SVENSKA CARNEGIE INSTITUTET

SVENSKA NARKOTIKAPOLISFÖRENINGEN • UTBILDAR & INFORMERAR • SNPF

This report gives an outline of the efforts and results over a hundred years as international bodies, national authorities and forensic experts have been trying to assess and compare hazards associated with various drugs under narcotics control. It is based on an extensive review of the literature conducted after the issue was raised in a drug case before the Swedish Supreme Court in 2011.

Jonas Hartelius, MBA, CPP, is a former Chair of the Board of Directors of the Swedish Carnegie Institute (SCI). He is also an Assistant Editor of the Editorial Board of the Swedish Narcotic Officers' Association (SNPF).

Jonas Hartelius

One hundred years of assessing hazards associated with narcotic drugs

ÅKESSONS TRYCKERIAKTIEBOLAG

ISBN 978-91-979983-5-2

9 789197 998352

One hundred years of assessing hazards associated with narcotic drugs

Jonas Hartelius

One hundred years of assessing hazards associated with narcotic drugs

SWEDISH CARNEGIE INSTITUTE
SWEDISH NARCOTIC OFFICERS' ASSOCIATION

CARNEGIE INTERNATIONAL REPORT SERIES 4
STOCKHOLM 2012

For Gráinne, who requested this translation.

This review has previously been published in the Swedish law journal *Svensk Juristtidning* (No. 5 – 6, 2012). The text has been translated by the author himself and edited for clarity. Major additions or explications are given within double square brackets [[...]].

Unless otherwise specified, in this text the term "narcotic drugs" refers to substances scheduled under the provisions of the Swedish Narcotic Drugs (Punishments) Act (SFS 1968:64).

www.carnegieinst.se • staff@carnegieinst.se
Address: Swedish Carnegie Institute, Box 16 302,
SE-103 26 Stockholm, Sweden
Tel +46-8-215288
Fax +46-8-211098
ISBN 978-91-979983-5-2
Date of final editing: 1 August 2012
Carnegie International Report Series (CIRS) 4
Layout: Peo Göthesson
Print: Åkessons Tryckeriaktiebolag i Emmaboda
Digital distribution: www.cirs.se.

Contents

Foreword

For many years the political, legal and scientific debate in Sweden regarding the foundations, forms and effects of drugs control has been a benchmark for international discourses. This was the case in 1988, when the Riksdag (Swedish Parliament) rewrote the Narcotic Drugs (Punishments) Act to criminalize the unlawful use ("abuse", "non-medical use") of narcotic drugs, and in 1993, when the Act was changed to empower the police to take urine tests as evidence to prove unlawful use.

The Swedish Carnegie Institute (SCI) and the Swedish Narcotic Officers' Association (SNPF) have both been deeply involved in the development of Swedish drug control policy and legislation. Through research, professional training and public information, both organisations have made contributions to the public discourse in the field of drug control, in recent years particularly in the monitoring and assessing of new drugs.

Mr. Jonas Hartelius has been active in the monitoring and assessing of new drugs for 30 years. In various capacities he has written reports to prosecutors and courts, lectured on intelligence systems and new classes of drugs and also appeared as an expert witness in courts, including the Swedish Supreme Court. He is the author of the joint SCI-SNPF publication *Narkotika, dopningsmedel och hälsofarliga varor* ["Narcotic Drugs, Doping Agents and Goods Hazardous to Health"; Swedish, 11th edition, 2012]. It has a total print run of 385 000 copies, and it is widely used in the training of police and customs officers, treatment staff and other professionals. It has been published in English, Estonian, Icelandic and Russian.

In this separate review, Mr. Hartelius gives a detailed summary of how new drugs have been assessed with respect to their innate properties to cause hazards to individuals and society. He describes how science and jurisprudence have developed new criteria and gained new knowledge since the first International Opium Convention in 1912. Although the overview was originally written for Swedish readers, its discourse may be of interest also to an international public.

The text has previously been published in the Swedish law journal *Svensk Juristtidning* and translated by the author himself.

The publishers hope that this international publication of the text will help create an understanding of the problems encountered and the criteria to be used when assessing the threats to public health and public order caused by the ever increasing supply of new dependence-producing substances.

