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The true mystery of the world is the visible, not the invisible.

Oscar Wilde, The Picture of Dorian Gray

EDITORIAL

WHO IS PENUMBRA?

"…That makes nearly ten years now, that we have been gradually building this non-institutional space with a multifaceted name, Penumbra, which now counts some 500 members. It is a collective and perfectly empirical attempt to shed some light on the social life of numbers in public debate, with the deliberate intention of not being simple observers, but rather to influence the quality of democratic exchanges in our country. We do this through journals (a White Letter and a Gray Letter), a book (*Chiffres en folie*), whose title may be translated as 'Number follies', an Internet homepage (run out of Lausanne), participation in television and radio programs, ad hoc study groups and public forums (*Penumbra's late-night meetings*).

Our motto, adopted from the first, is "*One's own turpitude is never something to boast of*". Specialists are encouraged not to hide in the shadowy area of the constraints attached to their discipline, their job or their position in the hierarchy. They are invited to leave their "natural" environment, and to put their profession's customs aside, at least temporarily. Our equation is: support differences, multiply viewpoints and eliminate sterile divisions. The association's activities, including writing, discussions in groups, large or small, reacting publicly to current social-political and/or media-created issues as well as 'pro-active' initiatives, are intense, playful and increasingly visible. Whenever possible, Penumbra attempts to steer wide of the austerity that usually characterizes scientific work and quantitative approaches in particular. Seducing people who "don't like figures" – as well as those who do – sometimes requires humor, a touch of the literary, and sometimes even recourse to fiction.

The chances are that the problems encountered by the twosome formed by producers and consumers of statistics in other countries with different social, political and/or geographic contexts probably have much in common. Initiatives similar to Penumbra probably exist in other parts of the world. It is our hope, then, that this Seoul conference of the International Statistical Institute will provide us with an opportunity to learn about them, and perhaps to develop others."

Pierre V. Tournier
Seoul, ISI 53rd session
August 2001

GAY PRIDE: A DIVISIVE SUBJECT

Le Monde (a French national daily newspaper), front page, June 22, 1993: "One out of two French people accepts marriage between homosexuals [...]. The French are increasingly tolerant of homosexuality. In 1986, 54 % of those questioned considered homosexuality just another way of living one's sex life. That figure rose to 67 % in 1993. Similarly, 48 % of French people now feel that homosexual couples should be allowed to get married."
Le Monde, June 22, 1993 (yes, the same day), page eleven: "French people are increasingly less tolerant of homosexuals. Close to half (46 %) of French people tend to be shocked by the existence of demonstrations such as Gay Pride. This figure, taken from a survey done for *Le Monde* by the IFOP (a polling institute), is in itself a reflection of societal reticences towards homosexuality [...]. Tolerance is stagnating, if not actually regressing slightly. This also tells us something else: opinions on the subject are divided."
Yes indeed, the paper's editors too seem to be divided on the subject. Unless, again, this is a way of encouraging readers to feel free to develop their own opinion. An original but somewhat confusing initiative.

Clara Halbschatten
August 1996

JETLAGGED STATISTICIANS, IS THERE A PILOT IN THE COMPUTER?

July 20, 1998, 8:20 p.m., the news report on France2 (one of the main French TV channels). According to the ILO, France has the highest rate of workplace violence: 11.2 % of men and 8.9 % of women are allegedly victims of violence each year. France also tops the list for sexual harassment (again, at the workplace), with an annual frequency of 19.8 %, while figures for the other Western European countries range from 7.6 % (Sweden) to 0.8 % (Austria). There is never much time for in-depth analysis on TV, but the commentator does add "maybe that's because our statistics are compiled better!". The citizen member of Penumbra, hearing that, can only react with a: good for that, newscaster! It is in fact always problematic to compare surveys between different countries, or at least, the comparability should be carefully questioned. It is worth noting and praising the journalist who, although unable to check on the information, is on the lookout.

Since I myself am in a better position to make that check, I decided it was a good idea to look into the subject, if only to report my conclusion to that vigilant journalist. I thought I would discover that the formulation of the questions, in different languages and different sociological contexts, could hardly yield comparable answers. The feeling of having been victim to an aggression is highly subjective and context-linked. I therefore asked to see the questionnaires. This was a "victimization" survey conducted in some thirty countries under the auspices of the United Nations. It covered attacks of all sorts (affecting individuals and property), and the workplace was only one particular aspect, isolated from the overall survey for the needs of the ILO.

To my surprise, the French questionnaire contained no questions about the workplace. The reference questionnaire (in English) did contain such questions, as did the French version of the Swiss questionnaire. The problem was radically different, then. It was no longer a matter of the comparability of a question, but rather, of discovering how it had been possible to

establish findings although the question had not been put. Are some statisticians extraordinarily smart? I will spare you the details of my investigation of the investigation. My conclusion was as follows. This was the third time this survey had been conducted: the workplace had been introduced for the second version, and since France had not participated in that second version, it had kept the same questionnaire as for the first. No-one had noticed the omission. Subsequently, in its automatic analysis of the responses for all of the countries, the central computer had replaced the missing question by the next one. So the question did get answered, after all, but the answer was meaningless.

Two lessons

There are at least two lessons to be drawn from this story:

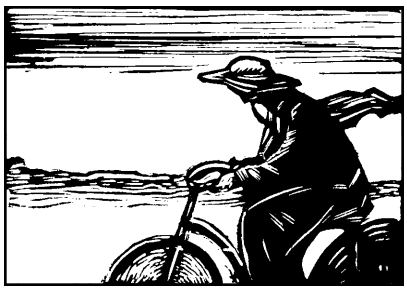
– first, that the organization of this type of surveys, involving a number of institutes, elicits a loss of control over the technical aspects of the process (checking of the questions and checking of the data collected);

– secondly, that regardless of the technique, it is of some concern that all those individuals who had an opportunity to see those results accepted such a tremendous difference in the order of magnitude without a wink. No-one was surprised. The experts in violence all got busy explaining with the utmost seriousness the whys and wherefores of the phenomenon, and the dangers involved, with no astonishment over its magnitude.

No-one. Except the commentator on France 2, who had some suspicion. And it was the accidental hearing of that commentator by a curious statistician that let the cat out of the bag.

If such is the case, then why conduct a survey, if the same speeches are to be heard irrespective of the findings?

The discovery was made too late to prevent a publication such as *Le Monde – Initiatives* (a thematic weekly) dated October 7th from reproducing the piece.



One imagines that absolutely everyone is prepared to pick up such findings, even when they are that extravagant. What, then, should we imagine, and fear, when the findings are only slightly warped!

The next riddle is: on the ILO list of prize-winners, Argentina is vice champion for sexual violence, with 16.6 % (third prize goes to Rumania, with 10.8 %). If France is disqualified, what's the story for the challenger? I sent my report to a colleague in Buenos Aires, and am waiting to hear from her. Is Argentina's survey defective as well? or are Argentinians definitely hot-blooded?

René Padieu
April 1999

AGING

The French are aging, so we are told over and over. Between "the wrinkled French", "the grandpa boom", "the gray panthers", we are constantly being informed that the number of senior citizens is increasing. Well, now, there's a curious understatement. Old people are referred to as senior citizens nowadays. Old is politically incorrect. It's derogatory. But I do remember a short story by Alphonse Daudet entitled 'Old People', a lovely story, smacking delightfully of sunlight, furniture wax and homemade jam.

Among the many alignments of figures counting and recounting our national aging process, we find a commentary by *Population et Sociétés* (a monthly published by the French Institute for Population Studies) (March 2000) on the latest census and the INSEE (the official French statistical institute) findings, telling us that, what with the low birth rate and the increasing life expectancy, this aging is unavoidable. But still, the rising life expectancy is slowing down somewhat: in the past, it gained "three months each year"; now it is only somewhere around two months a year. Nonetheless, it is still progressing. Nearly 16 % of the population are now "age 65 or over", whereas they will allegedly be 20.6 % twenty years from now.

