DRUG POLICIES AND DRUG-RELATED MORTALITY IN EUROPE

***Axel Groenemeyer**, a sociologist teaching at the University of Bielefeld (Germany) and guest researcher at the CESDIP, is conducting research on social problems and on exiting from deviant careers. The present text reflects on the effects of drug-related policies on mortality among drug users.*

Deaths caused by drug use are viewed as one of the most relevant indicators for evaluating the extent and seriousness of this social problem ; this indicator also serves as a criterion for the evaluation of national drug policies, as well as for the establishment of international comparisons.

1. Selectivity of administrative statistics

The first question pertains to the definition of death caused by drug use. France applies a very restrictive definition : only cases of "overdose" in the strict sense of the term, are counted, along with accidents linked to the administration of the substance, reported by the police and *gendarmerie* services : that is, 465 deaths in 1995. In Germany, on the other hand, as in Switzerland, a broader definition is used, including deaths subsequent to the prolonged use of drugs, and suicides and accidents linked to the drug user's lifestyle. In the Netherlands, a definition similar to that applied in France prevails, with the exception of Amsterdam, where the reference definition is similar to that in use in Germany. The possibilities of international comparison are limited, then : firstly, there is no one uniform way of counting, and secondly, in many countries counts are done by several different agencies.

Other problems arise, even when a uniform definition exists : there is no set measurement of the concentration of a drug in the body, by which to define an overdose. The lethal dose varies with tolerance of the drug, health status and the drug combination absorbed. A dose that is easily tolerated by a regular user may be lethal following a period of abstinence. Some studies based on the analysis of drug concentrations found in the syringes of victims even come to the conclusion that there is no such thing as an "overdose", but rather, that deaths are caused by an allergic reaction to impurities in the injection.

In practice, recording of a death depends on how the body was discovered, which may be quite variable. Actually, listing of a death as being caused by drug use depends on two elements : first, the conditions presiding over the discovery, and secondly, what is known about the deceased person. If a syringe, spoon, ascorbic acid or other is found near the body, if there are marks of recent injections, or if other people present are known to be drug users, the death will probably be registered as due to drug use. There is of course the possibility that some third party may have eliminated all signs of drug-taking, to ward off any further investigation.

The death must be attested by a physician, who assesses the cause, without thorough examination, and delivers a death certificate. In France, death certificates are collected and centralized by the INSERM (National Institute for Health and Medical Research). This mode of calculation leads to an underestimation of the frequency of overdoses : a number of deaths which will ultimately be attributed to that cause, following investigation, are recorded under the heading "cause unknown".

The police is always involved in cases where the possibility of a crime cannot be excluded. In this case, the prosecutor's office may order an autopsy. This will not affect the INSERM or police statistics, since the initial listings are never rectified. In France, then, there are two or even three ways of recording mortality connected with drug use : first, death certificates recorded with the INSERM in cases where a physician has testified that the death was caused by an overdose, and where the police is not involved ; these cases are therefore unknown to the OCRTIS (the Central Bureau for the Repression of the Illegal Trafficking of Drugs). Secondly, there are cases recorded by the INSERM under the heading "cause unknown", but for which the police was called in, and which therefore are listed in the OCRTIS statistics. The latter cases are of two sorts : those for which an autopsy was ordered, and which are also mentioned in the statistics of the medico-legal institute, and the others, with no autopsy, which are not listed there, but are only found in the OCRTIS figures.

According to an INSERM study[1] of deaths by overdose in 1992, another 58 deaths detected by the INSERM and unknown to the OCRTIS should be added to the 499 deaths recorded by the OCRTIS, for a total of 557 deaths. On the basis of the INSERM data, then, the OCRTIS figures should be corrected by 12 %. If the other 195 cases for which drug use or drug abuse was mentioned by the INSERM as a contributory cause of death, we arrive at 752 deaths in 1992, representing a 51 % correction of the OCRTIS figures. When the 967 deaths caused by AIDS in known drug users are added, we come to the figure of 1,719 deaths in which drug use probably played a major role. Application of the broadest definition suggested by the German police, entailing inclusion of cases in which drug use is not interpreted as the direct cause, but as one element of an at-risk lifestyle, would considerably increase the number of deaths in this category.

An estimation of the number of drug-related deaths is therefore necessarily linked to the construction of the defining criteria : it can never be judged right or wrong, but can only be assessed on the basis of its usefulness. The concern with counting deaths caused by drug use is part of a political preoccupation tending to point up the number of deaths as symbolic of the danger of using illegal drugs. This preoccupation is reflected in the choice of the statistical categories used.

The utility of counting and of operating an epidemiological analysis of mortality in drug users cannot be reduced to this political function, of course. There is reason to suppose that drug users have a lifestyle conducive to premature death connected to quite varied risks including overdoses, accidents, associated diseases, AIDS and suicide. The development of a policy aimed at combating or reducing these risks rests on accurate understanding of their nature and interrelations, which in turn would lead to the broadest definition of death linked to the use of drugs.

