

**ABSTRACT** This paper describes the role of market research firms in shaping the actions of key players in the pharmaceutical arena. It focuses on strategies for marketing novel antidepressants (selective serotonin reuptake inhibitors, SSRIs) to doctors in Buenos Aires during the Argentine financial crisis of 2001, posing the question of whether increased antidepressant sales were due to the social situation or to promotional practices. This case demonstrates how 'pharmaceutical relations' – interactions between doctors and pharmaceutical companies – are structured by a gift economy whose effects are monitored through the sales numbers produced by database firms. It suggests that the use of these numbers takes on special importance given the distinctiveness of both the Argentine context and the antidepressant market. More generally, the case points to the interpretive flexibility of psychotropic medication. In the Argentine setting, doctors' prescription of SSRIs was dependent neither on a diagnosis of depression nor on a biological understanding of mental disorder. These drugs found a different means of entering the professionally mediated marketplace: doctors understood and used SSRIs as a treatment not for a lack of serotonin in the brain, but for the suffering caused by the social situation – the sense of insecurity and vulnerability that the economic and political crisis had wrought.

**Keywords** audit, marketing, neoliberalism, pharmaceuticals, psychiatry

## The Anxieties of Globalization: Antidepressant Sales and Economic Crisis in Argentina

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In August 2001, announcements of 'Anxiety Disorders Week', an information campaign designed to bring patients to hospitals where they could consult with experts, appeared in a number of Buenos Aires newspapers. 'One of every four Argentines suffers from them,' one article proclaimed: 'panic attacks, phobias. Specialists say that they are increasing; factors such as insecurity or incertitude with respect to the future can influence them' (Cecchi, 2001: 19). The reference to uncertainty and insecurity was apt: the country was entering its fourth year of recession, the unemployment rate had reached 20%, and the widely tracked index of *riesgo-pais* or 'country-risk' was spiking to record levels each day. And the campaign was successful beyond the expectations of its sponsors: the city's hospitals were

inundated with patients complaining of symptoms of stress. The articles did not mention that the campaign had been co-sponsored by the domestic pharmaceutical firm Bago, makers of Tranquilil-brand alprazolam. Since it was still prohibited to market a drug directly to the general public in Argentina, an alternative was to 'grow the market' by making general practitioners and patients more aware of the illness. In an article that appeared two months later in the daily *Clarín* on the role of the growing economic crisis in increasing tranquilizer sales, a Bago sales manager reported that August had been a month of record growth for Tranquilil. The piece was subtitled, 'Illnesses brought on by the crisis are increasing medical visits and anxiolytic use' (*Clarín*, 2001).<sup>1</sup> What might have been seen as evidence of the success of the Bago information campaign was instead cited as a sign of the nation's social and psychic crisis.

It turned out that while anxiety medication sales were increasing, antidepressant sales were rising even faster. While the Argentine pharmaceutical market as a whole shrank over the years of hyper-recession between 1998 and 2001, income from antidepressant sales jumped markedly: 16.5% from June 2000 to June 2001 alone.<sup>2</sup> In this paper I pose the question of how to explain these figures: were they the result of the economic crisis or of pharmaceutical marketing practices? To answer this question requires an investigation into the structure of the Argentine pharmaceutical market, the character of the relations between doctors and pharmaceutical firms, and the role of market research tools in directing these relations.

I focus on a specific market research tool – the prescription audit – in order to show how this market was constituted and how it shaped the decisions of key actors. Relations between doctors and firms took on an added importance in doctors' prescription decisions given the distinctiveness of the Argentine setting: the prevalence of unlicensed copies of drugs, the oversupply of doctors in the labor market, and – in the field of mental illness – an epistemological framework oriented toward social and psychic rather than neural explanatory models. The relation between antidepressant sales and illness prevalence in this milieu also sheds light on an arena of controversy in US and European biomedicine: whether the availability and promotion of psychotropic medications illegitimately 'produces' the illnesses they are meant to treat. The Argentine case indicates that not only marketing practices but also regulatory demands and professional cultures play key roles in the growth of flexible diagnostic identities such as depression.

More generally, the centrality of audit firms' sales data in shaping expert practices helps to frame recent global transformations in the government of health and welfare. In the absence of publicly available knowledge about illness prevalence, these numbers form what I term a 'neoliberal epidemiology' that plays an especially important role in monitoring and regulating health expertise in places such as Argentina, where state-based social welfare programs have been dismantled in recent years.

## The Rise of Depression

The legitimacy of demand for selective serotonin reuptake inhibitors (SSRIs) is in question in part because the curative properties of these drugs seem to transmute depending on what illness they are supposed to treat, as well as on the expert's model of disorder. There is, then, a complex relationship between the illness population and the drug itself. The World Health Organization and other international bodies have pointed to an apparent epidemic of affective disorders worldwide, citing figures indicating that 10% of the population is expected to experience depression at some point in their lives (World Health Organization, 2001b). As the historian of psychopharmacology David Healy and others have pointed out, this is an especially impressive figure given how rare a diagnosis 'depression' was as recently as 30 years ago (Healy, 1997). There are at least three ways of interpreting the apparent rise in depression's prevalence in Europe and the USA over the past few decades. One is to argue that the disorder has remained more or less constant over historical periods and across geographical divides, but that its true prevalence is only now at last being recognized – this is the general position of cosmopolitan psychiatric epidemiology. Certain sociological approaches, such as that of Alain Ehrenberg, claim that the rise in depression prevalence is a sign of changing cultural models of the self, given recent social transformations and new personal demands (Ehrenberg, 1998). A third argument, made by Healy, Mikkel Borch-Jacobsen, and others, is that the rise in 'depression' can most likely be attributed to the success of marketing practices that promote the expansion of the diagnosis of depression in order to increase the prescription of antidepressants (Healy, 1997; Borch-Jacobsen, 2002). As Healy puts it, 'we are at present in a state when companies can not only seek to find the key for the lock but can dictate a great deal of the shape of the lock to which a key must fit' (cited in Borch-Jacobsen, 2002).

The Argentine case poses another possibility, though one related to the latter argument: that the source of the rise in depression in Northern countries has to do not only with such marketing pressure but also with the regulatory demand that prescription drugs correspond to specific illnesses.<sup>3</sup> In Argentina, one finds the rapid expansion of antidepressant sales without, it seems, a concomitant increase in the diagnosis of depression as a discrete clinical entity.<sup>4</sup> The same drugs that in the USA are associated with intervention into the biological condition of 'depression' are widely prescribed in Argentina as treatments for socially induced stress. When I posed the question of why SSRI sales were increasing, not only social critics, but also pharmaceutical industry representatives pointed to turmoil caused by the deteriorating social and economic conditions of the country.

