of the production costs. As it had set the wholesale price at the modest level of 2 livres (for Volume I), the STN had to sell only 204 more copies to break even. It could turn a profit if most of the edition were confiscated--and it did not need to worry much about the police in any case, because it sold a large proportion of its editions to wholesale dealers scattered around France's borders. They handled the smuggling. Like the STN itself, they often hired "insurers" (*assureurs*), who contracted to get the books to customers inside the kingdom for a fixed commission (often about 16 percent of the value of the goods plus normal transport costs) and who paid in full for anything they lost to the authorities.

Boubers, too, stood to strike it rich. He advanced no capital; he expected to receive his books before anyone else; and he paid for them, with a year's worth of credit, at 65 percent of the wholesale price. True, he had to organize the smuggling. But he had been working with teams of colporteurs for years, helped by his brother Denis, who operated out of Ostend and Dunkirk, and by Nicolas Gerlache, a dealer with a secret entrepôt in Metz. If Boubers retailed his books at 5 livres, (that is, 10 livres for the two-volume set, a reasonable price in view of the fact that he had sold an edition for 10 livres earlier in 1770, before the demand had crested), he would have to sell only 130 copies, little more than a quarter of his lot, to pay off his debt to the STN. The other 370 copies would bring in 1,855 livres on an investment of 650 livres--a profit rate of 285 percent, as spectacular in its way as the profit

of the STN, considering that Boubers functioned only as a middleman, without putting down any capital of his own.

The books actually passed through a whole string of middlemen, their price increasing at every point. It is impossible to follow their sale through all the capillaries of the trade, but there is enough information scattered through the archives for one to reconstruct the general pattern of their diffusion and to give examples of transactions at each stage in the diffusion process:

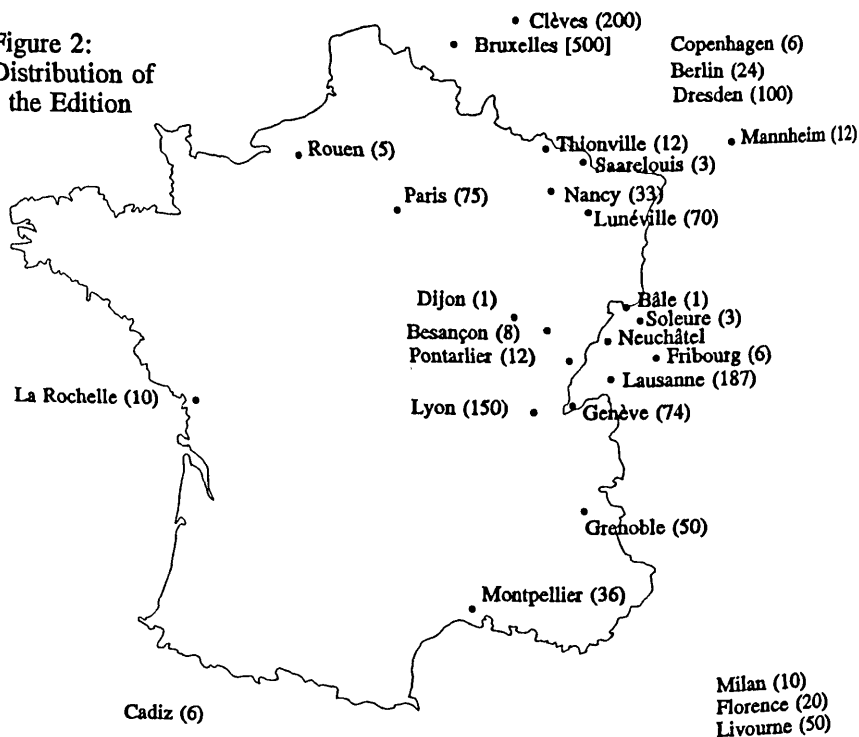
<u>Seller</u>	<u>Buyer</u>	<u>Price (Vol. I)</u>
STN	Boubers, wholesaler in Brussels	1 livre 6 sous
Boubers	Manoury, wholesaler-retailer	5 livres
Manoury	Segault, peddler in Normandy	6 livres
Segault	Individual clients in Normandy	7 livres 10 sous and 9 livres.

These sales, mentioned in letters of various dealers, all took place in the early 1770s, but they did not necessarily involve the STN's edition of the *Système de la nature*; so they give only an approximate picture of the way prices escalated as books were relayed through the underground trade. They make it clear, however, that the cost of a prohibited book could increase fivefold between the publisher and the reader. A systematic study would probably turn up tenfold increases, because prices varied enormously, especially in the remotest branches of the retail trade.

When the books finally came within the range of individual consumers, their price created a boundary to the social character of their diffusion. Skilled workmen, who made 30 or even 60 sous a day, simply could not afford to pay four or five livres for one volume of the *Système*, even if they could read it. But the book fell within the purchasing power of many people in the upper ranks of society. And if the above model corresponds to the realities of the marketplace, the publishers could count on enough purchases to make a killing. What actually happened?

*Brouillard A* includes entries for all the financial transactions of the STN from April 27, 1771, when it finished the printing, to February 3, 1773, when the register ends and a fifteen-month gap in the documentation begins. By studying the accounts, one can trace the sales of the *Système de la nature* day by day until February 1773. At that point, only 329 copies remained in stock. So the diffusion of 1,671 copies, 81 percent of the entire edition, can be mapped as in Figure 2.