At this point, I say to myself: does that mean that there are more and more old people? Who, in fact, is old? The other day, my godfather celebrated his 60th birthday. Not being even half his age, I complimented

him respectfully. But he seemed extremely cheerful. He had just read in some magazine that we are physiologically programmed to live 120 years. He said: you see, I'm just at the half-way mark; and considering my experience of my past errors, I have a very promising prospect in store. He showed me a chart published in the magazine, with the survival curve, for different ages, of a generation born in 1850, one born in 1900, etc. up to the present. The curves changed from one period to the other, suggesting that the line would indeed tend toward a rectangular form, an ideal form in which everyone would live to age 120 (and would die, all at once, having reached that point).

My great-aunt Clara Halbschatten attended that birthday party, of course. She is perked up by her stay in the Alps, following her accident last summer, and with her hundredth birthday not far away, she stays out of drafts but is always lively and alert. I told her of my godfather's boasting.

— That's quite true, said she, but what's important is not the number of years you live, but your health. I'll show you a statistic - I don't know it by heart - showing that the number of healthy years is increasing as well.

— But then, Aunt, do you mean that a person who is, say, eighty years old today is not really older than one who was seventy in the 1950s?

— He or she is even younger! Here, look.

We were in the library, and there were some recent issues of the magazine *Futuribles* (a multidisciplinary journal concerned with medium and long-term futures of societies) lying on a shelf. She opened one of them (her ability to stalk out the most varied publications has always astonished me) and showed me a review of Peter Drucker's latest book. I suspect he was an old pal of Aunt Clara's. He is 90 and has just published another book. The author of the review notes that he publishes one a year, at his age, and that he always has something new to say. He reports that "a life expectancy of 79 years today is equivalent to 65 in 1936, the year in which the United States were the last Western country to adopt a national retirement plan". And the author goes on to conclude outright that "within the next 20 or 30 years, the age of retirement will have to be pushed back to 79".

I went home very upset, and with the feeling I had learned something very new, telling me, just out of adolescence, of a very long forthcoming period of youth. To return to the INSEE statistics: is age an accurate indicator for measuring the so-called aging of the population? Is aging relative? Just as the INSEE often sets the poverty line conventionally at half of the median income, perhaps the old age level should be set conventionally at twice the median age? This reminds me of something Jean-Didier Vincent wrote (I ask his forgiveness, I don't remember in what book): "an old person is someone who no longer builds his future". I can imagine a survey in which people would be asked: do you build your future? Yes or no? Check the right answer. And a percentage would be drawn from it. To be compared from one period to the next, and from one country to another. At last, we would know what it means to be a nation of old people...

Mélanie Leclair
November 2000

MEASURING VIOLENCE: WHAT GOES ON BACK STAGE

Studies of violence do not necessarily begin by counting the number of cases of homicide, but when some "particularly odious" crime is committed, there is a rush on available statistics on the subject, so as to place the peculiar event in a numerical context. There is also the idea that because homicide is such a serious matter, the information about it is more complete and more accurate. A comparison of the figures made available by various sources and examination of the categories used to analyze them does not corroborate this postulate.

Acts, attempts and victims

French law prescribes the same punishment for attempted homicide as for "successful" homicide. Now, police statistics did not make any such distinction until 1988. In 1991, 1,259 of the 2,614 cases counted (48 %) were attempts, whereas the proportion of attempts was 51 % in 1988. Since we have no knowledge of this proportion before 1988, there is no way, barring the assumption of a sort of golden rule of constant ratios, of determining what is behind the variation in the number of homicides (including attempts) in police statistics over the long term, with a rise from 1,387 in 1972 to 2,614 in 1991 (an 88 % increment) for all of the following headings: "gang killings", "heinous homicide" (accompanied by rob-

bery), "non-heinous homicide" (for other motives), "infanticides" and "poisonings".

Does this inclusion of attempts account for the gap between the figures published by the Police department and the cases of "homicide or intentional injury of another person" counted by the INSERM (National institute for public health and medical resarch) in its statistics on the medical causes of deaths? In 1991, for example, the INSERM found 625 deaths of this type whereas police statistics reported 1,355 killings. As we see, statistical sources are still far from coherent, because of differences in conceptualization and in data-collecting methods. But there is also the definition of the unit of reckoning, which is the act in police statistics and the victim in medical statistics. The Police department report for 1991 presents a detailed analysis of 1,600 "acts" of deliberate homicide or attempts reported to the central bureau of the investigating police. Surprisingly, we learn that these 1,600 homicides produced 2,007 victims, 953 of whom were simply victims of attempts. That gives us 1,054 deaths, if our calculations are accurate. Unfortunately, we are not told how many of the 1,600 "acts" were attempts, so that we cannot calculate the average number of deaths per successful homicide. This is enough to comfort people who are convinced that they are not being told the truth about the increase in violence, and accuse the experts of doctoring the statistics.

Defining homicide

These statistical difficulties stem partially from the very definition of homicide. If we restrict ourselves to the legal aspect, the French doctrine establishes a distinction between voluntary homicide (deliberate manslaughter and premeditated murder) and unintentional homicide, which pertains to the action itself (a gun is fired intentionally or unintentionally). The former, in the strict acceptation, excludes deliberate assault and battery having caused death without the intention to deal it, which represents a third, hybrid category. In this latter case, the action is deliberate, but not the outcome (the gun was shot deliberately, but the person did not intend to kill). These distinctions are delicate, and the charges may change on the way from the police to the court. The only indisputable definition would be the one behind the penal statistics, and they show 532 convictions for voluntary homicide in 1991 and 224 for deliberate assault and battery having caused death. The decision handed down by the jury has then put an end to all legal debate over the nature of the act. And yet, even at this level, there is a considerable shadowy area: certain homicide cases are sent to a "correctionnel" court[1] because they are unintentional, whereas some people contend that they are serious offences susceptible of "cours d'assises". Homicide attempts receive similar treatment, and in case of legitimate defense the verdict may be acquittal. When the author of the homicide is not identified, the legal status of the case remains somewhat vague, following dismissal resulting from an unsuccessful investigation. Last, when the author of the act is found to have no criminal responsibility (in a demented state when the crime was committed), one is tempted to consider that homicide did nonetheless occur.

Simplification and further details

There is nothing neutral about the decision to count – or not to count – assault and battery having caused death as homicide. Whereas the number of truly intentional homicides are definitely on the rise in police statistics, as we have seen, at the same time these assault and battery cases have declined from 706 in 1972 to 217 in 1991. And what about infanticides, which have also dropped from 140 cases in 1972 to 36 in 1991? Should we include them, despite all the doubts one imagines as to their definition? This leads to a situation in which both extremes may contend to be right. A restrictive, or strict definition of homicide would only consider those cases recorded as such by the police. By this count, the number of homicides has more than doubled between 1972 and 1991 (going from 1,247 to 2,578). A broader definition, and one which is perhaps less sensitive to the variations between the categories, would add infanticide and assault and battery having caused death, thus arriving at an increase of only 35 % (from 2,093 in 1972 to 2,831 in 1991).

— Hold on, we are consulting the computer...

Or again, if sensationalism is desired, we might note that it is the "heinous homicides" – that is, homicides or attempted homicides attended by robbery – that have increased most, since the number of acts has tripled (going from 152 in 1972 to 447 in 1991); but in 1991, six out of ten of those homicides were attempts!