In an interview in Buenos Aires in July 2001, for example, an executive from a market research firm suggested a couple of reasons for the phenomenon of rising antidepressant sales: on the one hand, older anxiolytics were losing market share to antidepressants; but also, a tremendous increase in

panic attacks, especially in Buenos Aires, was driving up antidepressant sales. Why were there more panic attacks, I asked?

Because there is a totally confusing situation in this country . . . a very stressful situation; there's a huge amount of unemployment, there's under-employment, and on the other hand we Argentines are in a dead end. It seems like we don't have or *we can't find the way out*. . . . *You're an anthropologist, you understand well*. Problems of social relations are being added to personal problems.

The overwhelming sense of insecurity linked to the ongoing economic crisis was generally the first answer pharmaceutical industry officials gave to the question of why antidepressant sales were increasing. What was striking was the general absence of the notion of 'depression' as a biological disorder located in the individual that was the target of antidepressant action. When I asked an executive from the transnational market research firm IMS Health about recent sales trends, he said:

You've been here for a month. You must know by now . . . the socio-economic situation and the politics of the country make it so that people are consuming more anxiolytics all the time and are going to the psychiatrist more all the time. . . . Imagine a man who works, who has . . . who had a decent quality of life and has an income around a thousand or twelve hundred dollars a month. A few years ago he could live on this, now it's not enough to live on, so he becomes anxious. Don't forget that everyone in Argentina, everyone, has a tremendous fear, which is to be left without work.

As the crisis in Argentina reached its zenith with the fall of two presidents and the record default on its US\$132 billion national debt, the growth in psychopharmaceutical sales became a subject of increasing interest to the press. A Spanish-language *BBC online* article from late January 2002 cited reports from the pharmaceutical industry that while overall sales had decreased 10% in the last year, antidepressant sales had increased 13% and tranquilizer sales 4% (BBC, 2002). *The Observer* cited similar statistics in a piece called 'Argentina Hits Rock Bottom', again linking the crisis to increased symptoms of anxiety and increased suicide rates (Arie, 2001). In general, these sales data were interpreted as evidence of the effects of the economic crisis on the mental health conditions of the population. After mentioning an increase in stress-related medical visits in the wake of the crisis, the BBC article quoted an Argentine psychiatrist: 'Argentines feel devalued. People feel lost. The rules of the game have changed. Working hard for many hours doesn't mean economic security any more' (BBC, 2002). 'Devaluation' here referred to the uncoupling of the dollar-peso peg, which for 10 years had provided Argentines with a tenuous sense of economic security, while at the same time hampering the government's capacity for macro-economic intervention to promote growth.

The social analysis of psychopharmaceutical sales patterns was almost second nature to market strategists. A veteran pharmaceutical sales representative told me his theory of the relation of social change to drug consumption:

In the seventies you had the Cold War, and a heightened sense of tension and nervousness – so valium sold well. Then in the eighties with the phenomenon of the yuppies and their emphasis on career success, the drugs of choice were anxiolytics. In the nineties antidepressants became popular, for two reasons: first there were those who had failed to meet their expectations in the eighties and so they were depressed. But pharmaceutical marketing strategies also had to do with it.

To interpret increased psychopharmaceutical sales as an instance of the medicalization of suffering, though tempting for a critical social scientist, was somehow redundant in this context: it was a part of assumed knowledge that increased symptoms of anxiety and depression were linked to social and political phenomena. So much so that the very salience of social accounts of suffering served not as a *critique* of the role of pharmaceutical marketing, but as its *basis*; this could be seen in the case of a campaign by the Argentine company Gador, which used the twin concepts of ‘globalization’ and ‘vulnerability’ to promote its class of antidepressants and anxiolytics.<sup>5</sup> Even central-nervous-system (CNS) product managers did not subscribe to a biological model of depression. Thus Martín, head of CNS sales for a multinational firm, in discussing the question of the sources of depression, protested the predominance of psychoanalytic explanations in Argentina – in favor of a social one:

It’s not necessarily the case that the current modification, which is the cause of the depression, has its origin in what happened to me during my infancy. It’s very likely that this marks us, but also the context and this sense of feeling ever-more vulnerable before change. . . . The world is changing very fast, too fast for all of us. Today I was talking with someone about this issue and how we’re *stuck* now – the deficit, the default or not, devaluation or not, it’s such an uncertain horizon.

Media pundits, sales directors, and market research executives agreed: insecurity linked to the economic crisis was driving up psychopharmaceutical sales. But it was not clear whether it was the effects of the crisis on the nation’s psychic state or the promotional strategies that harnessed these effects that were the primary cause of changes in the psychopharmaceutical market. Sales data at first seem to provide evidence of the growing medicalization of social disorder, but it is important to sort out the relationships between actual data on the transformations of the market and the stories that were being told about these data.

While mass media attention to psychopharmaceutical consumption seemed to increase toward the end of 2001, stories about the relationship between such consumption and social transformation were not a new phenomenon. In 1996 – a moment that five years later looked like the height of the 1990s economic boom in Argentina – a piece called ‘The Ranking of Remedies’ appeared in *La Nación* (Palomar, 1996). In it, the President of the Argentine Federation of Pharmacies hinted at the role of social crisis in shaping the consumption of pharmaceuticals: ‘Perhaps what is most notable is the boom of the antidepressants, whose massive consumption took off in our society at the beginning of the seventies. And not

by chance, as will be understood.' The author of the article commented: 'Of the five products most sold annually in our country, one is an antibiotic and the rest are a faithful reflection of the two great maladies of our time: stress and *nervios*.' More pharmaceutical industry representatives added their interpretations: 'Who isn't *nervioso* in Argentina today?' asked the Executive Director of the Council of Multinational Laboratories. The President of the College of Pharmacists also gave a sociological reading of the sales data: 'Life conditions are getting worse . . . and we live in a permanent state of alteration. In 1994 alone more than 16 million boxes of psychotropics were sold.'

However, it was not certain that actual antidepressant consumption had changed significantly during the crisis. Martín told me: 'the quantity of patients treated with antidepressants hasn't increased that much; what has changed is the average *price* of antidepressants.' This would make sense given the pattern in the rest of the Argentine market in the early 1990s – an increase in revenue generated not by an increase in consumption, but by the use of newer, more expensive drugs. In this case the explanation for increasing antidepressant sales revenue could be a gradual switch, among non-specialists, from anxiolytics – still used far more than antidepressants – to the new SSRIs.