Figure 2:  
Distribution of  
the Edition



Aside from the 500 copies ordered by Boubers, the sales were concentrated in four areas, which could be considered submarkets within the book trade of Europe as a whole--that is, of Enlightenment Europe, where nearly everyone among the educated elite read French:

France: 40%

The Periphery of France (Cleves, Saarlouis, Mannheim,  
Basel, Soleure, Fribourg, Lausanne, Geneva): 42%

The Mediterranean (Milan, Leghorn, Florence, Cádiz): 7%

The North (Copenhagen, Berlin, Dresden): 11%

This sales pattern was fairly typical of the STN's editions and probably of those of other Swiss houses as well; but it does not reveal the ultimate destination of the books, because most of the customers were booksellers, often wholesale booksellers, and they sometimes supplied other

dealers in other towns. It seems likely, for example, that many of the 100 *Systèmes* ordered by Walther in Dresden ended up on bookshelves in Warsaw and Saint Petersburg, and that many of the 66 that went to Grasset in Lausanne were smuggled into France. Pirate publishers usually marketed books in this manner: they would sell half or more of an edition to allied houses, who then portioned their share out to retailers within their own distribution networks. Since so many of the dealers who bought the *Système de la nature* did business in this way, operating from enclaves in Switzerland and the Rhineland, it is safe to conclude that a large majority of the copies eventually filtered into France.

How were the books marketed? The *Système* had caused such a scandal that it could not be advertised and did not need publicity in any case. But the STN had to let potential customers know that it could supply a new edition. As in the case of other dangerous works, it sent messages through the trade grapevine, relying primarily on its commercial correspondence and to a lesser extent on word of mouth. It also took care to adjust its sales pitch to its audience, even when writing to professionals. With Gosse et Pinet, a rather conservative and well-established bookseller in The Hague, it used circumlocution:

We don't know whether you include in your trade certain daring works, which alas have unfortunately all too much vogue. We will soon receive a large number of copies of the *Système de la nature*. If it suits you to take some of them, you will oblige us by telling us so at your convenience. Your reply will influence the number that we order.<sup>9</sup>

With Daudet de Jossan, a literary adventurer who peddled forbidden books under the cloak in Paris, it adopted a franker tone: "An edition is being made somewhere of the *Système de la nature*, a tasty morsel for your Parisian stomachs."<sup>10</sup> And in sending a circular to 20 other dealers, all of them trustworthy veterans of the trade, it sounded brisk and businesslike: "As this work has made a great splash, I do not doubt but that this speculation will turn to your advantage."<sup>11</sup>

Everywhere throughout the correspondence one can feel the pulsation of the profit motive. Once the publishers and booksellers woke up to the fact that an enormous demand for illegal literature lay hidden beneath the official literary market, they fell over themselves in the scramble to satisfy it. As the STN explained in a typical letter to a bookseller and smuggler in Pontarlier, "You can strike it rich with this item if you take precautions."<sup>12</sup> Almost never in their letters do the booksellers express the slightest qualms about spreading literature that attacked the official values of the Old Regime. They

wanted to make money, "the moving force of everything," as one of the STN directors put it.<sup>13</sup> So they remained relatively neutral in their role as cultural intermediaries. In fact, the STN pirated Voltaire's attack on the *Système de la nature*, a short essay entitled "Dieu. Réponse au *Système de la nature*," and included it in its edition of the *Système* in order to gain an edge on the competing editions. Then, in an effort to make the most of its coup, it pirated two full-length refutations of the *Système*: *Observations sur le livre intitulé "Système de la nature"* by G. F. Salvemini da Castiglione and *Réflexions philosophiques sur le "Système de la nature"* by G. J. von Holland. Whatever they thought of the Enlightenment when they turned over philosophical questions in their own minds, the bookmen of the Old Regime were eager to sell it in their shops--and to sell the works of its opponents, if the opportunity arose.

Many of them, however, occupied important positions within their local communities. The STN's own directors included not only Frédéric-Samuel Ostervald, the previously cited banneret of the civil militia and a member of Neuchâtel's governing Conseil de Ville, but also Jean-Elie Bertrand, Ostervald's son-in-law, who was a minister and member of the Vénéralable Classe des Pasteurs--not the perfect place from which to publish an atheistic treatise. Ostervald had cleared the edition with the local censor on the grounds that it would be marketed entirely outside the principality. But the Vénéralable Classe got wind of it, suspended Bertrand, and forced Ostervald to resign from the position of banneret. Although both men eventually reestablished themselves, the scandal damaged their prestige within the municipal elite.<sup>14</sup>

They continued, nonetheless, to sell their *Systèmes*. The market seemed insatiable, despite the appearance of a dozen editions within two or three years. But having marketed their product, the publishers faced a final problem, one that was known in the trade as *le recouvrement* (bill collecting). For it was one thing to sell a book, another to collect payment, and the STN had enormous difficulty in squeezing cash from several of its customers, beginning with Boubers.

Boubers piled speculation on speculation so audaciously that his entire business sometimes threatened to come crashing down. When critical bills of exchange became due, he cashed in on the demand for hot-selling, high-risk books. If the crisis passed or the demand had peaked, he pulled out of risky enterprises. So when the STN failed to get his 500 *Systèmes* to him on time (it shipped Volume II in May instead of February 1771, as promised), he declared the sale null and void: "As to that other work in two volumes, you promised it for February. It's too late for me to sell it now. In the case of vogueish books like that, you have to sell them while they're hot or give up on them completely."<sup>15</sup> Boubers would go through with the deal only if the STN

agreed to accept, in lieu of cash, an equivalent number of works from his own stock—including a book he had not yet printed and would not name. The STN protested: "We would never have undertaken the reprinting of that book if we hadn't received the order that you made with us in person."<sup>16</sup> But Boubers would not budge:

If I said it once, I'll say it again: that kind of item can only be sold when it is fresh. Now no one wants it any more. You made me lose a sure profit, because I counted on your promise. Your edition has been offered to me from other sources at a very low price. I don't care what you do now. . . . You have no cause to complain. I am offering to trade my best stuff against something that is going to sit unsold in my warehouse for a long time.<sup>17</sup>

Having failed to make the deadline and to get a written contract, the STN did not have much of a case. But it knew from its own sales that the demand for the *Système* was holding up, so it asked Boubers to return his copies. This, too, he refused, no doubt because he had already sold many of them and was trying to force the STN to accept better terms. Appeals to intermediaries and protectors got nowhere. Boubers would not release the books, and he would not pay for them, except in kind, with books from his own stock, which the STN did not want. Recriminations filled the mail between Brussels and Neuchâtel for years. While the STN denounced Boubers as "an equivocator and a cheat,"<sup>18</sup> he stood his ground and taunted, "It's all the same to me whether you are upright citizens or not."<sup>19</sup>

In the end, Boubers returned 180 copies (they had never got beyond Lorraine, because Boubers's agent in Metz, whom he had also failed to pay, had refused to forward them) and paid 920 livres for the other 320. By this time, he had trained his sights on larger game: nothing less than the manuscripts of Rousseau. Rousseau's death in 1778 touched off a fierce struggle to corner the market for his works among the Enlightenment publishers. Boubers lost in the bidding for the unpublished manuscripts; became embroiled in a quarrel with Rousseau's widow, Thérèse Levasseur, who was in the pay of a rival publisher; attempted nonetheless to go ahead with an edition of his own; and in the midst of the printing disappeared, unable to meet his payments. According to another Brussels bookseller, "He went bankrupt for the biggest sum that you can imagine in the book trade—more than 300,000 livres." Just before a detachment of police had closed in on his shop, Boubers fled with the plates for an illustrated edition of Raynal's *Histoire philosophique et politique de l'établissement et du commerce des Européens dans les deux Indes* and never was heard from again.<sup>20</sup>

The STN's other customers generally paid their bills on time, but some of them had troubles, too. Marginal dealers faced the same problem as Boubers, though on a smaller scale: when they felt themselves slipping toward bankruptcy, they speculated on the most dangerous books, which brought in the largest profits. And when they could not pay their bills, they threw themselves on the mercy of their creditors or took to the road, abandoning everything.

The problems of dealing with such booksellers stand out clearly in the letters of two men who confessed themselves incapable of paying for their *Systèmes de la nature*. In Clèves, J. G. Baerstecher complained that the publisher of the first edition, Marc-Michel Rey of Amsterdam, had undercut his market by issuing a cheap second edition. Besides, the book was hard going for readers in the Rhineland: "You know as well as I do that the substance of it does not go down well everywhere; the style is too elevated."<sup>21</sup> And finally, to clinch his argument, Baerstecher declared himself insolvent:

I am too weak to resist violence; and in case you try to overpower me, I will lay down my arms without attempting to defend myself. Will you be any happier and richer from my ruin? I doubt it very much. Or do you want to share your money with the lawyers? So much the worse--for both of us.

. . . . .

You know that by violence you can draw blood, but can you make any money out of it?"<sup>22</sup>

Nicolas Gerlache in Metz had even better reasons for not paying:

I am in a terribly critical situation just now. My mother is on her deathbed, and my wife is about to have a baby, and I'm afraid that my mother's death will upset my wife so badly that something will go wrong with the birth.

. . . . .

If an unwise creditor tries to bring me to court, I will burn everything I own in order to keep the law from seizing it."<sup>23</sup>

There was as much melodrama in the book trade as in the books of eighteenth-century Europe. The publishers' mail abounded in stories that end with deathbed scenes, furniture auctioned off, wives abandoned, and children reduced to beggary. Many stories were true. In an age of unlimited liability, booksellers often went under, dragging their families with them and leaving great gaps in the accounts of their suppliers.

The final balance in the STN's account for the *Système de la nature* is difficult to estimate, because the documentation gives out after 1773. It

seems likely that the book brought in a profit, perhaps something close to 50 percent of costs in two or three years, but nothing like the 243 percent envisaged in the model of costs and profits given above. Economic models are one thing, human behavior another. The potential profit in a speculation like the *Système de la nature* could not be realized in a world composed of characters like Boubers, Baerstecher, and Gerlache. In that world, the difficulty of *recouvrement* offset the profitability of best-sellers, and there was as much risk to be faced from the men who operated the system as from the authorities who tried to repress it. Had it been different, had it been easy to double one's capital in a few months by publishing atheistic tracts, a great many more would have played the game.

But many did play. Some won, some lost, and each in his own way contributed to the circulation of ideas: that was how the Enlightenment reached readers.



## APPENDIX I: OVERHEAD

Although the account books of the STN mention occasional payments for candles, ink, ink ball pelts, rent, presses, and fonts of type, they do not present them in a manner that lends itself to an accurate calculation of overhead costs. The modern concept of overhead probably did not exist among eighteenth-century printers. But the printers knew very well that their work involved a significant load of incidental expenses. In French-speaking areas, they referred to those expenses as *étoffes*. Thus the entry on *étoffes* in the printer's manual by A.-F. Momoro:

*Ettoffes* are non-durable goods necessary for printing. The term *étoffes* includes tympan blankets, tympan, wool, the wood of the printer's balls, the leather of the balls, gray paper for the underlays, oil for the balls, and olive oil. Without those items, one cannot print at all; and they get worn out every day; they must be constantly renewed. Of course they cost money, but they are a prime necessity. With good *étoffes*, one can do good work; but without *étoffes*, or rather with supplies of poor quality, one cannot produce anything worthwhile.