There is no such thing as a figure that is truer than another one, and specialists will tend to view these different presentations as complementary. The mass media require simplification, however, and therefore a short message. Can we accept the evacuation of the complexity of findings, for the sake of clarity? More cogent still, can we restrict ourselves to the framework provided by police statistics, especially if we consider – to return to our starting point, homicide as a symptom of violence within society – that another form of more or less conscious violence produces ten times as many deaths in traffic accidents as may ever be counted by statistics on intentional homicide. But those deaths will never be included in statistics on crime or offending, even if they were caused by a drunken driver. It just depends on how you look at it?

Bruno Aubusson de Cavarlay
September 1993

1. In France, moderately serious offences (délits) are judged by tribunaux correctionnels, whereas major offences (crimes) are given a jury trial by a cour d'assises.

NO OPINION, BUT SOME EFFECT

In November 1996, the Nice city government organized a referendum on its removal orders with regard (if we dare say...) to the homeless. *Nice-Matin* (a local daily paper) of November 25, 1996, reported the outcome of the vote using histograms, all on the same scale and with the same presentation, showing the percentage of abstentions (calculated on the basis of registered voters) and percentages of votes "for" and "against", the latter two calculated on the basis of valid votes (figure 1). One's visual impression was clearly that there were as many "for", percentage-wise, as there were abstentions, whereas the truth was quite different. If the "for" and "against" columns were to be comparable to the abstention columns, they would have to be given as a percentage of registered voters, that is multiplied by the percentage of valid votes. This would produce figure 2, quite different from figure 1...

However, a graphically correct presentation of the findings may sometimes correspond to perfectly incorrect conclusions. For instance, at about the same time, (November 19, 1996) *Le Monde* (a national daily paper) reported on a SOFRES (a polling institute) survey of French opinions on the educational system. Figure 3 illustrated the rates of satisfaction expressed for the different levels of schooling.

Le Monde's comment was: "As we advance toward higher education, the degree of dissatisfaction and distrust increases [...]. 80 % of French people plebiscite nursery school [...], whereas a bare half (50 % of positive opinions) approve of junior high schools [...]. Only 39 % approve of higher educational institutions." In point of fact, there is an illusion involved here, due simply to the fact that increasing numbers of people have "no opinion" as the level of the schools rises. This is really perfectly comprehensible, since experience with nursery school ("plebiscited", in the words of *Le Monde*) is obviously much more widespread than experience with universities ("criticized"...). A very different result may be obtained simply by caculating the percentages of approval and disapproval on the basis of actually expressed opinions. In that case there would still be a majority of satisfied individuals (figure 4), and there would actually be relatively little variation in the proportion of those satisfied – at least for high schools and university.

Jean-Marc Lévy-Leblond
June 1997

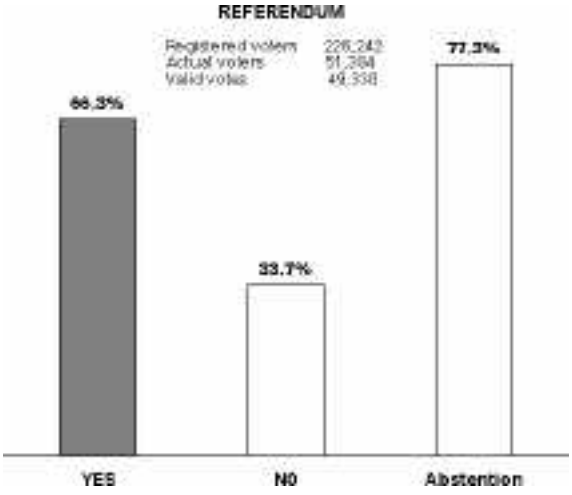


Figure 1

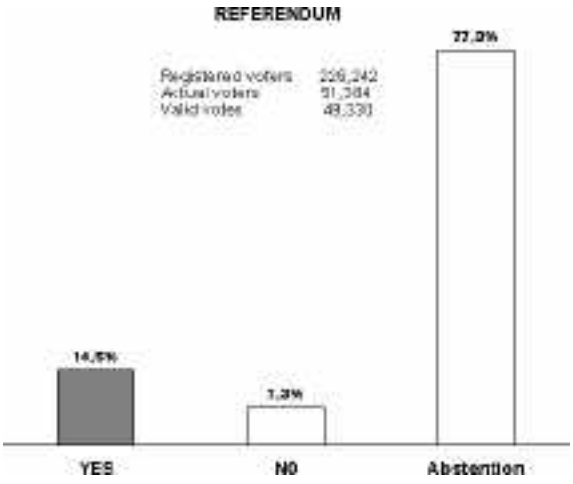


Figure 2

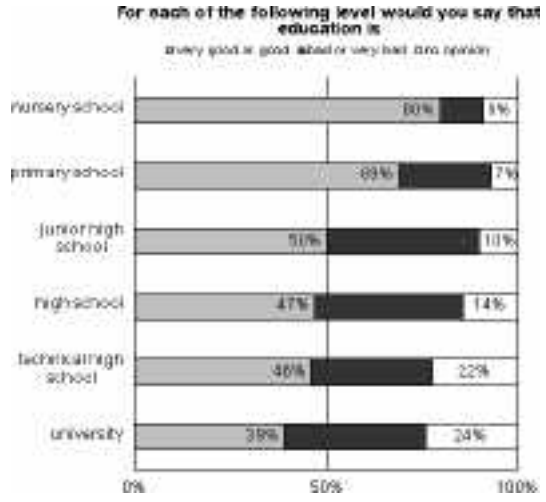


Figure 3

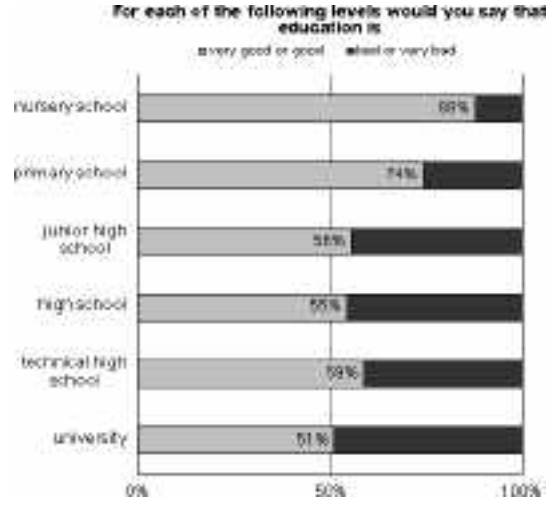


Figure 4

RIGHT FIGURE, WRONG WORD

Le Parisien (a local daily paper) dated December 2, 1998 gives us the following headline: “earnings are 23 % higher in Paris than in the rest of France”. The formulation is deceptive! Doesn’t this give the reader the impression that a same person, working in Paris, would be paid nearly a quarter more for the same job than if he worked elsewhere? The article says nothing that contradicts that interpretation, perhaps because the writer himself does not master the subject.

If we take a closer look, however, we see that the mean income of Parisians is compared to that of “provincials”. What is compared is neither the same people nor the same jobs. Since Paris has a larger proportion of executives than the rest of France, even if those executives were paid the same salary everywhere, while workers and employees were also paid the same wages in both places, that alone would produce different means. Actually, we do not know (or at least, the article does not say) whether, all else being equal, Parisians are paid more, nor how much more. The figures given are accurate, but the meaning ascribed to them is not.

Furthermore, what is discussed here is “available income”, which is to say the total amount received through work, rentals and interest accrued as well as social benefits, retirement pensions, family allowances, etc., minus internal revenue payments for those who pay taxes. The term “earnings” is not very accurate either.

René Padieu
April 1999

WE MADLY HOPE THEY ARE RIGHT

"Bovine spongiform encephalopathy will have disappeared from Britain's herds within four years without any need for massive slaughtering of animals, claims an international report published yesterday in the journal *Nature* by researchers from Oxford. [...] The epidemic is in its terminal phase and the number of cases will be 'insignificant' by 2001". Reassured, at last?