2. Can the number of deaths among drug users be used to assess drug-related policies ?

The annual publication of official figures for deaths caused by drug use always yields an opportunity to point to how

successful some policy was, and/or to request more means, regardless of whether the figures rose or fell in comparison with the previous year.
Comparison of drug-related policies in different countries often rests on the hypothesis that countries with ambitious substitution and harm-reduction programs, and which are most tolerant of drug users, have a lower mortality rate than countries with a more repressive policy.
At first glance this hypothesis seems to have been impressively validated in the comparison of the Netherlands and Germany. In 1989, for instance, there were 0.3 deaths due to drug use per 100,000 inhabitants in the Netherlands, as opposed to 1.6 in Germany. Conversely, the figures for Switzerland, which like the Netherlands has a liberal policy, seem to contradict this hypothesis (4.3 per 100,000 inhabitants).
A comparison at this level raises several methodological problems, however. First, deaths are not recorded in a uniform manner. But even if the official figures were comparable, the reference to the total population is not very meaningful, since the proportion of drug users within different countries varies considerably. It would be more appropriate to refer to the number of drug users, a given which can only be estimated very imprecisely.
For instance, an estimation of 100,000 drug users in France would result in a mortality rate of 4 per thousand for 1991, with 411 deaths. Comparable figures for the Netherlands would be about 2, for Italy 6, for Spain 5, for Denmark 19, for Austria 13 and for Switzerland approximately 7 (see Table I).

Table 1 : Mortality rate based on estimated numbers of consumers of hard drugs

	drug users	*deaths*	*mortality rate (per thousand)*
A	6 - 7 000	86 (1988)	12 - 14
CH	28 - 56 000	403 (1991)	7 - 14
DK	6 - 10 000	188 (1991)	19 - 31
D	50 - 100 000	2 125 (1991)	21 - 43
E	100 000	579 (1991)	6
F	60 - 150 000	411 (1991)	3 - 7
I	100 - 200 000	1 382 (1991)	7 - 14
NL	20 - 24 000	42 (1991)	1 - 2

Sources : Council of Europe, *Multi-city study : Drug misuse trends in thirteen European cities*, written on behalf of the experts from the thirteen cities, by Richard Hartnoll, Council of Europe Press, 1994.
WHO, Regional Office for Europe, *European Summary on Drug Abuse*, First Report (1985-1990), Copenhagen, 1992.

However, if the above figure of 752 deaths by overdose in 1992 is accepted, the mortality rate in France is somewhere between 8 and 13, depending on the number of drug users considered. Furthermore, the rate for the Netherlands would be lower, if we consider the fact that only 30 to 40 % of the deaths by overdose in that country are Dutch, with the others coming mostly from Germany and other European countries, whose citizens are refused access to the Dutch health system.
Drug policies and health systems are not the only factors involved. Mortality is also influenced by social and cultural (including subcultural) differences and by the structure of the drug market. Any univocal explanation should therefore be avoided.
One of these differences pertains to the way heroin is taken : injection or inhalation. The latter practice is extremely popular in England and the Netherlands. If only the approximately 40 % of drug users who take injections of heroin are considered, the Netherlands still have a much lower rate than France, Germany, Austria or Denmark, with only 5 per thousand (only 2 of whom are Dutch).
The quality and comparability of data are insufficient at this point to establish the existence of a link between a low mortality rate and a liberal policy.
Research on this question should preferably start with an analysis of the risks tied to the use of illegal drugs.

3. The risks connected with drug use

3.1 - Intermittent use and backsliding
The risk of an accidental overdose increases when tolerance declines, owing to periods of abstinence either because of a stay in prison or in a therapeutic establishment, or following detoxication for other reasons. Various German studies ascribe about one fourth of overdoses to this phenomenon : the victims had not taken any drug for several weeks before their death. The number of recent shots seen during autopsies shows that the first instance of drug use is rarely fatal, because use is resumed cautiously following a period of abstinence. The risk arises when doses are increased too rapidly following resumption.
Periods of abstinence are of course only one type of fluctuation in drug use. Tolerance is also affected when consumption drops either for financial reasons or out of personal choice, or again because of a temporary change in the substance or medication taken. The same is true if use is not regular, and the person consequently is less experienced in judging the quality of the drug available on the market. The extent of this risk seems to have been considerably underestimated until now : one German study has shown that irregular customers plus abstinents account for two thirds of overdoses.
3.2 - Variations in purity
One would assume that variations in the purity of the heroin on the black market are another major factor affecting overdoses. But attempts to corroborate this hypothesis are still in their infancy. For Hamburg, for instance, existing studies show a parallel evolution in the purity of heroin and the number of deaths. In particular, they show that a rapid rise in purity following a phase of poor-quality heroin, owing to police seizures of large amounts of the drug, for example, results in a rapid increase in mortality. This is also reflected in the blood concentration of morphine found by autopsies. On the whole, however, the study of relations between the purity of street-procured heroin and mortality, and therefore the link between the latter and police confiscation of the drug, has never shown that link to be more than simply plausible. Several studies conducted on the subject in the USA point in the same direction : it is less the degree of purity of the heroin that is decisive, than the extent of fluctuations in its quality, which may be anywhere in a range from 5 % to 70 %.
Nor have any studies assessed the risk of mortality connected with the various sorts of impurities incorporated in the heroin sold on the black market.