A printer who wants to see his presses turn out handsome work never spares the *étoffes*; he does not even allow the pressmen to work with *étoffes* that are slightly worn.<sup>24</sup>

Because the expenditure on *étoffes* varied throughout the year and from year to year, printers adopted a rule of thumb in order to incorporate it into their calculations of the cost of a *feuille d'édition*: they set it at half the combined cost of composition and presswork. For example, in 1780 the directors of the STN asked a confidant, the Parisian printer Jacques-François Pyre, to provide them with information on printing costs in Paris. He replied as follows:

As to the cost of printing commissioned by booksellers in Paris, one usually reckons it in the following manner: first one determines the cost of printing [*sic*: a slip for composition] and presswork, and then one takes half of that sum for the *étoffes*—that is, for wear and tear of the type, the press, and so on—and a third for the profit. For example, in the case of a sheet of ordinary pica without notes, composition normally comes to 8 livres tournois and

presswork to 2 livres 10 sous for a thousand impressions, which makes 5 livres with the reiterations [the printing of the second *forme*]:

Composition	8 l.
Tirage	<u>5</u>
Total	13
Moitié	6 l. 10 s. <i>pour les étoffes</i>
Tiers	<u>4 l. 5 s.</u>
	23 l. 15 s.

This example is valid for all kinds of type, no matter what the difficulty of the work. However, if the composition costs are too great, owing to complications in the typesetting, one usually reduces the third that the printer takes for his profit—that is, one bargains with him. Such is the best and the surest way to calculate the costs of a job here [in Paris].<sup>25</sup>

Pyre's calculations are confirmed by those of Eméric David, the printer of Aix-en-Provence, who filled a notebook with typographical observations during a journey through France and Switzerland in 1787. David set the costs of a *feuille d'édition* printed on *papier ordinaire* at a pressrun of 750 (one and a half reams) as follows:<sup>26</sup>

Composition	8 l.
Tirage	5
1 rame 1/2 de papier à 12 l.	18
Caractère, étendage, etc.	<u>6</u>
	37 l.

That is, David set the incidental costs (6 livres) at roughly half the combined cost of the composition and presswork (13 livres), precisely as Pyre did, except he rounded off instead of including sous in his calculation. Pyre, too, did some rounding: his calculation of profit (4 livres 5 sous) is not exactly a third of the cost of composition and presswork (13 livres). One can find a few variations on these figures among the thousands of letters in the STN archives (for example, a letter of the STN to the Société typographique de Berne of April 4, 1774, where the various *faux frais* are set at only a quarter of the labor costs), but these proportions seem to have prevailed throughout the printing trade in France.

The French practice coincided fairly closely with that of contemporary London printers, who favored the traditional "third" in setting costs—that is, they added composition and presswork, halved the sum, and used that half to

cover overhead and profits, which therefore came to a third of their total bill (assuming they did not pay for the paper.)<sup>27</sup> But the "third" mentioned by Pyre represents a different calculation: one-third of the composition and presswork, which the printer added to his bill in order to cover his profit *after* taking half of the labor costs to cover overhead.

If this way of reckoning costs were applied to the STN's printing of the *Système de la nature*, Vol. I, its overhead, at least in the eighteenth-century sense of *étoffes*, would come to 143 Neuchâtel livres or 191 livres tournois. That was a modest sum considering the scale of the enterprise, which the STN conducted both as a printer and as a publisher. If one subtracts 191 l. in *étoffes* from the projected profit of 2,585 livres, 2,394 livres remain--that is, a profit of 225 percent on an investment of 1,065 livres. Overhead was too small an ingredient of manufacturing costs to have much relevance to the general model of the *Système de la nature* as a speculation.

## APPENDIX II: PAPER

The Account for Paper

Papier de Monnier bâtard mi-fin, petit format

1770

Nov 15 Reçu 12 balles de 16 rames..... 192 R

Mars 1 Reçu 6 balles..... 90 R

DELIVRE										
				Numéro des presses	Papier blanc			Papier imprimé		
					R	M	F	R	M	F
Dec	7	pour Ouvrage F.	A	3	4	4	-	4	3	23
	8	"	B	3	4	4	-	4	3	7
	13	"	C	3	4	4	-	4	3	8
	15	"	D		4	4	-	4	3	18
	17	"	E		4	4	-	4	3	8
	21	"	F	2	4	4	-	4	3	5
	24	"	G		4	4	-	4	3	13
	27	"	H		4	4	-	4	3	18
	31	"	I	2	4	4	-	4	3	20
1771 Jan	2	"	K	4	4	4	-	4	3	15
	4	"	L	2	4	4	-	4	3	16
	7	"	M	2	4	4	-	4	3	21
	8	"	N		4	4	-	4	3	15
	14	"	O		4	4	-	4	3	10
	18	"	P		4	4	-	4	3	11
	21	"	Q		4	4	-			
	22	"	R		4	4	-			
	25	"	S		4	4	-	4	3	17
	26	"	T		4	4	-	4	3	7
	30	"	U		4	4	-	4	3	8
	31	"	X		4	4	-	4	2	21
Fév.	4	"	Y		4	4	-	4	3	21
	5	"	Z		4	4	-	4	3	17
	7	"	Aa	2	4	4	-	4	3	18
	12	"	Bb		4	4	-			
	13	"	titre		4	4	-			

The production costs of books in early modern Europe differed fundamentally from those of today. At a time when every sheet of paper was made individually from pulped rags by highly skilled craftsmen, paper usually cost as much as the labor of the compositors and the pressmen combined. In large editions, it could represent three-quarters of the printer's expenses. So printers kept careful accounts of their paper. The STN's *Registre de papier délivré* provides a record of how its pressmen transformed each sheet of Monnier's *bâtard mi-fin, petit format* from *papier blanc* to *papier imprimé*, while printing the *Système de la nature*.