According to these epidemiologists, "close to one million infected animals were consumed before 1989, at which time a ban was placed on the sale of that organ meat most likely to transmit the disease" (*Libération*, a national daily paper, August 30, 1996). On the previous day the same paper had published other figures, communicated by Reuters: "Nevertheless, the large number of sick animals consumed gives good reason for concern. There were some 903,000 mad cows between 1974 and 1995, 446,000 of which were consumed before 1989 and 283,000 others consumed before the stricter restrictions were adopted last December". 446,000 + 283,000 = 729,000. There is a deficit of 903,000 – 729,000 = 174,000 cows. Are you following me? Were they eaten? If so, they must have been eaten on New Year's eve, December 31, 1995, to be counted in one instance and not in the other. This is the famous problem of the borders, in statistics. By the way, there is no mention of whether the cows were consumed locally or "taken out" to the continent.

This vagueness when counting mad cows reminds me of a wonderful cartoon by Plantu[1], about the latest population count in China. It shows a census-taker in front of a huge crowd, in the process of counting people: "Someone moved! I have to start over". I realize there's something incongruous about the comparison. Sorry about that.

Victor Descombres
November 1996

[1] *A famous French cartoonist.*

IS THERE SUCH A THING AS IMMUNIZATION AGAINST A RISK?

Vaccination against hepatitis B is not compulsory in France, and it is up to parents to decide whether or not to have their 12 year-old child vaccinated... in the light of the dim clarity shed by a series of letters and figures?

First there are the letters

There are many sorts of hepatitis. They are defined by letters: A, B, C, D and so on. Hepatitis B, our subject here, is a viral disease that may be transmitted sexually and through the blood and saliva. This means that health professionals and young people with "at-risk behavior" are particularly exposed.

Fortunately, many virus carriers will never experience any special problem, but in a small proportion the evolution of the disease is quite serious: some asymptomatic cases develop symptoms, which may become chronic, a number of the latter cause cirrhosis, which may produce liver cancer.

Perfectly effective vaccines are available since 1981. At first, only "at-risk" groups were vaccinated, but in 1991, WHO discovered that this strategy did not suffice to cause regression of the disease throughout the world, and therefore recommended that national authorities prescribe the systematic immunization of young people, with the long-term goal of eradicating the disease.

France adopted this strategy in 1994, and mass immunization campaigns targeted at infants and pre-adolescents were launched, as a result of which about 40 % of the population was immunized in 1999.

Then there are the question marks

All vaccines have "undesirable effects", which may be more or less unpleasant. Most are minor and do not call the beneficial character of this vaccination into question. But these side effects are conscientiously monitored by the health authorities, of course, to make sure that no more serious consequences develop. Any physician who observes serious side effects following the administration of a vaccine (or of any other medication) is under the obligation to report it

to the nearest drug monitoring center. These centers analyze the event and the results of their work are put together at the national level by the Drug Administration. On the basis of available findings, this agency attempts to establish a causal link between the medication and the side effects observed.

In the case of the anti-hepatitis B vaccine, some cases of severe illness, and especially of multiple sclerosis and other ailments known as demyelinizing diseases have been reported since the introduction of mass immunization. Is there a causal relationship between these ailments and vaccination? In October 1998, the Nanterre court said there was. Without calling for any special forensic expertise, on the basis of the observation that Miss X had developed multiple sclerosis within days of that vaccination, it considered that a causal relationship was patent and sentenced the manufacturer of the vaccine to pay damages to the victim.

With headlines denouncing "the killer vaccine", the causal relationship seemed to be equally obvious for some journalists. The victims were of the same opinion, and felt that the statisticians were being overcautious. An association, the REVAHB, was actually set up to make contact between victims, support them, defend their material and moral interests, and contribute elements of proof in the lawsuits they bring for responsibility. The REVAHB has accumulated a great many dossiers tending to demonstrate the causal relationship between vaccination and severe neurological ailments.

Then, numbers are brought to bear

But if a few individuals among the 25 million people who are vaccinated in France develop multiple sclerosis within weeks of vaccination, it may be a simple matter of chance. Between 1993 and 1998, the number of notified cases actually remained much lower than would be explained by simple coincidence. Does this mean that there is no causal effect? Alas no, since there is no guarantee that the figures are exhaustive, despite the legal obligation to report cases. With concern rising in 1997-98, the Drug Administration decided to launch four different large-scale studies using four different methods, to get to the bottom of the matter. In September 1998, the results of the 4 studies were released simultaneously, and the world's greatest specialists were locked up in a room for an entire day to analyze the findings and draw conclusions. Several days later the ministry published the outcome, with the utmost transparency.

The first and second studies were what is called case/control studies, in which a sample of multiple sclerosis victims was analyzed to determine whether the rate of immunization against hepatitis B differed from that found in the control sample.

The first study, conducted at the Pitié-Salpétrière hospital in Paris, showed an odds ratio of 1.7. In other words, all else being equal, the vaccination rate of multiple sclerosis victims was 70 % higher than for people without that ailment in France. Does this constitute proof? No, for there is a great margin of uncertainty attached to this 1.7 ratio. The "95 % confidence interval", that is the range within which the actual ratio has 95 % of chances of being located, is the range [0.8;3.7] here. In other words, if we want to have less than one chance out of 20 of being mistaken, we must confine ourselves to the assertion that the odds ratio is somewhere between 0.8 (immunization would be 20 % less frequent among multiple sclerosis victims) and 3.7 (immunization would be 4 times as frequent then). Statistically speaking, the result is said to be "non significant at the 5 % threshold", since 1 falls within the confidence interval. There is simply a suspicion.

The second, more powerful study covered 18 neurology departments in University Hospital Centers, the largest possible sample of its kind. It collected 242 cases of demyelinizing diseases, compared with 407 paired controls. It found that:

— if we take only patients whose immunization is attested by an up-to-date vaccination card, the odds ratio is 1.4, with a 95 % confidence interval between 0.4 and 4.5;

— if all patients are considered, the ratio is 1.8, with an interval between 0.7 and 4.6.

Still not conclusive with a risk of error of less than 1/20th, but again, some suspicion. Would the third study settle the matter?

This study covered an extremely large number of individuals (4 million people, 520 cases of multiple sclerosis, 2,505 controls), thanks to the ongoing data bank fed by English general practitioners. It found an odds ratio of 1.4 for the occurrence of multiple sclerosis within two months of immunization, with a 95 % confidence interval between 0.8 and 2.4.

Again, a suspicion, but still nothing conclusive!

The fourth study considers notifications of severe side effects. As mentioned above, notification to the disease monitoring network is not exhaustive. Now it just so happens that the REVAHB has also been collecting notifications, and has recorded a great many suspected cases over several years. Some cases are reported to the disease monitoring network, others to the REVAHB, still others to both, and some to no-one at all. In this case a method inspired by.... a

pond-fishing technique (!), the capture-recapture method, is used to assess the percentages of notifications of each sort.

If we postulate that the fact of being reported to one of the two circuits does not affect the probability of being reported to the other (the validity of which is difficult to ascertain, but which does not seem absurd, a priori), measurement of the proportion of cases notified to each agency that were also notified to the other should give some notion of how exhaustive they are, and above all, of the total number of cases. That is precisely what was done. This yielded: 236 cases notified to the disease monitoring network, 71 to the REVAHB only, and 16 cases to both. According to calculations, the number of cases was comprised between 361 and 1,834 (with a 95 % confidence interval, as usual). Comparison of these figures with the expected number of cases within the population, considering the number of vaccinated individuals in France, is again inconclusive.