Stockholm and Gothenburg in August 2012

Peder Langenskiöld
Executive Director
Swedish Carnegie Institute
(SCI)

Mika Jörnelius
Chairman
Swedish Narcotic Officers'
Association (SNPF)

One hundred years of assessing hazards associated with narcotic drugs

During a hearing in May 2011 before the Swedish Supreme Court of a drug case (NJA 2011 p. 357), the issue was raised of what should be considered a "scientific" assessment of the hazards associated with a particular narcotic drug [[under Swedish drug control]]. The first assessments can be traced back one hundred years, but the criteria and the forms for making assessments have changed. The author summarizes parts of the scientific and forensic basis for assessments of hazards of particular narcotic drugs and presents some proposals to Government and Parliament (the Riksdag) in order to increase the predictability of assessments of hazards.

Introduction

On 17th and 18th of May 2011, the Swedish Supreme Court conducted the trial in a drug case (NJA 2011 p. 357), where a central issue was how mephedrone was to be assessed with respect to its hazards. Mephedrone was classified as a narcotic drug in Sweden on the 25th of May 2009 (SFS 2009:316).

At the hearing, several participants brought up a recent study from the British medical journal *The Lancet* in 2010 by Nutt et al.[1] This study was stated by some to be the only "scientific" study assessing the hazards of a number of drugs (most of them narcotic drugs according to Swedish legislation).

The question of scientific or other assessments of the hazards of a mind-altering substance occurs in (at least) three legal contexts:

1. Scheduling the substance as a narcotic drug (or within any other control group);
2. Permitting the substance for medical use; and
3. Sentencing for a crime involving the unlawful handling of a particular amount of the substance.

For all three types of decisions, scientific findings or clinical, social and police experiences play a significant role. The criteria applied may, however, differ between the situations.

Here, a brief summary will be made of the historical development over one hundred years of the scientific and forensic bases for assessments of hazards related to specific drugs, i.e. during the period when narcotic drugs have been subjected to international control.

Early international drug conventions

The first drug convention was the 1912 International Opium Convention. It only regulated raw opium, prepared opium, medicinal opium, morphine, cocaine and heroin (called diacetylmorphine in the convention) and their salts. As the convention mainly dealt with international trade, especially involving China, the statutes on punishments were not binding, but they made it possible to criminalize e.g. the unauthorized possession of controlled substances. No difference was made between the substances in respect to their levels of hazards. The factual basis was scientifically uncomplicated, and it was not mentioned in the text of the convention. Scientific research was, however, given a future role in Article 14 (d). There, the signatory states were obliged to extend the control also to:

> "all new derivatives of morphine, of cocaine, or of their respective salts, and to every other alkaloid of opium, which may be shown by scientific research, generally recognized, to be liable to similar abuse and productive of like ill-effects."

Here, two early criteria were expressed for assessing hazards; today they would be labelled abuse potential or dependence potential, and range of harmful effects, respectively. The criteria were, however, only to be applied to the control of new substances.

The regulation of opium took place against a background of more than one hundred years of extensive drug abuse in China. The experiences of the harmful effects by opium upon individual and society were widely known, and there was no need to document them through particular scientific reports.[2] Interestingly enough, heroin was also regulated in the 1912 Convention. This substance

was introduced as a medical drug as late as in 1898. Its risks of abuse and drug addiction had been documented in as short a period as a decade.[3]

To summarize, one could say that the 1912 Convention put the specified substances under control on the basis of "science and proven experience" according to contemporaneous knowledge. The convention assigned a future role to scientific research in the monitoring of substances, which could turn out to be so dangerous that they should be placed under international control.

A second International Opium Convention was enacted in 1925 and regulated also cannabis. The convention (Art. 10) permitted the control of new substances after investigation and recommendation by the International Office for Public Hygiene (Office International d'Hygiène Publique) in Paris. (The Office was a forerunner to the World Health Organization (WHO). It was dissolved in 1946, and its epidemiological function was transferred to WHO.) The criteria for scheduling new drugs were that a drug was "liable to similar abuse and productive of similar ill-effects" as the drugs listed in the convention. In practice, the criteria for hazards were the same as in the 1912 Convention.

In the 1931 Convention for Limiting the Manufacture and Regulating the Distribution of Narcotic Drugs, heroin (called diacetylmorphine) was put under specially severe restrictions (Art. 10). Export of heroin was in principle prohibited, but it could be permitted to countries not having a heroin production of their own. Article 11 regulated the procedure for scheduling phenantrene alkaloids from opium or ecgonine alkaloids from coca leaves as narcotic drugs according to the convention. The criteria applied were the risk of addiction or the risk that a substance could be changed into a drug with addiction potential. The inquiry was to be done by the International Office for Public Hygiene.