The three columns on the right in Figure 3--under R, M, and F for *rames*, *mains* and *feuilles*--show the actual output of perfected sheets and so, by extension, the rate of spoilage. Thus the pressmen who printed sheet A at press number 3 produced 2,098 perfected sheets (4 reams, 3 quires, 23 sheets), spoiling only 2 of the 2,100 sheets (4 reams, 4 quires) given to them. By consulting the *Banque des ouvriers* (Appendix III), one can determine who those pressmen were: Patin and Pousillon. It thus becomes clear that, as one might expect, the greatest spoilage (29 sheets of signature X) occurred in the week of the greatest production: the week of February 2, 1771, when the team of Angol and Gayet printed the first *forme* of sheet T and both *formes* of sheets U and X, an output of 10,500 impressions. The spoilage of sheet X meant that the actual size of the printing came to 2,071 copies rather than the round figure of 2,000, which served as the ostensible production goal.

The gap between the actual and the ostensible pressruns is worth noting, because the extra copies could make a crucial difference to the profit margin. In fact, the surplus sheets printed from the *chaperon*--the extra quires allotted to cover spoilage, usually at the rate of one quire for every ream of the pressrun, or 4 quires in the case of the *Système de la nature*--were not always used as *défets*, to complete deficient copies or to serve as scrap paper and packaging (*maculature*). By printing a few extra sheets (in this case, for example, sheets F and X) publishers could produce scrap editions. A lively trade in *scrap* books grew up in response to the demand for best-sellers like the *Encyclopédie*, and specialists like Batilliot of Paris made large sums by buying up the leftover sheets that cluttered printers' warehouses everywhere in France and the surrounding territory.<sup>28</sup> Many of those scrap editions now sit proudly in rare book rooms, where they can provide endless puzzles for bibliographical investigation.

Ouvrage de Boubers à Bruxelles

	Composition	[date]	[gages]		Tirage	[date]	[gages]
A	Hallanzi	Decembre 8	5--	A	Patin & Pousillon	6	6--
B	Offray	8	5--	B	Vogl & Aberli	15	6--
C	Hallanzi	8	10--	C 1 2	Angol & Gayet Vogl & Aberli	15 15	6--
D				D	Pousillon	22	6--
E	Patin	8	5--	E 1 2	Vogl & Aberli Angol & Gayet	22 22	6--
F 1 2	Patin Patin	8 22	2-10- 2-10-	F 1 2	Duthwiler & Rhodes Angol & Gayet	22 22	6--
G	Patin	22	5--	G	Roche & Guyat	29	6--
H 1 2	Patin Fourez	22 22	2-10- 2-10-	H 1 2	Roche & Guyat Patin & Pousillon	Janv. 5 29	6--
I 1 2	Fourez Arnaud	22 29	2-10- 2-10-	I 1 2	Rhodes & Vogl Angol & Gayet	5 5	6--
K 1 2	Arnaud Fourez	29 29	5-- 5--	K 1 2	Roche & Guyat Patin & Pousillon	5 5	6--
L 1 2	Fourez Arnaud	29 1771 Janv. 5	2-10- 2-10-	L 1 2	Roche & Guyat Rhodes & Guyat	12 5	6--
M	Arnaud	5	5--	M 1 2	Patin & Pousillon Angol & Gayet	12 12	6--
N	Fourez	5	5--	N 1 2	Patin & Pousillon Angol & Gayet	12 19	6--

### APPENDIX III: LABOR (Continued)

O	Arnaud	12	10--	Guyat & Roche	19	6--
P	Arnaud	12	10--	O 1	19	6--
				O 2		
Q	Fourtez	12	5--	P 1	26	6--
				P 2		
R	Arnaud	12	5--	Q 1	26	6--
				Q 2		
S		12	5--	R 1	26	6--
				R 2		
T	Arnaud & Patin	26	15--	S 1	26	6--
				S 2		
U		26	15--	T 1	26	6--
				T 2		
X	Arnaud & Patin	26	2-10-	U	2	12--
				X		
Y	Arnaud	2	5--	Y 1	2	6--
				Y 2		
Z	Arnaud & Patin	2	2-10-	Z	9	6--
				Z		
Aa	Arnaud	2	5--	Angol	16	6--
				Aa 1		
Bb	Arnaud	9	5--	Aa 2	16	6--
				Bb 1		
Titre	Arnaud	9	5--	Bb 2	16	6--
				Titre		
				Composition	£ 130	
				Tirage ci-contre	156	
					£ 286	
				Rapporté au Bd. F.o.	83	
					£ 156	

Figure 4, a page (folio 71) from the *Banque des ouvriers* kept by the STN's shop foreman, provides an inside view of work in the printing shop and of the history of work itself. Every Saturday, or *journée de banque*, the foreman recorded the amount of work done on each job by each worker during the preceding week and the amount that each worker received in pay from the cash box. The structure of the document is revealing in itself, because the foreman organized his accounts in a way that corresponded to the organization of labor on the shop floor. He divided the page vertically into two halves, which represent the basic division of the work force into *la casse* (compositors) on the left and *la presse* (pressmen) on the right. The columns of letters on the left side of each half stand for sheets, the basic unit of production; so one can follow the labor on each sheet and on the volume as a whole, week by week, as it progressed through the *casse* and the *presse*.