It is highly improbable that any subsequent studies will be able to go much further.

The risk of hepatitis B

Can we at least determine the risk of hepatitis B, for the prevention of which the vaccine is administered?

The Institute for Health Monitoring (formerly the RNSP) is in charge of this evaluation. Since there is no obligation to report hepatitis B, its incidence is not accurately known. An estimation is obtained by extrapolation of the figures given by the doctors in the "sentinel network", who detect the symptoms of hepatitis (since they are only concerned with symptoms, they have no way of detecting symptom-free cases of hepatitis). In 1994, the annual number of new cases was estimated at 7,800, which estimation was cut down to 3,100 cases of symptoms of hepatitis B, on the basis of the 1996 data.

The RNSP had done a simulation of the benefits of vaccination for a cohort of adolescents followed up until age 30. It estimated that immunization avoids between 3 and 12 cases of fulminating hepatitis and between 12 and 58 cases of cirrhosis of the liver, some of which would evolve into lethal liver cancer. Naturally, the risk for any given person depends on a number of individual parameters including the presence or absence of at-risk behavior.

Conversely, an extrapolation, for the same cohort, of data on the side effects of the vaccine, discussed above, arrives at an estimation of between 0 and 2.2 cases of severe neurological ailments (such as multiple sclerosis) caused by vaccination.

The RNSP concluded that "the benefits to the community of vaccination against hepatitis B seem to be greater than the potential risk represented by it".

Now that you are well informed, will you have your 12-year-old vaccinated?

The solution

To avoid this terrible dilemma, and rid yourself of the need for the above statistical developments, have your child vaccinated during infancy. The specialists unanimously proclaim immunization to be effective at that time, to avoid the need for immunization at adolescence, and to be devoid of any undesirable side effect.

Jean-René Brunetière
March 2000

BIRTHS: RUSSIA IS IN THE RED

In the May 28, 1996 edition of *Libération,* a national daily paper, a report by the UN Population Fund is presented by a certain "M.L.C." (Movement for the Liberation of Couples?) as follows: "Europe, North America and Japan do indeed have low birth rates, sometimes down to zero in countries such as Germany, or negative, as in Russia". We were aware that the German have few children, but to the point of not having any at all... As for Holy Russia, it is discovering anti-babies, made of anti-matter, naturally, the count of which is represented by a negative number.

Victor Descombres
August 1996

THE BIG FISH AND THE SMALL FRY

358 X > 2,600,000,000 Y

X being the average fortune of the 358 richest people in the world and Y the average yearly earnings of the 45 % poorest of the world's inhabitants, according to the Annual report on human development produced by the United Nations Development Programme. So, what are we going to do about it? See René Padieu's article below.

Pierre V. Tournier
August 1996

SEVEN GOLDEN MEN

Seen in *La Croix* (a French national daily newspaper) dated June 13, 1997: "In today's world, with its one billion illiterates, 160 million malnourished children and 110 million non-school-attenders, the UNDP (United Nations Development Programme) remains resolutely optimistic. According to this agency, it would cost some 33 billion dollars a year for ten years to provide access to water, health and education for the entire world population. The same amount again would be needed to eradicate poverty everywhere. The total bill, some 66 billion dollars, may seem gigantic, but it is perfectly within reach, according to the UNDP, which points out that the fortune of the seven richest people in the world exceeds that sum."

Comparing figures may give people ideas, but it is important that those ideas not be wrong. After the first start of indignation, let us do a little reckoning. With 66 billion $/yr. spent for ten years, we are told, we could eradicate poverty. That means that at the end of those ten years, there would not be anything more to be done; the problem would be taken care of once and for all? Sure, we are agreeable...

According to the text cited, we understand that the sum of 66 billion dollars corresponds to the fortune of the seven richest people in the world. That means that by confiscating their fortune, we may finance the first year. What is to be done for the following years? For the second year, we would have to go on to the next richest people on the list: since they are somewhat less rich than the first group, we would have to take more of them (how many is not said). The third year, even more rich people would be needed, and so on, so as to mobilize 660 billions, in all, rather than 66. How many people would have to be touched for our ten-year program? Even if this number is quite small in regard to the world's six billion human beings, it would be much less striking than the figure of seven announced here. Doesn't throwing the figure seven at us seem somewhat abusive, if not to say a bit dishonest?

René Padieu
January 1998

ON THE USE OF PERCENTAGES BY THE HUNDRED

A percentage is a simple thing: a salary increment of one and a half percent, a three percent cut in the unemployment figure, are within everyone's comprehension. And yet, even practiced journalists and the proofreaders who check on them may easily get mixed up. Here are two examples within the past year:

In *La Croix* (a French national daily paper) dated Tuesday July 6, 1999, Bruno Chenu, in a paper under the title "football's millions", writes: "The transfers that have gone on this month are dizzying. In four years, the size of transactions has been multiplied by four. 400 % inflation: that's not bad!"

Dizzying... and give you hallucinations, if you take plus 400 %, which means a multiplication by five, for a multiplication by four. Plus 100 % means doubling, and plus 200 % is therefore a tripling, etc...

Be this as it may, such magnitudes definitely are frightening, and as the author of the paper says: "How can we get out of this spiraling inflation, which should, after all, end up shocking ordinary spectators and reasonable supporters?".

Sub-zero standard of living

More recently, in *Télérama* (a cultural and TV program magazine) dated December 29, 1999, Gérard Chaliand, a specialist in geo-strategy, was questioned on the outcome of the December 1999 legislative elections in Russia. He interpreted the results as "the symptom of a disoriented population", and added: "How would we react if we had lost something like 300 to 400 % of our standard of living in less than five years?". As we know, the temperature is often sub-zero in Russia, but we were unaware that the same could be true of the standard of living!

Blunders of this sort may be avoided by using percentages properly, which is to say when the variations they are supposed to measure are small. A percentage of 100 % or more is difficult to comprehend. Beyond 100, it is best to speak of doubling, tripling, etc. Similarly, for large drops, it is preferable to speak of halving, instead of a 50 % drop, or a division by 3, rather than a drop of 66.6666666... %.

That's easy to say, however. Take prices: a price rise is normally expressed in percentage form, since prices are supposed to change slowly, but there can always be inflation, which may reach 8,000 % for instance. So, dear reader, what would you say the multiplier would be, here?

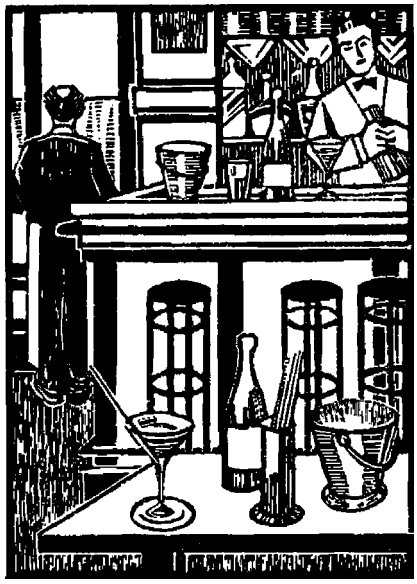
Alfred Dittgen
June 2000

COCAINE AND SANGRIA

We just happened to be in Barcelona last June 18th, when a front-page headline in *El Pais* (a Spanish national daily paper) proclaimed "Los jóvenes españoles acceden a las drogas antes que los europeos" (Young Spaniards start using drugs earlier than other Europeans).