In fact Martín thought that the market was still relatively untapped. 'I think it's the tip of the iceberg, what we have today. Today the antidepressant market, even though as you said it's growing, I think that the potential is, easily 10 times more than what it is now'. How did he know the potential since no data were available on the prevalence of depression in Argentina? He used transnational epidemiology, combining it with pharmaceutical audit firms' data on drug sales:

If you take the index of the prevalence of depression in any country in the world, which is around – let's take a conservative number, 3% – you would be talking about a million or so people . . . in reality that would be pure depression, but if you begin to take the different types of depression, dysthemia, we're talking about three million people. . . . And today you have, treated patients, 350,000, more or less.

Martín's argument that it was higher prices more than the actual number of patients treated that was driving up sales revenue was substantiated by a study I initiated – given the paucity of other available data – with a group of pharmaco-epidemiologists affiliated with the University of Belgrano and an Argentine pharmacy benefits management firm. The study compared the pattern of anxiolytic and antidepressant use over the period from 1997 to 2000 among members of four separate health plans, comprising a population of about 600,000 people (Gattari et al., 2001). It turned out that over this period there was a sharp *decline* in anxiolytic exposure in this population, from 21 to 14%, and a slight increase in the number of patients taking antidepressants, from 3.6 to 4.5% of affiliates. In other words, many fewer patients overall were taking such medications. These results are striking in comparison with the steep rise in psychopharmaceutical sales figures cited by the media as evidence of the effect of the

economic crisis on the population's mental well-being. They are substantiated by data obtained from IMS Health on changes in psychopharmaceutical unit sales volume in Argentina in the last five years: these indicate that overall anxiolytic unit sales declined by 5% between 1997 and 2001, and antidepressant unit sales increased by 9% over the same period.<sup>6</sup> What is important to note here is the much greater use of tranquilizers than antidepressants. While the gap was narrowing, anxiolytics were still sold at nearly six times the rate of antidepressants.

If we add to the results of this study another piece of information, we can be more precise about what was happening in the market: it turned out that the impressive growth in antidepressant sales revenue between December 1998 and June 2001 – from US\$45 million to \$54 million per year – could be mostly accounted for by sales of Paxil and Zoloft alone, which leapfrogged Gador's Foxetin to become the market leaders.<sup>7</sup> This was due to intensive contact between sales representatives and doctors, structured by an informal gift economy in which doctors' prescriptions were rewarded with foreign travel and other perks. Thus, Glaxo and Pfizer had apparently been successful in getting generalists to switch from anxiolytics to their SSRIs.

Rather than a precipitous increase in overall psychopharmaceutical consumption caused by the economic crisis, the growth in antidepressant revenue could best be explained in terms of a specific tactic: the work by sales representatives and opinion leaders to convince doctors to prescribe the newer SSRIs instead of tranquilizers for symptoms of stress, anxiety and depression. It is worth noting that such a shift is in accord with the recommendations of leading health authorities, which have expressed alarm at high rates of anxiolytic use (often tied to addiction and self-medication) in countries such as France and Argentina. In other words, 'high contact' – the intensification of relations between pharmaceutical companies and doctors – worked in this case to shape prescription habits more or less along the lines that officially sanctioned expertise would authorize. Thus, the increase in antidepressant prescriptions does not lead directly to a critique of the dangerous influence of the pharmaceutical industry on scientific medicine. Rather, it demands a close description of the transnational biomedical infrastructure that links knowledge, regulation, and the market – and which does so in different ways depending on divergent economic, institutional and professional contexts.

## Pharmaceutical Relations

In this period, the Argentine pharmaceutical market was a peculiar one: it was in an unlikely grouping with the USA, Germany, Switzerland, and Japan as the only countries whose domestic producers had a greater market share than foreign ones. But it was unique in that this thriving domestic production was founded on high-priced brand-name copies. The domestic pharmaceutical industry had been founded according to a logic of import substitution, producing copies for the internal market in a

climate where patent rights for pharmaceuticals were not recognized. This was part of the broader strategy of the postwar Argentine welfare or 'planning' state, which was oriented toward state-led industrialization that was not only to lead to independence from external powers, but that would also provide work and affordable goods for the population (Waisman, 1987; Sikkink, 1991). But mounting debt crises and hyperinflation eventually led to the abandonment of this model and the embrace of International Monetary Fund-designed structural adjustment policies oriented toward reducing the role of the state.<sup>8</sup>

In the late 1980s and early 1990s, after more than 10 years of fitful attempts to shift away from the planning state, the Peronist government of Carlos Menem began a radical experiment in market liberalism, through rapid privatization of state-owned entities such as electric utilities, railroads, and the oil company, and the de-regulation of protected markets. The goal of these reforms, which we can term 'neoliberal', was to limit the role of the state in overseeing human welfare, and to extend market rationality to areas such as education, health, and security (Barry et al., 1996). The premise was that market competition rather than state planning was the most efficient and effective way to provide such goods: given a space of ideal competition entrepreneurs would quickly step in to offer the best service at the best price, whereas states were hampered by bureaucratic inertia, corruption, inflexibility – the inability to deal with rapid change.<sup>9</sup>

The pharmaceutical industry is a good place for looking at the uneven and contingent effects of such liberalization. Under neoliberal reform in the early 1990s, price controls were dropped, the protection of local markets was eliminated, and the process of registration and authorization of medications was eased by giving automatic approval to a new drug if it had been approved by regulators in a 'leading country' – that is, in Western Europe or the USA. The idea was to regulate prices not by state-imposed controls but through competition structured by the free choices of consumers.