3.3 - Multiple drug consumption
The occasional or systematic simultaneous consumption of different drugs and medications generates a further risk of death. Alcohol ranks first among the ingredients in these

mixtures : it is identified in nearly half of autopsy findings. However, little is known about the influence of alcohol consumption on drug-induced deaths. Alcohol may act in two ways : either by causing the person to pay less attention to the risks inherent in drug use, or by increasing its toxic effects. Furthermore, surrogate and complementary medications play a major role in the risk of death. The concentration of each active substance found at autopsies is rarely in the critical zone ; whence it may be deduced that it was the combination that was lethal.

There are great regional differences in the combined use of medications, owing to differences in physicians' prescribing practices. The most widespread and most dangerous, aside from substitution products such as codeine and dihydrocodeine, are benzodiazepine-based tranquillisers and barbiturates, found in about 10 to 20 % of cases. Conversely, methadone, although often mentioned, is rarely a cause of death.

3.4 - Circumstances surrounding use

Most deaths of drug users occur in private homes. There are great regional differences, depending on housing conditions for drug users and on the dealing area of the "drug scene". The place where drugs are consumed seems to be essential for survival : this is shown by a comparison of places where deaths were discovered and those of emergency room cases. People who survived an overdose were most often found in public places, where greater public control is exerted. Medical care may then be delivered more rapidly, and resuscitation is consequently more effective. The individuals involved owe their lives to the public, then. In this sense, use of drugs in private places - and especially when alone - creates an additional risk, since there is a lesser probability of rescue.

Various studies have found a link between the tendency to privatize drug use and police interventions on the public drug "scene". To flee police harassment in public places, users retire to private homes where they run a greater risk of not being discovered in time in case of an emergency.

3.5 - Psychological and social situation prior to death

There have been few studies, so far, of the biography and career of drug users in connection with the fatal risks incurred. This question is usually studied by comparing those who "got off the hook" with those who died. Findings from international studies are quite variable : there is not even any consensus as to the existence of such biographical indicators of risk. To the contrary, lifestyle prior to death seems to be of the greatest importance : personal crises are an indicator of suicidal tendencies. Furthermore, good social relations are important, not only for discovery in time in case of an emergency, but also for reducing the risk of a suicide attempt.

The few studies of personal situations previous to death are strictly descriptive then, since, lacking a comparative group, it is difficult to estimate the importance of the different aspects correctly.

All the same, some paradoxical effects may be seen : users who run the greatest risk seem to be most integrated socially, employment-wise and in their social relations and housing. However, the higher risk connected with irregular drug use may account for this, especially in people who are not well integrated in the drug subculture. Visibly, the drug-related deceased do not necessarily belong in the usual junkie category.

To sum up, a look at empirical findings on deaths in drug users shows it to be clearly impossible to draw any simple conclusion as to the relations between drug-related deaths and drug policy. At the aggregate level of international comparison of basic policy orientations, only more or less plausible assertions are available, owing to methodological problems and the lack of valid epidemiological data. However, a tenuous link is beginning to emerge : countries with easy-access harm-reduction and substitution programs apparently have lower mortality rates than those with a more repressive policy.

The risk of death depends on several factors, directly or indirectly affected by policy. The major drug-related risk resides in the individual's inability to control the dose taken, because of the illegality of drugs and the consequent black market situation.

The cliché of the drug user found dead in a public toilet, so popular in the medias, rarely corresponds to reality. To the contrary, integration in a public subculture affords a degree of protection that reduces the risk since help may be called for more rapidly in case of an emergency. Even in such cases, however, this help often comes up against the fear of prosecution. Experiments with harm reduction and decriminalization programs conducted in various countries show that the risk drops when drugs may be consumed in places where immediate medical assistance may be offered, and where it is possible to check the dosage of drugs and to distribute them in a medically acceptable form.

Axel GROENEMEYER
(E-Mail : axel.groenemeyer@post.uni-bielefeld.de)

For further information, the reader is referred to :

GROENEMEYER Axel :
- Was wissen wir über den Drogentod ? Soziale Probleme, 1994, 1/2, 60-89.
- Drogenberatung und alltagsorientierte Sozialarbeit - Möglichkeiten und Folgen niedrigschwelliger Drogenar-beit am Beispiel der Drogenberatung Bielefeld, Reader zur niedrigschwelligen Drogenarbeit in NRW. Erfahrun-gen, Konzepte, Forschungen, Berlin, INDRO e.V., 1994, 39-145.

[1] F. Hatton, A. Michel, A. Le Toullec, 1994 : *Mortalité et toxicomanie en France*, 3rd international scientific conference on illicit drugs, 5 and 6 May, 1994 in Paris, Paris City Hall, p. 169-180.