A stupefying piece of information

The front page of the daily was referring to an official report revealing that 10 % of Spanish adolescents,



but above all, 41 % of 15 to 29 year-olds, had already taken cocaine. These figures were taken from a major survey on youth, drugs and night life in Spain. However surprised they may be at the extent of the problem, readers who are unfamiliar with quantitative data on drug use will probably not realize how surprising and improbable this information really is. To understand, one has simply to refer to the epidemiological data published annually by the European monitoring center of drugs and drug addiction (EMCDDA): at the close of the nineties, cocaine consumption among 15 to 34 year-olds was comprised between 0.3 % and 5.2 %, depending on the country, for experimenting (life long prevalence) and between 0.2 % and 2.7 % for use over the last twelve months[1]. We are far from those 41 %, even if Spain does have the highest prevalence figures in both categories. Furthermore, a search on the site of the Spanish drugs observatory, the Plan Nacional Sobre Drogas (PNSD), tells us that there has not been any major change in cocaine consumption, with the exception of a slight rise among young people in recent years[2].

In 1996, for school-attending 15-16 year-olds, Spain was near the top of the list for prevalence of cocaine use within the lifetime (2.5 %), but behind Ireland (4.3 %), Italy and the UK (3.0 %). The PNSD was also able to provide data for 1998, upping that prevalence to 4.3 % (4.8 % for 14 -18 year-olds), but not to the point of reaching the 10 % announced by *El Pais*, which would make Spain rank first in Europe, by a long shot (for the sake of comparison, in 1999, less than 2 % of French 14 to 18 year-olds had experimented with cocaine[3]).

An olé olé survey

The key to the mystery lies partly in the *El Pais* paper, but it is well hidden. The survey on which the analysis is based is neither a survey of a representative sample of the overall population, nor a survey of school-attenders, but a method of observation recommended by Calafat et al. (1998), based on "key informers in the night life world"[4] . The survey was conducted in Madrid, Bilbao, Palma de Majorque, Valencia and Vigo. In each of these five cities, eleven informers, selected for their familiarity with the local night life, were asked to develop the questionnaire, define a typology of young night revelers and do interviews in key places. Four types of party-makers were defined (the very young, the visible, youths in crisis situations and the afters), and 260 individuals of each type were questioned in each of the five cities. Not only is this obviously not a representative sample of Spanish youth, as the big headlines in the press would have it, but it is not even a representative sample of young people who go out at night. For, although the five cities included in the study may be viewed as particularly given to "partying" (Palma de Majorque is a tourist haven and Vigo's long history of smuggling of all sorts makes it a good place to obtain drugs), readers with experience with Spanish partying will be surprised not to hear anything about Seville, and - more surprising still - Barcelona. However urban-centered, this study is not exhaustively so. Moreover, the advance definition of types, although defined by connoisseurs, implicitly prejudges the results and the prevalences found in the end, to say nothing of the selection bias. What we have here, then, is more a comprehensive approach or an ethnographic study, quite instructive at that[5] , provided it is not attired with the role of measuring the extent of use within the entire population. The reproach that may be made to the *El Pais* article, then, is that it grossly exaggerated the traits, and kept us panting all the time we translated it and did the necessary checking, but all the same, we recognize it did have the elegance to present the main elements of the method.

[1] Extended annual report on the state of the drugs problem in the European Union, 1999, EMCDDA.
[2] http://www.mir.es/pnd/doc/pre_ing/consumo.htm
[3] Beck F., Choquet M., Hassler C., Ledoux S., Peretti-Watel P., Consommation de substances psychoactives chez les 14-18 ans scolarisés: premiers résultats de l'enquête ESPAD 1999, évolution 1993-1999, Tendances, OFDT, n° 6, 2000.
[4] Calafat et al., Characteristics and social representation of ecstasy in Europe, 1998.
[5] Especially for the study of factors connected with drug use and of the representations and perception of risks linked with substance use.

François Beck and Cristina Diaz-Gomez
January 2001

THE TERMINAL SPECTATOR

The indicator known as the GG (after George Gerbner of the Annenberg School for Communication, in Pennsylvania) was used in September 1995 by the French Higher Council for Audio-visual Matters (CSA) for its report "on the presentation of violence in

fiction on French television" (*Libération*, a French national daily paper, January 15, 1996).

GG = 100α + 2β + 2ϕ + 100λ + 100μ, with

α: the proportion of shows containing a violent sequence,

β: the number of violent sequences per show,

ϕ: the number of violent sequences per hour,

λ: the proportion of main characters involved in violent acts (as author or victim),

μ: the proportion of main characters involved in killings.

GG is calculated on a weekly basis.

The following definitions taken from the *Petit Robert* dictionary may be helpful:

Main character: the most important one (sic).

Sequence: a series of shots forming a whole with respect to the particular dramatic action shown.

Violent: 1 – acting or expressing itself without any reserve, 2 – having an intense effect on the senses, 3 – excessive. Whence the possibility of calculating three different indicators, called GG1, GG2 and GG3.

To avoid introducing choices that may upon closer inspection be found specious, calculation of the indicator may be done using the harmonic average of GG1, GG2 and GG3. Do your own reckoning:

— If GG ≤ 100: you belong to the category of people who only watch the weather report, in good weather, and then, "Good night kids".

— 100 < GG ≤ 200: your index is pretty much the average for the French stations (146.89 according to the CSA), which proves that you watch practically anything and everything (you make random choices).

— 200 <GG ≤ 300: do not exceed the amount prescribed by your doctor. Consult if needed.

— GG > 300: Get rid of your TV set fast, before it's too late. Your intimates are in danger, you are about to commit the irreparable.

Pierre V. Tournier
August 1996

IN SEARCH OF THE LOST GENE

Penumbra's special correspondent investigates the secrets of life and of adulterine children, using DNA fingerprinting.

The July 29, 1994 Act relative to the respect of the human body in France sets down strict regulations for the use of DNA fingerprinting. This technique is extremely useful for police investigations, such as the identification of a corpse by analysis of a drop of blood or a single hair, or again, for identifying a rapist by analysis of sperm. Its use is potentially dangerous (un-genethical), however, if private individuals abusively take advantage of it to ascertain a person's biological father, in particular. The risk involved is particularly great since the very nature of the specimen and the minute amount required make it feasible for analysis to be conducted without the knowledge of the concerned party.

One of the main arguments of the instigators of this strict regulation (which contrasts with the policies of other countries, and of the English-speaking countries in particular, which frequently resort to these methods[1]) is that this fingerprinting may endanger the family, since many presumed "legal" fathers actually are not the "biological" fathers of their children, generally unwittingly so. The figures quoted turn the country into an immense vaudeville scene, and give every reason to fear for the French family.

In 1991, in her report to the prime minister on which the 1994 Act on bioethics was based, Noëlle Lenoir stated that "There is no serious investigation of the number of adulterine children, but some people contend that between 10 and 20 % of presumedly legitimate children are in fact born out of adultery. One may easily imagine the catastrophic effects that would be produced by free access to DNA fingerprinting if it could be performed by any laboratory that so desired. Such access therefore requires regulation"[2]. No source is quoted.

The veil of discretion

The national weekly *l'Express* gave slightly lower figures in a March 1992 article by Gilbert Charles,

who wrote: “the fact remains that by invading private life, this new technique [DNA fingerprinting] raises a challenge of another order: it will lift the veil of discretion covering the father’s identity. As we know, 10 to 12 % of allegedly legitimate children are actually born out of adultery (this figure, obtained through prenatal screening tests, corroborates the long-standing estimations of the clergy, based on confessions)”. Have we read correctly? The Church knew, and we were kept in ignorance!

The *Quotidien du médecin* (a medical periodical) published a more secular and cautious view in 1998: “our country has a peculiar legislation, in that the head of family is considered to be the father of its children, barring proof to the contrary. Now, while this generally is the case for the first children, it is much less true for the others, since the proportion of children who were not fathered by their presumed father is estimated at several %”. In the December 23, 1991 issue of *Libération* (a national daily paper), Loïc Chauveau, referring to a legal journal, gave another estimation, stating that “an estimated 10 % of officially recognized children are believed not to have been begotten by their legal father. This is enough to instill doubts in the population at large.”