Argentina agreed to comply with the Trade Related Intellectual Property (TRIPs) agreement on intellectual property that emerged from the 1986 Uruguay round of the General Agreement on Tariffs and Trade (GATT). Multinational pharmaceutical companies were encouraged to expand their efforts in the market through their local subsidiaries. This was obviously bad news for the domestic industry, which controlled most of the market, but was dependent on the absence of an effective patent regime. To continue their operations the domestic industry depended on the ability to freely expropriate intellectual property, and during the 1990s it was able to repeatedly delay implementation of the patent regime. Under these circumstances, many domestic firms thrived in the neoliberal transition by turning exact copies of multinational drugs into local brands. Thus, of 54 marketed antidepressants in 2001, there were 14 kinds of fluoxetine (Prozac) and six brands of paroxetine (Paxil). This strategy should be distinguished from generic production: these products were marketed

brand-names, sold at prices comparable with those of the multinationals. In other words, domestic firms took advantage of the value structure of the transnational pharmaceutical industry, which is based on patent protection, while at the same time defying such protection.<sup>10</sup>

Under these circumstances, the Menem government's de-regulation policies produced a striking change in the Argentine pharmaceutical market. Drug prices rose sharply despite the lack of enforcement of patent protection, and while overall pharmaceutical consumption declined by 13% in the first five years after reforms, revenues increased by 70% (Fundacion ISALUD, 1999). This was in part the result of informal collusion between drug firms and insurance providers, and of the systematic blockage of the emergence of a generic industry. But it also had to do with the role of doctors as gatekeepers to consumption. In this sense, the model of rational consumer choice is clearly an inappropriate one for the pharmaceutical market, which is inherently 'imperfect': the one who chooses the drug is not the one who consumes it, and the one who consumes it is not (or often is not) the one who pays for it. As expert purchasers, doctors' prescription decisions are not shaped by price competition.

Given the presence of so many copies in the Argentine market (and the continued prohibition on direct-to-consumer advertising), there was intense competition among both domestic and multinational firms for the loyalties of doctors. Meanwhile, there was an oversupply of medical professionals. Doctors had difficulty finding enough private patients to subsist and received abysmally low salaries in public hospitals or social insurance-based clinics. With no research costs, domestic firms could reinvest their earnings directly back into marketing – and the key strategy was to build reciprocal relationships with doctors through gifts. In this environment, major gifts were common: at the 2001 American Psychiatric Association (APA) meetings in New Orleans, the largest foreign contingent was from Argentina, with more than 500 psychiatrists attending, the vast majority of whom had received sponsored trips from pharmaceutical firms.

The ubiquity of such gifts from pharmaceutical firms to doctors has drawn increased scrutiny in US professional and ethical discourse (Dana & Loewenstein, 2003). The anxiety provoked is of a 'conflict of interest' between the doctors' duty to the patient and a reciprocal obligation to the pharmaceutical company that might compromise doctors' professional integrity. This critique presumes that a clear distinction can be made between 'rational pharmacology' and drug marketing. However, as Healy and others have argued, marketing and expertise cannot be so easily disentangled: pharmaceutical companies are producers not only of pills, but also of knowledge about their safety and efficacy, and their gifts to doctors provide access to the latest expertise (Healy, 2001). The fortress that is supposed to guard against the crude logic of profit – biomedical expertise – is itself ensconced in the market.

Moreover, the pharmaceutical gift relationship should be understood not so much as payment for a service (prescribing a given drug) as the forging of a tie between the doctor and the pharmaceutical firm.<sup>11</sup> Rather than a direct transfer of goods, pharmaceutical gift relations involve something more like *reciprocal access to guarded resources*. This will become clear as I describe the structure of relations between doctors and pharmaceutical companies in the Argentine context. From the vantage of firms, these relations obviously enabled access to patients – either as drug consumers or as subjects of clinical trials. From the perspective of Argentine psychiatrists, the kinds of gifts that were offered – email accounts, computer equipment, travel to international congresses – represented the possibility of engagement with centers of knowledge production and professional authority. Given a lack of other means of accessing cosmopolitan systems of expertise, pharmaceutical relations became portals to the global biomedical infrastructure. In their relations with pharmaceutical companies, it was not so much that doctors were faced with a conflict of interest between science and the market, as that they were embedded in an atmosphere of *interested knowledge*.

This does not in itself de-legitimize knowledge produced and disseminated about pharmaceutical safety and efficacy. Rather, it directs us to consider how doctors come to invest authority in the information that comes to them via pharmaceutically mediated circuits.<sup>12</sup> This requires the investigation of the structure of the relationships between pharmaceutical companies and doctors. In the Argentine case, while such relationships were strengthened through gift exchange, the form of trust involved was deliberative: there were certain structures of accountability on each side (Sabel, 1997). Let me begin by looking at how firms monitored the effectiveness of promotional strategies that were aimed at shaping the behavior of doctors.

### Post-‘Social’ Regulation

The goal of the sponsored conference trip and other major gifts from pharmaceutical companies was to forge a relationship of loyalty between the doctor and the firm. There were two kinds of doctors who were particularly sought after for such relationships: opinion-leaders and prescription-leaders. The basic strategy of building brand loyalty among doctors took a different form depending on whether the doctor was an opinion- or prescription-leader. The delicate work of forging ties with opinion-leaders was the job of the sales director or product manager. The key figure in relation to prescription-leaders, on the other hand, was the sales representative (rep) – to which the Argentine pharmaceutical industry devoted 15% of its total revenue, US\$3.6 billion in 1996 (Fundacion ISALUD, 1999). As of 2001, there were 90,000 physicians, and 8000 sales reps in the country.<sup>13</sup> The sales rep’s task was to work within an assigned territory to increase the market share of his company’s products. Strategies

for gaining loyalty also differed somewhat between domestic and multinational firms. Multinationals relied on their links to prestigious knowledge centers, and regulated themselves (at least in appearance) according to transnational norms; domestic firms invented tactics based on knowledge of the local terrain.

The pharmaceutical audit industry provided data that enabled pharmaceutical companies to gauge the results of their marketing campaigns, as well as to monitor their relations with individual doctors. I first became interested in the uses of pharmaceutical sales data while attending editorial meetings of a leading Argentine journal of psychiatry. The editor of the journal had complained at one of the meetings about sales representatives from Eli Lilly who had rebuffed his request for sponsorship of his journal, saying: 'Why are you asking us for help, when you only prescribe Foxetin?' Gador's Foxetin, an unlicensed copy of Prozac, was at the time the leading antidepressant on the Argentine market, while Lilly's patented original languished in sixth place.<sup>14</sup> The editor, who was known for having been a militant activist in the left during the early 1970s, was outraged: first at the extortionary tactics of the sales reps, and second at their in-depth knowledge of his prescription practices. How did they know what he prescribed? It turned out that there were audit firms that micro-filmed individual prescriptions in pharmacies, collated the data, and then sold it to pharmaceutical companies. I was impressed at the detail of this private-sphere knowledge – especially in a country where in the public sector it is nearly impossible to find any epidemiological data on the prevalence of mental illness in the population or information on rates of pharmaceutical use.<sup>15</sup>