When the volume was completed, the foreman tallied the sums paid for presswork on the right, 156 livres, and added them to the sum of the composition on the left, 130 livres. The total, 286 livres, was posted to the account book known as the *Brouillard*: hence the note at the end, "*Rapporté au Bd., fo. 83.*" That sum can be found in the *Brouillard* itself, on folio 83, exactly as indicated, in an entry that debits the general account of the *Système*: "*Ouvrage de Boubers doit aux suivants . . . à Caisse 286 l. pour composition et tirage du tome 1, apert Banque des Ouvriers fo. 71.*" The STN's accountant, following the standard techniques of double-entry bookkeeping, had debited the account for the *Système* 286 livres and had credited the same amount to the account for the cash box (*Caisse*) from which the workers had been paid. Each account in turn was posted to a general registre, the *Grand Livre*, where the directors of the STN could check the state of each of the dozens of accounts that collectively constituted their business.

Taken as a whole, therefore, folio 71 of the *Banque des ouvriers* represented a general unit of work--the total labor costs for producing Volume I of the *Système de la nature*, or in the printer's jargon, an *ouvrage*, as indicated by the title at the top of the page, *Ouvrage de Boubers*. The foreman organized his accounting according to *ouvrages*, or jobs, each of which corresponded to one of the STN's accounts. So the labor on the *Système* could be conjugated through the STN's books by means of "posting," or transmitting sums through increasingly abstract levels of reckoning: from the *Banque des ouvriers* to the *Brouillard* and the *Grand Livre*. At the same time, the *Ouvrage de Boubers* could be broken down into smaller units, each of which had a value expressed in *livres tournois*: the overall work at the *casse* and the *presse* and then, within each of them, the labor on individual sheets or on the two *formes* used to produce each sheet.

The pieces fit together perfectly in a highly integrated structure, but the structure existed only in the rational world of accountancy, where the accountant himself had an account and disappeared in the abstractions of his



own creation. The men who actually manufactured the *Système de la nature* belonged to another world, the world of the printing shop, which was constantly erupting in jokes, brawls, and breaks for rounds of drinks in the tavern. Despite the disparity between the irregular behavior of the workers and the mathematical patterns of the account books, one can nonetheless catch something of the rhythm of labor in the printing shop. Closer analysis of the *Banque des ouvriers* and the account for *Papier délivré* makes it possible for one to measure the flow of work on the *Système* with considerable precision (see Figure 1).

It should be remembered, however, that the above documents only concern labor performed on the *Système de la nature*. Pressmen worked on many other jobs each week, because they printed *formes* as they became available from the compositors; and the compositors themselves frequently shifted from job to job. Also, the account for *Papier délivré* has some gaps: it does not give the output of perfected sheet in four cases, and it gives the number of the press at which the work was performed in only nine cases. So these documents do not provide enough information for one to measure the weekly output and income of every worker, even though they make it possible for one to reconstruct the pattern of labor that went into the *Système*.

Whatever his exactitude in keeping accounts, the foreman does not seem to have managed the labor very efficiently. As Figure 1 shows, the compositors kept getting far ahead of the printers, and the shop's general output varied erratically from week to week, both at the *casse* and at the *presse*. In the first week, which ended on December 8, 1770, three compositors completed 11 *formes*, while one press team printed only 2 *formes*. In the second week, the compositors did no work at all on the *Système*, while two other teams of pressmen ran off only four *formes*. By January 12, 1770, the *casse* was seven *formes* ahead of the *presse*. So the foreman had to shift a heavy proportion of the *presse* to the *Système* in late January and early February in order to complete the volume by February 16, which was far behind the deadline set by Boubers.<sup>29</sup>

Output looks equally erratic when studied at the level of individual workers. By casting off copy from the printed text supplied by Boubers, the foreman could have different chunks of the text set simultaneously by different compositors. Hence the output in the week of December 8, when Hallanzi (working with *paquetiers*?) set 6 *formes*, Offray set 2, and Patin set 3. In the end, the text passed through the hands of five compositors, each of whom worked at his own pace. It seems likely, moreover, that they occasionally collaborated in combinations that can only be guessed at. In the week of January 26, the foreman credited Arnaud and Patin together with composing 7 *formes*: presumably they worked with one or two *paquetiers*, or compositors, who set only pages, which freed Arnaud and Patin to concentrate on the more skilled work of imposition and complex corrections. So the typesetting did not

follow any distinct pattern. Different men, and combinations of men, worked at different rhythms on different segments of the text.

The presswork was just as irregular. Output for the *presse* as a whole varied from two *formes* (4,000 impressions) to seven *formes* (14,000 impressions) per week. The pressmen printed formes as they became available from the *casse*, so the printing was scattered throughout the presses, and individual compositors did not feed work to individual printers in a consistent manner. In fact, the teams of pressmen often split and re-formed, presumably as a result of absenteeism and turnover in the work force. Thus Pousillon worked with Patin in the week of December 8, then worked by himself at half press in the week of December 22, and took up with Patin again in the week of December 29; and Rhodes worked with Duthwiler in the week of December 22 and with Vogl in the week of January 1, 1771.

The press numbers (*numéros des presses*) and the dates of the distribution of "*Papier blanc*" given in the account for "*Papier délivré*" make it possible to follow the labor of the pressmen still more closely. One might expect the printers to remain at a given press and to run off whatever *forme* arrived at that press from the compositors working upstream to them. But the printers of the STN apparently shifted from press to press as well as from job to job. Assuming the press numbers indicate who worked at what press, it seems that sheets A, B, and C were printed at press 3 by three different teams. Patin and Pousillon began to print sheet A on December 7, 1770, and finished by payday, December 8. Vogl and Aberli began to print sheet B on December 8 and finished it well before the next payday, December 15. At that point apparently the foreman shifted them to another job at another press. Soon afterward Angol and Gayet became free, and the foreman put them to work on press 3 printing the first *forme* of sheet C, which they, too, finished a few days before December 15. So the foreman shifted them to another job. Then, as Vogl and Aberli in turn became free, he put them back on press 3, where they printed the second *forme* of C in time to collect for it on the same payday. Presumably the labor on make-ready made it easier to maintain the printing of a given job at the same press and to shift press teams to other presses as *formes* from other jobs became available.