An analysis, which by the standards of its days was quite extensive, devoted to the particular assessment of heroin was published in 1947 by Mr. Bertil A. Renborg, a Swedish diplomat. In the years 1939–1946, he was Chief of Section of the Drug Control Service of the League of Nations and in practice the highest public servant in

the world for international control of narcotic drugs. In his large survey, Renborg noted that the convention set a "specially strict regime" for heroin. The regime was based on the consideration that heroin was "generally regarded as the most dangerous of the opium derivatives", as it was seen as extremely toxic. Renborg described the issue of limitation and regulation as requiring considerations of both the "degree of danger presented by a particular drug" and "the extent to which the drug is used by the medical profession". That discussion is entertained in Sweden when a substance is listed in narcotic drug schedule I (normally not permitted in medical care) or II–V (permitted in medical care with varying levels of administrative control). When drafting the 1931 convention, the parties discussed completely prohibiting heroin for medical purposes, due to its high risks of causing addiction. In the final document, the parties wrote that heroin has "a highly dangerous character" and that it was possible "in most, if not all, cases of replacing it by other drugs of a less dangerous character". There was, however, no total prohibition in the convention against medical use of heroin.[4]

The particular treatment of heroin in the 1931 Convention can be said to be a simple, but scientifically based emphasis of the dangerousness of this preparation in comparison to other substances which at that time were under control as narcotic drugs.

The United Nations Single Convention on Narcotic Drugs (1961)

Responsibility for international drug control was transferred to the United Nations in 1946. In order to create a comprehensive legal framework, all regulations were ultimately transferred to the U.N. Single Convention on Narcotic Drugs (1961). From the 1961 Convention onwards there is a scientifically based forensic assessment that certain narcotic drugs are to be regarded as particularly dangerous. Such drugs are said to have "particularly dangerous properties" (Art. 2, para. 5 (a)), and they are to be subjected to special measures by the signatory parties in order to protect public health etc. The substances are listed in Schedule IV. The listing there of heroin was a continuation of the particular treatment in the 1931 Convention. Other substances originally listed in the 1961 Schedule

IV were cannabis and cannabis resin, desomorphine, heroin and ketobemidone. Later, also acetorphine, etorphine and a number of fentanyls were added.[5]

The Single Convention confirms and reinforces the principle that certain scheduled substances are to be regarded as particularly dangerous and therefore to be subjected to special control measures. The convention also provides a framework based on international law for assigning scientific documentation a role in the assessment of individual substances when deciding the level of governmental control.

Swedish narcotic drug schedules in the post-war period

In Sweden, an increasing abuse of synthetic central nervous system stimulants (amphetamine etc.) emerged in the late 1940s. The abuse caused the authorities to subject this type of drugs to formal control as narcotic drugs (1958–1959). The decision was taken on the basis of an increasing documentation of tangible dependence development, severe emaciation and psychoses following long-term abuse.

Swedish legislation on narcotic drugs was thoroughly modernized in 1962 with the enactment of a new Narcotics Ordinance (Narkotikaförordning; SFS 1962:704). In those days, listings of narcotic drugs were published in the schedules of the Swedish National Board of Health (Medicinalstyrelsen). Today, the issuing of Narcotic Drugs Schedules rests with the Swedish National Medical Products Agency (Läkemedelsverket). The most recent consolidated issue is the LVFS 2011:10. It divides the substances into Schedules (I–V) as follows:

"• Schedule I includes substances, plant material and fungi, which normally do not have any medical use.
- Schedules II–IV include substances, plant material and fungi with medical use.
- Schedule V includes certain nationally scheduled narcotic drugs where there is no requirement of a permit for each separate instance of importation or exportation according to 4 section of the Ordinance (SFS 1992:1554) on the control of narcotic drugs."

Grounds for the differentiation are e.g. the available clinical and scientific experience of risks and the medical usefulness of each preparation. Substances which are seen as having too high risks in comparison to their use in the medical system are placed in Schedule I. If new scientific experience calls for a new assessment, a substance can be re-scheduled. This was done in 2001 with flunitrazepam, which was transferred from Schedule IV to Schedule II (LVFS 2001:4). In the autumn of 2011 some preparations containing Δ-9-tetrahydrocannabinol were re-scheduled from Schedule I to Schedule II in order to enable a registration of Sativex® as a medical preparation against pain associated with multiple sclerosis. (LVFS 2011:10)

Although the criteria for the listing on various schedules are different from the subcriteria used in the Narcotic Drugs (Punishments) Act, the differentiation done by the Medical Products Agency constitutes an assessment of individual substances with respect to their dangerousness. A substance which is considered to be too dangerous for clinical use will not be permitted in medical practice.