The gathering of detailed knowledge about prescriptions that the editor had stumbled upon is a window into a more general set of practices that have to do with the regulation of contemporary medical expertise, and which are particularly salient in countries – such as Argentina – where other forms of public health knowledge and regulation typically associated with the state or with professional organizations are weak. The 'avalanche of numbers' about the population's health status and practices produced by audit firms, and its stark contrast with the lack of data available elsewhere, directs analytic attention to the role these numbers played in shaping doctors' actions.<sup>16</sup>

In his genealogy of governmental rationality, Michel Foucault showed that sciences concerned with gathering knowledge about public health first appeared as part of an art of government whose aim was to improve the health and welfare of populations, in the service of increasing the strength of the state (Foucault, 2000). Understanding and fostering the well-being of subjects understood as living beings gradually became a central task of state administration. Forms of knowledge about the health of populations – from statistics (which first referred to 'the science of the state') to demography to epidemiology – have since been linked to a variety of modern state-building projects, as well as efforts to modernize colonial and post-colonial territories (Rabinow, 1996). The gathering of detailed data about

the condition of the population is thus crucial to modern forms of government, in that these numbers constitute the domains that become sites of its intervention – economy, society, and population (Rose, 1999).

If sciences such as epidemiology emerged in the context of regulating the health of collectivities within a territory, how can we understand new forms of knowledge such as audit data with respect to the problem of government? It might be said that the role of the social scientist in the welfare or planning state – to constitute and intervene in the collectivity, understood as a national population – finds an analog, in a post-‘social’ order, in the contemporary market strategist (Rose, 1996). Gilles Deleuze (1995) hinted at this shift in his 1990 paper ‘Post-Script on Control Societies’, describing the importance of marketing to the new form of capitalism oriented toward ‘meta-production’: ‘Marketing is now the instrument of social control and produces the arrogant breed who are our masters,’ he remarked darkly (1995: 181). Deleuze thought that predominant forms of power relations had shifted as well: disciplinary power had given way to control, the problem of confinement to the problem of *access*. This new form of power operated through constant modulation and transmutation rather than surveillance or confession, he argued.

But where and on whom did it operate? In the case of pharmaceutical marketing, the figure who was being modulated through the question of access was not the patient, but the doctor. This complex, interactive control was made possible by audit data, the information collected on pharmaceutical sales and doctors’ prescription behavior.

Audit firms’ numbers worked to make the pharmaceutical market palpable as an entity that could be both a target of strategists’ intervention and a source of rectifying ‘feedback’. As a form of knowledge about health practices that was used in guiding expertise, pharmaceutical audit data emerged as a kind of ‘neoliberal epidemiology’. These numbers provided a vision of the territory as containing a market rather than a population. While the notion of a sales territory was not new, information technology made possible an immediacy and detail of knowledge that changed the character of territory management.<sup>17</sup> A veteran psychopharmaceutical marketer told me how he used such data to find prescription-leaders, referring to an upper-middle class neighborhood of Buenos Aires:

You know that Palermo’s postal code is 1425 and so you say, ‘I want anti-psychotic prescriptions from Palermo.’ You find the five best prescribers, and how much they prescribe of what. These are often doctors who are affiliated with high volume insurance plans.

The strategist could then do targeted marketing. Older places devoted to the clinical encounter could be used as sites of encounter and transaction: thus in Buenos Aires, public hospitals provided important opportunities for access to prestigious doctors who commuted to private practices in places like Palermo in the afternoons, and to patient populations for use in clinical trials.

## Bringing the Market to Life

As I explored this milieu, my specific interest was in recent changes in psychopharmaceutical sales, but it was quite difficult to get hold of the actual numbers and trends. During my visits to pharmaceutical company offices, I was sometimes allowed to surreptitiously glance at the huge binder from the market research firm IMS Health that listed monthly sales figures, but not to make copies. One sales director I met with in a cafe had written them down on a piece of paper before coming, let me look at them, then tore up the piece of paper. Sales data were private numbers. They were quite valuable: it cost pharmaceutical firms up to US\$150,000 per year to subscribe to the IMS service, which was only one kind of audit. The other service, Close Up, which collected prescriptions from pharmacies, provided a different and complementary set of data, which was equally difficult to access. Both came with software that allowed one to move through their databases, and which broke down the information into significant components: For what pathology did doctors generally prescribe a given drug? Who were the leaders in a given therapeutic class over the last 12 months, and what was the pattern of change? And more impressively, how did sales break down by region – by city, neighborhood, or even postal code?

IMS Health is a multinational firm, with its headquarters in the UK and a subsidiary in Buenos Aires. It is the leading collector and distributor of pharmaceutical sales data in the world. The firm's 'primary material' is standardized information on overall sales and specific therapeutic classes in terms of units and value at the level of regional and global markets. IMS information can also be specified down to the level of the zip code of the pharmacies where drugs are sold. In Argentina, IMS bought this information from wholesale drug distributors. As an executive at IMS Argentina told me, they provide only the 'pure information' and it is up to the companies themselves to figure out what the data mean.

In looking at the practices of market strategists in the pharmaceutical industry, it is possible to see how a specific market is both constituted and transformed through the use of audit data.<sup>18</sup> Information from IMS made it possible to grasp the market as a kind of living entity, evolving in unpredictable but measurable ways. With it the market's evolution became visible. Gabriela, product manager for a new antidepressant that had 33% growth last year, showed me how strategists distinguished between markets according to therapeutic class:

Studying the market in the past, we deal with the sales statistics to see what specialties use our products, and seeing, for example the *evolution of the numbers* I was just talking about. *Which are the markets that evolve most rapidly or which are the markets that are growing.* I have a general market that is shrinking and this market is growing [pointing to the antidepressant sales column], this one is attractive.

The IMS executive explained how to use its database of qualitative information gathered from interviews with panels of experts to plan a campaign:

So – I'm thinking of launching a tranquilizer. The first thing I'm going to do is enter [the database] by pathology, and what am I going to see? From my information, which products do doctors use, which brands, what do they associate it with, in what cases do they use them?

The market was both that which directed strategy as well as that which strategists tried to re-shape. It could also be seen as a foe, an antagonist. Martin, CNS sales director at a multinational firm whose antidepressant was struggling in the overcrowded field, spoke about how he used audit information to design a market strategy:

First you analyze the market. . . . What volume it has, how it is evolving, who are the companies that participate, what percentage that company has in sales of its products in the market . . . this means: *whether I'm going to attack it, whether it's going to react or isn't going to react, how it's going to react*, what is the age of the products, what is the index of penetration of the new products that were launched onto the market, what differentiation do you have with what already is there, who are the doctors that prescribe the products in this market, how many there are . . .