Admittedly, this interpretation involves some speculation. But the way the accounting was kept for *Papier délivré* suggests that the four reams, four quires were allotted to given presses on given days; and the *Banque des ouvriers* indicates that printers moved around those presses in response to the pressure of the available work. The pattern can be seen more clearly during the weeks between December 27, 1770, and January 12, 1771, when the *Système* was being printed at press 2 and press 4. The following table shows which printers worked at those presses from the dates when the paper was distributed and what formes they printed.

Distribution of Paper	Number of Press	Printers	Formes	Work Completed by Pay-day on
Dec. 31	2	Rhodes & Vogl	I1	Jan. 5
Dec. 31	2	Angol & Gayet	I2	Jan. 5
Jan. 2	4	Roche & Guyat	K1	Jan. 5
Jan. 2	4	Patin & Pousillon	K2	Jan. 5
Jan. 4	2	Roche & Guyat	L1	Jan. 12
Jan. 4	2	Rhodes & Vogl	L2	Jan. 5
Jan. 7	2	Patin & Pousillon	M1	Jan. 12
Jan. 7	2	Angol & Gayet	M2	Jan. 12

It seems clear from this table that the workers shifted frequently from press to press. For example, Rhodes and Vogl finished *forme* I1 at press 2 a day or two after December 31 and then went to another job at another press. Angol and Gayet succeeded them at press 2, where they printed I1. And then Rhodes and Vogl returned to press 2 and printed *forme* L2 in time to collect for it and for I2 on payday, January 5. But why did the foreman not keep them at press 2 throughout that week? Presumably a *forme* of another job became available; he did not want to delay work on it; and no other pressmen were free to print it--that is, the compositors produced more than the pressmen could handle. The two halves of the shop seem to have been out of balance, and the foreman directed the flow of work as best he could by shifting around printers.

Whatever its rationale, the pattern, or lack of pattern, suggests that work did not flow smoothly through the shop. It went by fits and starts, in currents and eddies, according to rhythms set by the workers themselves and despite the foreman's efforts to channel it in directions of his own choosing. Other shops may have operated differently. But work itself was different 200 years ago from what it is today--that seems to be the most general implication of these highly specific data.

## NOTES

1. This paper was originally given as a lecture at the University of Michigan in 1976. Later versions were presented at the Enlightenment Congress in Budapest in 1987 and the Library of Congress Symposium on Publishing and Readership in Revolutionary France and America in 1989.

2. The best bibliographical survey of all the Holbachian works is still Jerom Vercruysse, *Bibliographie descriptive des écrits du baron d'Holbach* (Paris: Lettres Modernes, 1971). The information on Rey's second edition comes from a letter to the Société typographique de Neuchâtel by J. G. Baerstecher, a bookdealer in Clèves, dated November 30, 1771: "After having published the first edition, M. Rey of Amsterdam immediately put out a second one and set its price so low that it is impossible for me to sell yours in competition with it" (Papers of the Société Typographique de Neuchâtel [referred to henceforth as STN], Bibliothèque publique et universitaire, Neuchâtel, Switzerland). These archives are the main source for this study. The letters are classified by the names of the STN's correspondents.

3. Samuel Fauche to STN, Nov. 24, 1770.

4. Boubers's dossier in the STN papers contains 35 letters, which are full of information about the speculation; but they are so tendentious that they have to be read with a good deal of skepticism—and also in conjunction with the STN's own letters as well as those of its other correspondents, notably Charles Triponetty, a merchant who specialized in the lace trade and who kept an eye on Boubers for the STN, and Gosselin père et fils, merchants in Lille, who also represented the STN's interests.

5. Output varied enormously in printing shops during the era of the common press. Whether one studies the same team of printers over several weeks or several teams during the same week, the production could double or halve. Donald F. McKenzie found that weekly averages of impressions per day at the Cambridge University Press in 1700 fluctuated between 3,450 and 1,566: McKenzie, *The Cambridge University Press 1696-1712* (Cambridge: Cambridge University Press, 1966), vol. 1, chaps. 3 and 4. The above figures on the output of printers do not represent their entire labor for a given week, because they usually worked on other jobs beside the *Système de la nature*. In 1770-71, the STN's foreman organized his accounts by the job rather than by the total amount of work done in the shop for a week. The latter system was adopted by Barthélemy Spineux, the foreman who directed the shop in the late 1770s and 1780s, when weekly output per worker can be measured more accurately. See Jacques Rychner, "Running a Printing House in Eighteenth-Century Switzerland: The Workshop of the Société Typographique de Neuchâtel," *The Library*, 6th series, vol. 1, no. 1 (1979), pp. 1-24; and Robert Darnton, *The Business of Enlightenment: A Publishing History of the Encyclopédie, 1775-1800* (Cambridge, Mass.: Harvard University Press, 1979), chap. 5.

6. I have transcribed the manuscript without emendation and have enclosed my own additions in square brackets. The two Patins who appear among the workers seem to have been a father and a son who tramped around the printing shops together.