The Swedish Mental Health Act Committee (1964)

The Swedish Mental Health Act Committee (Sinnessjuklagstiftningskommittén) with its final set of members for the years 1957 – 1964 worked on a full revision of the legislation related to the treatment of the mentally ill and certain other groups, such as alcoholics and drug addicts. The committee was chaired by the Parliamentary Ombudsman (Justitieombudsman), Mr. T. A. Bexelius. One of its experts was the psychiatrist Dr. Curt Åmark, MD, Head of Division at the National Board of Health, and later Chief-Physician. He had presented a dissertation on alcoholism. At that time, drug addiction was a rare clinical phenomenon in Swedish psychiatry. In 1964, the committee in its final report made a summary of the then most important types of narcotic and other drugs and a ranking based on the risk for dependence. It should be noted that this was done at a time when the WHO was still making a distinction between "addiction" and "habituation". Both concepts were replaced in 1965 by "dependence".

"One can group the addiction-producing substances according to the risk of causing addiction. The highest risk occurs with morphine and certain substances closely related to morphine, e.g. heroin. Here, a common dose regimen with the intent of alleviating pain three times a day for a period of 2–3 weeks can lead to a marked addiction. Then, in consideration of risk, follow opium and certain so called opium alkaloids and synthetic substitution preparations for morphine (palfium, cliradon, ketogin [[active compound ketobemidone]], petidine etc.). Then the barbituric acid preparations follow, but here the risk has decreased so much that the ordinary dosage of 3–4 tablets per day of e.g. pentymal is harmless from the addiction point of view. Twice the therapeutic doses, however, seem to be sufficient to cause addiction. Next in order alcohol, cocaine, mariuhana [sic!] and mescaline follow, while the phenopromine preparations [e.g. amphetamine; J.H. remark] from the addiction point of view seem to offer relatively small risks. This does not prevent them from having serious effects as intoxicants."[6]

Later, the dependence risks of e.g. the phenopromine preparations would become considerably more thoroughly documented and more widely acknowledged. Even though the committee used only one criterion, the risk for developing drug addiction (dependence), to answer the implicit question about ranking the drugs on the basis of their dangerousness, the quoted passage points to a scientific effort to make a systematic assessment of the internal order of the substances with respect to hazards.

Swedish Government Bills to enact and reform the Narcotic Drugs (Punishments) Act (1968)

[[The penal provisions of the 1962 Swedish Narcotics Ordinance were moved to the new Narcotic Drugs (Punishments) Act, which entered force 1 April 1968.]] The Narcotic Drugs (Punishments) Act (SFS 1968:64) 3 section 2 paragraph states the following:

> "In judging whether an offence is grave, particular consideration shall be given to whether or not it has been part of large-scale or professional activities, has involved especially large quantities of narcotics [[narcotic drugs]] or has in any other way been of a particularly dangerous or unscrupulous nature. The judgment shall be based on a joint consideration of the circumstances in the particular case."

In a Government Bill [[1980]] to the Riksdag, which proposed a revision of the Narcotic Drugs (Punishments) Act, the Government Minister in charge noted the following:

> "In general, the intent [of the change in the Act] is that a higher degree of consideration than currently is to be attached to the dangerousness of the preparation and the [degree of] unscrupulousness that the perpetrator has shown by his handling of the narcotic drug. Examples of this are that the preparation is highly habituating, such as heroin, or hazardous to life through its composition […]"[7]

The dangerous properties of a specific narcotic drug thus becomes a [[legal]] criterion for determining if a crime involving narcotic drugs is to be considered grave [[gross]] according to the Narcotic Drugs (Punishments) Act. The criterion can then be developed with subcriteria for various types of dangerousness, such as the above-mentioned "highly habituating" or "hazardous to life through its composition".

The example of heroin given in the Government Bill was done against the background of the knowledge of this substance in those days. At that time, heroin had been known for more than half a century for its addicting (read: dependence-producing) properties. Its dangers can be said to have been notorious well before the drafting of the Government Bill.[8] In the early 20th Century, heroin came to be put under special control for medical prescriptions, and in practice it was totally banned in many countries, such as Sweden. USA enacted a total prohibition also for medical use in

1925. Internationally, unlawful handling of heroin has drawn more severe punishments than handling of many other internationally controlled narcotic drugs. The emphasis of the particular risks of heroin can be said to be an early but a low-discursive assessment of hazards, in relation to both administrative control of narcotic drugs and sentencing practice, based on results from science and proven experience of a specific substance.