### Integrated Control

An executive at Close Up, the Argentine firm that audits prescriptions, told me why IMS data on territorial sales alone are not enough – one must also have individual doctors' prescription numbers at hand:

It's sort of an integrated control. We don't claim that the pharmaceutical companies don't have to see the territorial sales, but they also have to see the prescriptions. They . . . have to be analyzed at the same time, to be able to have more coherent and more precise explanations of what is going on in the field.

With a subscription to Close Up's databases, the sales director could look up which doctors prescribed his products, which prescribed competitors' products and how much each doctor prescribed. To get this information, Close Up bought or bartered microfilmed copies of actual doctors' prescriptions from pharmacy chains. They claimed to cover 18 million (of an estimated 300 million) prescriptions per year in Argentina, and to have profiles on the behavior of more than 90,000 physicians, including nearly 2000 psychiatrists in the city of Buenos Aires. Their data, in the hands of Lilly representatives, had been the source of the psychiatry journal editor's ire.

Close Up's promotional material advised: 'Success, for a pharmaceutical company, depends on a primary factor: the physician's prescriptive behavior.' How did these numbers work to know and shape such behavior? Their literature provided a rather sinister vision of government by surveillance, targeted specifically at doctors. It seemed to confirm recent analyses

of audit cultures in terms of the prevalence of ‘technologies of mistrust’ – means of monitoring and shaping behavior that otherwise cannot be checked (Power, 1997; Strathern, 2000). If you use Close Up, they told prospective clients, you will know ‘what the doctor does, not what he says he does.’ Their ‘Audit Pharma’ database could be loaded onto hand-held computers that sales representatives consulted while in the field. As one psychiatrist told me, ‘You feel like you’re being watched by the CIA [Central Intelligence Agency].’

But why did medical sales reps need to find out whether doctors were lying to them? It was a way of checking whether their gifts were actually paying off. As Gabriela told me,

So if [the doctor] says, ‘why don’t you pay for my trip to the APA because I’m prescribing a lot of this product’, to see if it’s true or not . . . because the doctor can tell all the laboratories that he’s prescribing a lot of every product.

And thereby get a lot of trips. Gabriela said that sometimes this negotiation between the firm and the doctor was quite direct: ‘Doctor, if you get me 20 more prescriptions a month, I’ll send you wherever you want to go’. But usually the interaction was more subtle – ‘How can I help you?’ the sales rep might ask.

## Territory Management

But doctors were not the only parties subject to audit surveillance. While sales reps tracked doctors’ behavior armed with knowledge of their actual prescription practices, sales managers monitored how their reps were doing. Gabriela pointed out a number in her IMS binder and explained:

This statistic shows the ‘market-share’ of each visitor in each zone. So you know that you have a visitor in Santa Fe and you see the market-share of each product in this zone, so you see how this visitor is doing in the zone. And you are doing what is called ‘Territory Management’, you are seeing the profitability of each zone or how each visitor is doing.

The fact that sales performance was constantly monitored colored the interactions of doctors and sales reps. Sales reps, who tried to form relationships of ‘friendship’ or at least mutual obligation with doctors, pleaded for help from doctors in raising their territorial sales figures. With this information on their own salespeople, the audit became a reflexive technique for the firm, a way of directing intervention, but also a form of self-modulation, given the precarious uncertainty of the market. Close Up claimed that its service for measuring sales reps’ productivity, called ‘Feedback’, allowed the sales manager to know exactly what was happening in the territories:

Measure the prescriptive productivity of each one of the representatives and their supervisors, through prescriptions captured from the visited doctors. Eliminate the deviations of productivity measurement according

to territory [this is a dig at IMS]. An objective and valid measure of the results from promotion with visited doctors. Feedback is the only technical report that makes it possible to make precise decisions to identify market opportunities.

How well was a given campaign – of samples, information-diffusion, symposia – going? The reflexive loop provided by the audit database allowed for self-evaluation and transformation. As Martin said upon getting the disappointing results of his new campaign: ‘We thought we would grow 15% this year, and we’re getting there, we’re doing pretty well. But *one has to be permanently monitoring what’s happening*.’ The ‘market’ – here, the accumulated prescribing decisions of the country’s 90,000 physicians – was a semi-controllable entity that on the one hand was what one wanted to act upon but which also reacted – reinforcing successful decisions and throwing unsuccessful ones into question. The modulation was interactive – pharmaceutical marketers regulated doctors, but doctors, as a collectivity represented in the market’s monthly evolution and the inevitable bell curve of any specific product’s ‘life-cycle’, shaped the actions of marketers as well.

### Opinion-Leaders

While directly surveying prescriptions helped to manage relations with prescription-leaders with whom one could make arrangements of exchange, a more subtle set of dynamics occurred with opinion-leaders. Explicit negotiation and direct exchange were not typical of the relationship between the opinion-leader and the firm. In fact it could be counter-productive to bring sales numbers into these relationships. Here the main technique was to develop trusting relationships. This task was not left to the sales reps in the field, but was the responsibility of the sales director or product manager. Audit numbers played a role in the process, but in a more complex way. Gabriela, the young CNS product manager at an upstart European firm, told me how they decided with whom to develop contacts:

We work with doctors with high prescriptive power, very prestigious doctors, who can establish some trend in the use of psychopharmaceuticals, either because they have a lot of patients or because they are well known, for example, they are ‘Speakers’. Or because they decide on purchases, for example in hospitals, or they participate in some important institution or in the psychiatric associations, so these doctors are those that enable us – through a good, fluid contact and relation with this doctor – to get the message we need out to the doctors who follow his trends.

In the case of opinion-leaders, it was not a question of monitoring prescriptions, but of developing alliances – of having these respected figures available for seminars, symposia, the authorship of ‘scientific literature’ to be disseminated. The role of the opinion-leader was something like a brand spokesman – although opinion-leaders were typically allied

with multiple firms. There was a hierarchy of opinion-leaders and of firms. Market strategists knew as well as anyone who the key players in the field were – and in fact could play a major role in making them into opinion-leaders. Through these relationships, companies were able to ally themselves with experts who commanded respect and had the trust of other doctors. Conversely, these experts were able to reaffirm their authority and to disseminate their knowledge through their relationship with pharmaceutical firms – such as one well-respected leader whose book on ‘practical psychopharmacology’ was sponsored by Organon and introduced by the head of Pharmacology at the University of Buenos Aires. Another technique for forging links with opinion-leaders was to offer them a marketing-oriented ‘Phase IV’ clinical trial. This was a trial of an already approved medication intended for promotional purposes rather than to actually glean information on the efficacy of the drug. The ostensible study resulted in a ‘poster’ that was presented at an international scientific congress, with travel expenses paid for by the company. For young doctors, this was one way to begin to appear in circuits of expertise as an emerging opinion-leader.