7. In the unusually productive week of Jan. 26, 1771, the foreman recorded payments to "Arnaud et Patin" for the composition of sheets S, T, U, and *forme* 1 of sheet X. This entry could indicate that the foreman paid Arnaud and Patin the allotted sum per *forme* and that they then distributed the money among other workers, presumably *paquetiers*, who set the type for pages under their direction, leaving them to do the more complicated task of imposition.

8. For a general discussion of these issues, see Donald F. McKenzie, "Printers of the Mind: Some Notes on Bibliographical Theories and Printing-House Practices," *Studies in Bibliography* 22 (1969), pp. 1-75.

9. STN to Gosse et Pinet, Nov. 5, 1770.

10. STN to Daudet de Jossan, Oct. 30, 1770.

11. Circular letter addressed to twenty booksellers in the STN's *Copie de lettres*, March 14, 1771.

12. STN to Faivre, Sept. 10, 1771.

13. Abram Bosset de Luze to STN from Paris, April 10, 1780. In a similar letter of March 31, 1780, written to the home office during this business trip to Paris, Bosset insisted: "But, I must emphasize once again, our problem is not to find wonderful, magnificent works to print. The key to everything, the goal that we must keep in mind at all times, is before printing any work to make sure that we can get some cash for it." For a further discussion of the values and the profit motives among eighteenth-century booksellers, see Robert Darnton, "The World of the Underground Booksellers in the Old Regime," in *Vom Ancien Regime zur Französischen Revolution. Forschungen und Perspektiven*, ed. Ernst Hinrichs, Eberhard Schmitt, and Rudolf Vierhaus (Göttingen: Vandenhoeck und Ruprecht, 1978), pp. 439-478.

14. Ostervald to Lentulus, the governor of the principality of Neuchâtel and Valangin, July 4, 1771. On the local context of this affair, see Charly Guyot, "Imprimeurs et pasteurs neuchâtelois: l'affaire du *Système de la nature* (1771)," *Musée neuchâtelois* 33 (1946), pp. 74-81 and 108-116.

15. Boubers to STN, April 7, 1771.

16. STN to Boubers, Oct. 27, 1771.

17. Boubers to STN, Oct. 4, 1771.

18. STN to Charles Triponetty, a merchant in Brussels who tried to arrange a settlement, Jan. 6, 1772.

19. Boubers to STN, May 17, 1776.

20. Delahaye to STN, Jan. 2, 1783. For an account of Boubers's imbroglis from a Belgian point of view, see Jeroom Vercruysse, "L'édition neuchâteloise du *Système de la nature* et la librairie bruxelloise," in *Aspects du livre neuchâtelois*, ed. Jacques Rychner and Michel Schlup (Neuchâtel: Bibliothèque publique de l'université de Neuchâtel, 1986), pp. 77-88.

21. Baerstecher to STN, Nov. 30, 1771.

22. Baerstecher to STN, Dec. 23 and Dec. 15, 1772.

23. Gerlache to STN, July 6, 1772, and April 17, 1773.

24. Antoine-François Momoro, *Traité élémentaire de l'imprimerie, ou le manuel de l'imprimeur* (Paris: Veuve Taillard et Fils, 1793), pp. 167-168.

25. Pyre to STN, April 15, 1780.

26. "Mon Voyage de 1787," Bibliothèque de l'Arsenal, ms. 5947, fo. 50 verso.

27. See William M. Sale, *Samuel Richardson: Master Printer* (Ithaca, N.Y.: Cornell University Press, 1950), p. 24. Richardson set his profit at half the combined costs of composition, presswork, and proof reading. Sale makes no mention of any calculation for overhead, so it would seem that the English equivalent of "étoffes" came out of the provision for profit. Hence the disparity between the profit margin in London (half the labor costs) and in Paris (one third of the labor costs on top of the half taken to cover "étoffes.") However, the French sources do not refer to proofreading as a factor in the printer's price per sheet, while Richardson allowed for it in his calculations: he paid a workman 2 d. to the shilling on the price paid to the compositor.

The shop foreman usually read proof at the STN, and so the cost of that function was absorbed in his salary, which was fixed at the beginning of the year.

28. See Robert Darnton, "A Bibliographical Imbroglia: Hidden Editions of the *Encyclopédie*," in *Cinq siècles d'imprimerie genevoise*, vol. 2, ed. Jean-Daniel Candaux and Bernard Lescaze (Geneva: Société d'histoire et d'archéologie, 1981), vol. 2, pp. 71-101.

29. Of course the irregularities in the labor on the *Système* could have been compensated by work on other jobs underway at the same time. So what appears to be irrational at the level of the "*ouvrage*" could be efficient at the level of the shop: that was the point of the system of concurrent production, which seems to have been adopted in most early modern printing shops. But the STN needed to print the *Système* quickly in order to meet the deadline set by Boubers. Furthermore, its correspondence shows that it was dissatisfied with the work of its foremen until later in the 1770s, when the talented *prote* from Liège, Barthélemy Spineux, took over the direction of the shop. Spineux changed the system of accounting in the *Banque des ouvriers* so that entries were arranged by all the work done throughout the shop in a given week, rather than all the work done on a given job over several weeks—an indication that he sought to balance output at the shop level. On Spineux and the general character of printing at the STN, see the superb studies by Jacques Rychner: "Fonctions et tribulations d'un *prote* au XVIIIe siècle: Jacques-Barthélemy Spineux," in *Aspects du livre neuchâtelois*, ed. Jacques Rychner and Michel Schlup (Neuchâtel: Bibliothèque publique de l'université de Neuchâtel, 1986), pp. 187-269; and Rychner's "Running a Printing House in Eighteenth-Century Switzerland: The Workshop of the Société Typographique de Neuchâtel," *The Library*, 6th series, 1 (1979), pp. 1-24.