In his ongoing quest for the scientific source of this harvest of “it is known” and “it is believed”, our investigator came upon the following paper published in the 1991 general edition of *La Semaine Juridique* (a law periodical): “there is however the risk that such [genetic] investigations of families would disturb the peace in many homes, given the known fact that nearly 10 % of what the law deems legitimate children are actually bastards... not to speak of the thousands of children born to a legitimate couple following artificial insemination with a donor’s semen”[3].

The author of this article, Professor Galloux, leaves a clue in the form of a quotation of a source, his colleague Durry, in the *Jurisclasseur périodique* (another law periodical). Our travels through the land of the juridical were getting quite enjoyable, so we dived deeper into our law library.

A fierce fight

Our efforts were not in vain. Having shaken and dusted off a dozing head librarian, our investigator managed to obtain the *Jurisclasseur* for the year 1984. In it, he discovered a fierce fight between eminent jurists over the presumption of legitimate paternity using blood testing. Professor Durry attacks his colleague Atias as follows: “would he suggest that all those children who are not disowned were truly the works of the husband? Suffice it to remind him that according to the specialists, at least 7 % of legitimate children are actually adulterine ‘a patre’. We may be glad that the law does not facilitate the implementation of this truth, and at the same time, not deny the fact itself”[4].

Fortunately, Professor Durry leaves some indications, along with a reference, a work entitled “Droit de la filiation et progrès scientifiques”, containing a study by Doctor Denise Salmon, from which he draws the following quotation: “between 7 and 10 % of children are not the biological children of their legitimate father”. Sensing that he was approaching the scientific source, the investigator was overwhelmed with a gust of fresh air. At last, a doctor, after all these jurists. A woman, after all these machos, a mother, perhaps, the guardian of the secret of the origins, after those secrets gathered in the confessionals!

So the investigator returned to the library, once again he shook the head librarian, now being wrapped in the web of a beautiful spider, and discovered “The” Book, the portal of the Temple of scientific knowledge. The work, edited by Professors Labrusse and Cornu, contains the proceedings of a colloquium held in Paris in June 1978[5]. The quotation is there, on page 44. Doctor Denise Salmon, researcher at the CNRS, does really broach the fundamental issue of the proof of paternity in a paper in which she explains, in 23 dense pages, the scientificity of the methods used, the precautions to be taken in such research and in interpreting the findings, the difference between a scientific truth and a legal truth. Alas, in her emphasis on the danger of genetic testing, she utters the fatal phrase: “between 7 and 10 % of children are not the biological children of their legitimate father. Most of these are first-born. Many families take these involuntary adoptions into stride, and the genetic studies that reveal such incompatibilities must remain discrete. Unfortunately, there is reason to fear that the aura surrounding these studies and the curiosity of those people involved will make it increasingly difficult to keep the secret”[6].

Visibly this article, like the tombs of the pharaohs, has been plundered by subsequent writers who practice speed-reading. The *Quotidien du médecin* , for instance, had gained the exact opposite understanding of what was written about the filiation of the first-born child, who is often granted legitimacy out of indulgence. But above all, the plunderers of the “7 to 10%” estimation did not read the rest of the article, nor the ensuing discussion, struck and titillated as they were by their own imagination and fantasies about the secret of paternity. Professor Carbonnier had asked the right question straight off: “how were these figures of 7 to 10%

of non-legitimate children among those presumed legitimate established?". Doctor Salmon answered, without beating about the bush: "it is an estimation, with no statistical validity". She then went on to state that researchers did not agree on the exact figure, but simply noted the "relative frequency of the occurrence". Professor Terré then took the floor to simplify the problem, emphasizing the fact that: "the transition from illegitimacy to legitimacy occurs within the proportions given by some demographers, of 45 to 59 % of illegitimate children who become legitimate one day or another. These findings are rather dated, but given this morning's contributions and what we have just learned about their fragility, I do wonder whether our basic issue does not suffer from unclear figures...".

Based on confessions

At this point a certain Mr. Pohier spoke out, bringing his own insight to the question: "You find these figures of 7 to 10 % surprising. I have a twofold practice in this field, both of the confessional, (we lack statistics here, as well), and of clinical psychology (here too, there is very little statistical evidence), but what surprises me, sir, is your own astonishment, because my experience in both fields seems to corroborate this phenomenon." This contribution, so concise in its content, is certainly the scientific source to which *l'Express* refers concerning "the long-standing estimations of the clergy, based on confessions".

Fortunately, Professors Terré and Carbonnier did dare to speak out again once these definitive truths had been uttered. The former expressed his surprise at the claim of a rate of 7 to 10 %, while the second questioned the representiveness of the sample on which the studies must have been based.

The representative of the ministry of Justice closed the discussion with a show of solemn learnedness, asserting that "in divorce cases, when the wife does not request alimony for a child this is a disguised admission that the legitimate child is in fact illegitimate. The ministry, which has been establishing statistics on all divorce cases for many years, would probably be in a position to determine this particular statistic, which would, in my opinion, probably back up the percentages of the present evaluation...". Say no more! Fortunately Doctor Soulié subsequently gave a remarkable speech in which he explained how complex, psychologically, the notion of truth is with respect to filiation, and the power of fantasizing...

Our investigator was unable to meet Doctor Salmon, who must have regretted she had given those jurists the estimation "between 7 and 10 % of children are not the biological children of their legitimate father", which, despite her careful phrasing, was to be utilized and fantasized later on, to become, in an official report 13 years later, "between 10 and 20 % of legitimate children are in fact born out of adultery".

May this humble detective, overcome by the importance of his discoveries, dare to put some naive questions to these eminent specialists in different fields?

1 — To be legal, research into the contradiction between legal paternity and biological paternity must be conducted on a sufficiently large and representative sample of cases reduced to anonymity, and based, for instance, on a series of blood specimens from a same family. How, then, in an anonymous sample, can one determine the extent of voluntary legitimization, through recognition or marriage, of a child who the man knows is not his own, the proportion of artificial inseminations, and of full-fledged adoptions? That is to say, of all those cases in which paternity is voluntarily shouldered, and which have nothing to do with adultery?

2 —Do jurists who specialize in the law of filiation always use such flowery expressions as "born of the works of the husband"[7] and "adulterine *a patre*" to designate the fruits of love-making? Are jurists' children works of art or works of the artist?

3 — Have the Vatican's statistics been published?

Jean-Paul Jean
August 1994

[1] Great Britain is a case in point: genetic fingerprinting is used to determine whether a child coming from a country in the Commonwealth and requesting naturalization is effectively a biologically verifiable descendant of a person already naturalized.
[2] "Aux frontières de la vie: pour une éthique à la française", Documentation française 1991, p. 73.
[3] N° 4386 dated October 16, 1989.
[4] Doctrine 3497 P. 107, note 40, JCP 1984 doctrine 3171
[5] Labrusse et Cornu (sous la direction de): "Droit de la filiation et progrès scientifiques", éditions Economica 1981.
[6] Idem p. 27s. "La preuve scientifique de la paternité: état de la science et déontologie".
[7] The expression is more solemnly legal in French (translator's note)

LIVINGSTONE IS BACK

The World Bank's latest report on Africa claims that the Congo (Brazzaville) has a rate of economic growth of close to 10 %, one of the highest on the continent, nearly as good as the Mauritius Island and Botswana.

A dismaying piece of news, since this was a year in which the Congo experienced a terrible civil war which had ruined (among other things) its economy! According to some unofficial information provided by a member of the Bank, the figure was calculated on the basis of the funds given (or promised) by the Western nations, the IMF, the World Bank and others for the reconstruction of the country. The sums are added up and translated in terms of rate of growth of the GDP. Good thinking!