Firms had to tread lightly with opinion-leaders. A veteran strategist told me that if he was putting on an event, he made sure to invite all the most important opinion-leaders. If you left someone out, they’d be upset and wouldn’t prescribe your product. The opinion-leaders were very sensitive, he said: ‘they want to feel important.’ In this respect multinational firms had an advantage given their ability to link local opinion-leaders to their networks of prestigious transnational experts. Companies strove to develop a reputation for taking good care of their opinion-leaders. Gabriela, the product manager, said of her company’s efforts at conferences:

If there is something that distinguishes us it’s that we don’t make huge investments of money but we do make high quality investments, we are with them all the time, it’s not that we invite them and then they go alone. *We are very careful with the relationship of the doctor with the laboratory, because we don’t have such a big [sales] force.*

And the psychiatrists cared about how they were taken care of as well. At one of the editorial meetings of the psychiatry journal, two members of the board talked about their upcoming trip to the APA meetings in Washington, DC: the younger of the two was going early to attend a Lilly course on anti-psychotics and depression. ‘Oh, it’s marvelous,’ enthused the more experienced one, ‘you’re going to love it, and they look after you so well.’<sup>19</sup>

The opinion-leaders I spoke with generally told me that they never endorsed a specific product, and only accepted offers from reputable companies whose products they believed in. The reputation of the firm then became a means of ethical self-regulation. In other words, firms that

wished to ally with prestigious opinion-leaders had to maintain a reputation for propriety: they did not give out samples ('like the others do'); they provided access to information, sponsored studies, helped patients. A former Janssen marketing director described a campaign he ran for the anti-psychotic Risperdal that won a prize from an international patient organization. Its theme was 'reinsertion' – an attempt to go further than just medication, toward resocialization. Ten patients from a schizophrenic-patient support group were hired at Janssen Argentina for short periods, to do simple tasks like photocopying, were paid small salaries and then received scholarships for training and certificates for having worked. The program showed that these patients needed less medication and had fewer relapses – that they could be successfully 'reinserted' into society. More than being directly about sales, he said, the campaign was about shaping the image of the company as one that was interested in the 'quality of life' of patients.

### Local Knowledge

The Risperdal campaign was ingenious in its awareness of the importance of questions such as social reintegration to the epistemic milieu that it targeted, Argentine psychiatry. Psychiatry differs from other biomedical fields in the multiple forms of expertise that coexist within it, each of which has a distinct model of the cause, site, and optimal modes of treatment of disorder. While in the USA psychiatry had recently shifted toward a 'neuroscientific' approach that considered mental illness to be a discrete disease located in the brain of the patient, in Argentina social and psychoanalytic explanations remained strong (Lakoff, 2003). As historians Mariano Plotkin and Hugo Vezzetti have shown, the resilience of these psychodynamic models – not only among experts, but in the population at large – is linked to an ethics and a politics rooted in the social and cultural struggles of 20th-century Argentina (Vezzetti, 1996; Plotkin, 2001).<sup>20</sup> For many members of the Buenos Aires 'mundo-psi', biomedical psychiatry was associated with the political right, and with the violent 1976–83 military dictatorship that persecuted psychoanalysts and social psychiatrists as 'subversive' to the traditional moral order (Feitlowitz, 1998).

As a result, a critical social psychiatry was arguably predominant in public mental health discourse. This ethos posed a challenge for pharmaceutical marketers accustomed to campaigning in terms of serotonin levels and synaptic receptors. How, for example, might one appeal to former activists? Consider, for example, the journal editor mentioned earlier, a staunch critic of globalization who associated neuroscientific psychiatry and the extension of the DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders*, 4th edn) classification system with US imperialism, and who said of neoliberal policies more generally: 'In the same way that they open the market to foreign products and liquidate the state, they liquidate the forms of hospital care, the training criteria, training institutions, and the public university as the center of knowledge-production.'

Here it is useful to distinguish between the kinds of knowledge about the market that strategists gathered. One was quantitative, grid-like, evolving over time, displaying trends, providing a picture of the market – this was what IMS and Close Up provided. The other form of knowledge was local, qualitative, picked up gradually through interactions with doctors. It showed an awareness of the ethos of the market. This distinction helps answer the question of why Gador's generic fluoxetine was the leading antidepressant in 1998, while Lilly's Prozac remained far behind. The head of CNS marketing at Gador was something of a legend in the field. He claimed that quantitative audit data were only necessary if one did not already know the market – 'they are orienters, but they are not [so] important. . . . We don't apply some of the tools that other companies do, because our strength, in the case of the sales force, is very different, this is a totally atypical company.' In what sense? 'In the average seniority of our men . . . in each of their zones . . . our man has a lot of stability and is someone who inspires trust'. In other words, sustaining close, long-term relationships with doctors was one of Gador's chief tactics.

Given his knowledge of the terrain, he intuited that unlike the USA, lock-and-key illustrations of neurotransmitter reuptake inhibition might not be the most effective technique for pitching psychopharmaceuticals to Argentine psychiatrists. In the late 1990s a critical social psychiatry actually became the basis for Gador's marketing campaign, using globalization and the anxieties it provoked to promote its large anxiolytic and antidepressant line. One advertisement featured a series of grim figures traversing a map of the world, suffering from symptoms of globalization: 'Deterioration of interpersonal relations', 'Deterioration in daily performance', 'Unpredictable demands and threats', 'Personal and familial suffering', 'Loss of social role', 'Loss of productivity'. Gador's explicit articulation of pharmaceuticals as a means to alleviate social suffering indicates how medication can operate in distinctive ways according to its milieu of use.<sup>21</sup>

I asked the Gador manager how he had come up with the 'Globalization' campaign:

For as long as Gador has been putting together molecules, the work has been, in some way, to establish clearly the niches to which each one of these molecules is directed and, in this sense, globalization as a cultural concept – it is too strong not to use it.

He told me about the next phase of the campaign:

Right now we are in a later stage; we realized that the medical audience and even the users are absolutely conscious that globalization brings all these problems and we are in a campaign that is in the next stage, and this is that of *vulnerability*.

Another product manager noted the cleverness of this word choice, pointing out its resonance with a popular Argentine television series, called *Los Vulnerables*, about an eclectic group of patients involved in group therapy.

The Vulnerability campaign was kicked off by a symposium in October 2000 called ‘*Stress, Anxiety and Depression: A Progressive Clinical Sequence*’ at which a number of important local opinion leaders spoke. Among the organizers of the symposium was the editor of the psychiatry journal mentioned earlier: Gador had succeeded where Lilly had failed – by approaching the opinion-leader on his own terrain.

### The Regulation of Specificity

The Argentine case has more general implications for the question of the relation between the expansion of the depression diagnosis in the North and the marketing of SSRIs as ‘antidepressants’. In the North, the non-specificity of antidepressant action in combination with a medical system structured by what Charles Rosenberg (2002) describes as the model of ‘disease specificity’, has led to the expansion of the depression diagnosis as well as depression self-identity. As Borch-Jakobsen (2002) writes: ‘If depression has spread to the extent that it has, it’s because it is that on which antidepressants have an effect.’ But while antidepressants ‘recruit’ depressive patients in the USA, SSRI sales in Argentina were thriving in the absence of a notable increase in ‘depression’ as a diagnostic entity and mode of self-identification. The missing ingredient for the growth of the category of biomedical depression in Argentina was not pharmaceutical marketing, but regulatory bodies – the state and third-party payers – that demand evidence of specificity of effect in order to authorize pharmaceutical prescription.

In the USA and Europe, regulatory and professional demands that medication be targeted at a specific disease located in the brain shaped the marketing of biomedical ‘depression’ as that which antidepressants are meant to treat. In Argentina, on the other hand, the new SSRIs did not need depression in order to circulate. Without the imperative to diagnose specific diseases, the diagnosis of depression did not spread. So one could have an intense set of operations and dynamics in place for the circulation and distribution of pharmaceuticals – and SSRIs could markedly expand their use – but this could occur somewhat independently of the extension of a biomedicalized psychiatry, and independently of the diagnostic category of depression. SSRIs found a different means of entering the professionally mediated marketplace: doctors understood and used them as a treatment not for a lack of serotonin in the brain but for the suffering caused by the social situation – the sense of insecurity and vulnerability that the recent economic and political crisis had wrought.

### Notes

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as from prior fieldwork there in 1998 and 1999. The quotations are my translations. The names of informants are pseudonyms.

1. The article also cites figures from the market research firm IMS Health: 'the total sales of prescription medications declined in the last year by 5.63%. But this number isn't the same for all remedies. The sales of anxiolytics grew 3.86% and that for heart ailments grew 1.31%. The data do not seem coincidental.'
2. These data come from IMS Health monthly sales figures.
3. On the centrality of the 'specificity' model to contemporary biomedicine, see Rosenberg (2002). For the history of drug regulation in the USA, see Marks (1997).
4. It should be noted that no epidemiological data are available on the actual prevalence of 'depression' in Argentina. This can be explained in part by the lack of an imperative in clinical settings to name a specifically indicated disorder in order to prescribe a potentially useful medication. The only relevant statistical information comes from records of pharmaceutical sales, which is tracked by audit firms such as IMS. My argument that depression was not an especially salient category for mental health professionals – nor for the general public – is based on my field research in the *mundopoli* of Buenos Aires conducted in 1998–99 and 2001. For some professionals, it was an important task to try to raise awareness of the disorder among their colleagues.
5. I describe this campaign in more detail later.
6. I am grateful to Nikolas Rose for obtaining and sharing these most valuable data.
7. Unofficial data: over the 2.5-year period, Paxil sales had gone from an annual US\$6.2 million to \$11.5 million. Unit sales of paroxetine and sertraline (Zoloft) also increased markedly.
8. Martin Hopenhayn (2001) provides an account of this process from the perspective of Latin American intellectuals and policymakers.
9. Despite the extremity of these reform measures, the Argentine welfare state was by no means completely stripped away. In fact, per capita spending on health (40% of which is public) increased from 1990 to 1999 by 50%, and as of 2001 was 10% of the gross domestic product. In 1999, about one-quarter of the health budget was spent on pharmaceuticals – US\$6 billion. Per capita health spending went from US\$827 to \$1291 in this period, according to the World Bank's standardized units of calculation (World Bank, 1997). See also World Health Organization (2001a). In 2000 the Argentine gross domestic product was US\$285 billion.
10. The brief submitted by the lobbying group PhRMA claimed, as part of the US case against Argentina brought to the World Trade Organization: 'Argentina is widely recognized as the worst expropriator of US pharmaceutical inventions in the Western Hemisphere, as local firms dominate over 50% of the pharmaceutical market currently estimated at almost US\$4.1 billion. Substantial and continuing loss of market share, in the range of hundreds of millions of dollars, is directly attributable to Argentina's defective intellectual property regime' (<<http://www.phrma.org>>, accessed April 2001).
11. For recent anthropological readings of the relationship between gifts and commodities, see Appadurai (1988) and Thomas (1991).
12. As Steven Shapin (1994) has shown, relationships of trust and socially sanctioned authority have underpinned scientific knowledge from the earliest moments of what came to be known as the Scientific Revolution.
13. Data on the number of sales reps come from the union of agentes de propaganda medica (APM). Their website, which features an animated suitcase-bearing sales representative, can be found at <<http://www.apm.org.ar>> (accessed April 2002).
14. IMS Health: <<http://www.imshealth.com>> (accessed December 2001).
15. As the Pan American Health Organization reports of Argentina, 'information on the prevalence of mental illness is very scant' (Pan American Health Organization, 1998). As for spending, in its 'Atlas' of global mental health, the World Health Organization (2001a: 148) notes of Argentina: 'Details about expenditure on mental health are not available.'
16. Ian Hacking (1990) describes the 'avalanche of printed numbers' produced by nation-states beginning in the Napoleonic Era.

17. For the history of the use of 'territory' measures in sales management, see Spears (1995).
18. Michel Callon (1998) has emphasized the central role that tools from accounting and marketing play in organizing the structure of markets.
19. The course was part of Lilly's efforts to promote Zyprexa as Prozac went off patent.
20. For the US case, see Luhmann (2000).
21. Van der Geest et al. (1996: 166) make this point in their survey of the anthropology of pharmaceuticals: 'Pharmaceuticals are often recast in another knowledge system and used very differently from the way they were intended in the "regime of value" where they were produced'.

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