In the same line of thinking, the Kosovo should have the highest rate of economic growth of its history this year, and probably the highest in the world. OK, lets say 25 %.

Antoine Labey
October 1999

— if we give one day a week off, we halve the number of unemployed..

— OK, 3 million.. 4-day weeks, that makes 1. 5 million. 3 days: 750,000...

— I've got it calculated. If everyone stops working we'll still have 93,750 unemployed.

MUMBLE-JUMBLE STATISTICS

In the *Figaro* (a French national daily paper) dated October 19, 2000, I found the following paragraph by columnist Max Clos, in an article entitled "Who is burning the synagogues?":

"A statistical desert: How many North Africans are there in France? How many Muslims? To be truthful, we must admit we have no idea. Sociologists and demographers have nothing more than estimations, and their figures vary enormously, ranging from three to six million North Africans. Some think the figure will double every 20 years, reaching 50 million in 2060. Others judge this hypothesis improbable, for various reasons...".

First of all, North African and Muslim are not synonymous: the Turks, and a noteworthy proportion of the Africans residing in France are also Muslims. Further, Islam is easily transmitted from one generation to the next, but can the same be said of North Africanism? There are certainly still a great many Catholics among the descendants of the Italian Catholics who migrated to France in the early 20th century, but there are certainly very few Italians. Why shouldn't the same be true of North Africans?

Nonetheless, let us make the stupid postulate that the descendants of North Africans established in France remain North Africans. If their number doubles every 20 years, to reach 50 million in the year 2060, they would have to be 25 million in 2040, 12 and a half million in 2020 and over 6 million today. This figure exceeds the probable estimation for Muslims in present-day France (see Pénombre, Chiffres en folie n° 15, France-Line Mary, "La religion du nombre" and Alfred Dittgen's comments). As for the doubling of the population, which would suppose an annual growth rate of 3.5 %, one hardly sees how it could occur, short of a flood of arrivals from North Africa. It would require a fertility rate of 7 to 8 children per woman, a rate that did exist in North Africa some thirty years ago, but has since been divided by 3 there, and by more than that among the people originating from that region but residing in France.

It is normal, when attempting to measure an elusive

reality, to give a range, with two reasonable figures, but it is stupid or criminal to give a range with one reasonable and one absurd figure.

Alfred Dittgen
January 2001

A STORY OF NINETY YEAR-OLD NUNS

In a piece published on page 109 of the special issue of *La Recherche* (a scientific periodical) on the aging process (July- August 1999), we read the following: "avoidance of intellectual activities is a major factor in aging badly. Witness a study on 170 nuns in Minnesota, showing that those who aged worse were those who had received the least schooling."

This single piece of evidence from a study of a small sample of an admittedly quite unusual population seems to afford a weak argument in favor of the rule announced. Do these Minnesota nuns have the peculiarity of, precisely, not having any peculiarity? Nuntheless, the rule itself may be true. We have also been spared the correlation, probably not very close, between the quality (?) of schooling and intellectual activity in adulthood.

Mélanie Leclair
October 1999

LETTER TO THE EDITOR

Hello,

I am delighted to discover your group, your journal and your Web homepage. I have just spent several hours visiting it, I want to read it all! Even though the homepage offers free reading, I want to become a member anyway (I'm sending a check by mail), because I am so happy to meet people who are as sensitive as I am to the magical, unconsidered aspect of the handling of numbers (it's mathematical, therefore it's true, and there's no need to try to understand). This also made me want to send you a paper as well.

Seen in *Courrier International*[1], a scientific article dealing with a study of castes and genetics in India: "women marry outside of their caste more often than men". Please note, this is not just an incidental phrase, it is the very crux of the entire scientific study summarized by the article, or at least such as one may deduce by reading said article. I know nothing about genetics, aside from Mendel's pink and white flowering peas, and very little about the Indian caste system, but I should think... A woman marries outside her caste. With a man. Who therefore also marries outside his caste. If the initial assertion is to be true, one man would have to be married several times outside of his caste, so that for a single man we would have several women married outside of their caste. But this would mean that many men do not marry at all, and this would have a considerably greater genetic influence (a small percentage of men generating children) than the fact of marrying within or outside of one's caste.

I have a better solution. Let us imagine a woman who marries a polygamous man outside her caste and

later (or simultaneously) marries a monogamous man from her own caste. Here, in short, is how things might go. Two women, Cecilia and Tania, two men, Jules and Alfred. Cecilia, Tania and Jules belong to the same caste, Alfred belongs to a different caste. Alfred marries Cecilia and Tania (one after the other or both together), while Jules marries Cecilia. This makes 100 % of the women and 50 % of the men married outside their caste. The initial assertion is feasible, then. But what a scoop about the matrimonial system in India!

So long,

Fabienne Vansteenkiste
April 1999

[1] *C.I. n° 427, January 7, 1999 – article translated from "India today", a New Delhi paper, "is your caste inscribed in your genes?".*

Pénombre*: in French,* **peine** *(pain, trouble, penalty) and* **nombre** *(number). Would Penumbra do as a translation? A particular lighting; scrutinising ambiguity; looking for a* **Gay Science** *(Nietzche).*
Pénombre *was launched in 1993 to open up a field of reflection on the use of numbers in the public debate. It aims at promoting discussion between experts in data production and a variety of "consumers": administrative and political decision-makers, journalists, teachers, and concerned citizens.*
This purpose is achieved through various publications and meetings:
• *A quarterly,* **La Lettre Blanche** *publishes reflections and questionings from members. It is completed, occasionally, by*
• **La Lettre grise***, which welcomes more thorough reflections on number production and use.*
*All these texts are available on the web: www.penombre.org and some of them in a printed book (***Chiffres en folie, petit abécédaire de l'usage des nombres dans le débat public et les médias, ed. La découverte, 1999***)*
• **Les Nocturnes** *are meetings devoted to specific issues held once or twice a year: two recent ones focused on relationship between penal policy and public opinion, and evaluation of high schools' level, the last one concentrated on measuring the service rendered by psychiatric hospitals.*
• *Several working groups: currently, on the use of numbers in the field of mental health, recording and using data about ethnic origin, the evaluation of schools' level.*

Pénombre is an association supported by members' subscriptions (23 euros a year), and donations.

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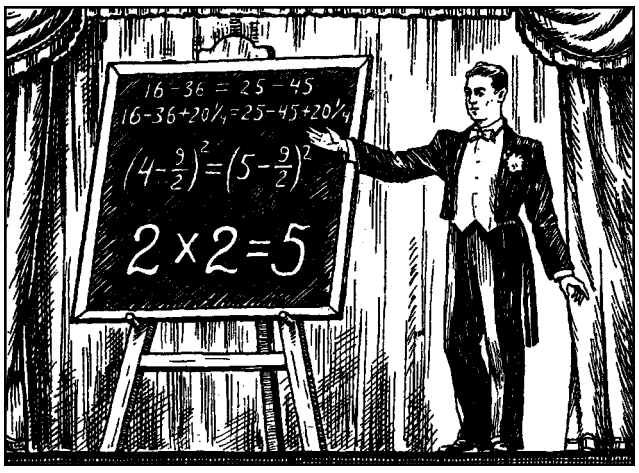

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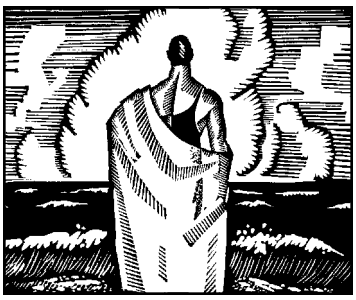

Translated from French by
Helen Arnold

Nul ne peut se prévaloir de sa propre turpitude

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