The United Nations Convention on Psychotropic Substances (1971)
In order to enable international control of new types of mind-altering substances, which did not fit the criteria of the 1961 Single Convention, the United Nations in 1971 enacted a Convention on Psychotropic Substances. In practice, most new substances are regulated under the 1971 Convention, as its control procedure is easier to administer.

In order for new drugs to be classified as psychotropic substances according to the 1971 Convention (Art. 2, para. 4; "Schedules I, II, III or IV" refer to the schedules of the Convention specifying the substances under control) and subsequently to be scheduled as narcotic drugs in Sweden [[and other countries adhering to the convention]] they must be drugs which have

> "a) […] the capacity to produce
> i) (1) A state of dependence, and
> (2) Central nervous system stimulation or depression, resulting in hallucinations or disturbances in motor function or thinking or behaviour or perception or mood, or
> ii) Similar abuse and similar ill effects as a substance in Schedule I, II, III or IV […]"[9]

When put under control, a new substance is listed in one of the Schedules I–IV. The substances in Schedule I are subjected to particular control measures (Art. 7). Thus, they are permitted only for a very limited medical use. This can be seen as a way of expressing that they are being regarded as particularly dangerous. Substances in this schedule are e.g. LSD and mescaline.

Supporting documentation for scheduling a drug or a change of the schedule where the substance is listed may be presented by a party (i.e. a Government of a country adhering to the convention) or the World Health Organization (WHO). To some extent, WHO is a successor to the International Office for Public Hygiene of the League of Nations.

The conventions provide WHO with a basic international law mandate to make a scientifically founded assessment of the hazards of narcotic drugs and similar substances. A substance, which for many years has been in the focus of an inquiry by the WHO is kath *(Catha edulis)*; here it seems not to have been possible to reach an international agreement.

Irwin (1971) and Casarett (1975)

Two extensive attempts were done in the 1970s to create a ranking of narcotic drugs or other intoxicants in relation to their hazards: i.e. Irwin[10] and Casarett[11], respectively.

Irwin in 1971 presented a review, which was quite extensive by contemporaneous standards, where he listed nine groups of substances, from volatile solvents to hallucinogens. Some of the substances were not at that time and are still not today controlled as narcotic drugs, among them alcohol, solvents and tobacco. After having made his review, Irwin (p. 12) noted that

> "An assessment by experts of the relative hazard potentials of these drugs [= those reviewed in the article, J.H. remark] has never been undertaken."

Irwin doubted that experts would uniformly agree upon any rank ordering of the drugs, on any decision-making criteria or on any priorities established for doing so. Nevertheless, he made an attempt towards such an assessment, based on eight criteria, from the risk of repetitive or compulsive use (mainly corresponding to dependence risk) to the risk of accidental death from overdose (mainly corresponding to toxicity).

Irwin (p. 13) presented two lists, one based on the intrinsic hazard

potential of the substances to the individual and one based on their intrinsic hazard potential to society. In the latter he also presented the ranking done by law enforcement officials at a summer course on drug problems (22 participants).

Irwin's table 1: intrinsic hazard potential to the individual (only internal ranking; here the columns with estimated values according to various criteria have been left out: most dangerous drugs listed at the top)

Glue sniffing
Methamphetamine
Alcohol
Cigarettes
Barbiturates
Heroin
LSD-25
Marihuana [Cannabis]

Irwin's table 2: intrinsic hazard potential to society, most dangerous at the top

Substance	Irwin (% ratio)	Police officers' assessment (% rank)
Alcohol	100	11
Methamphetamine	90	85
Barbiturates	70	26
Heroin	40	100
Marihuana [Cannabis]	20	16
LSD-25	15	56
Glue sniffing	10	34
Cigarettes	5	2

An account of Irwin was given in 1975 by Casarett, who nevertheless noted that Irwin's ranking would have to be modified against the background of new evidence, e.g. experience from the then new substance para-methoxyamphetamine. Casarett permitted herself to make her own ranking, based upon criteria of hazards such as the risk of losing control or consciousness (example: glue containing organic solvents), the risk of psychologic dependence (example: metamfetamin) and impairment of judgment (example: alcohol) and the risk of fatal overdoses (example: barbiturates). The ranking also contained some substances which were not under control as narcotic drugs, such as glue for sniffing or alcohol. The result was:

Casarett's listing (most dangerous listed at the top)

1. Glue (for sniffing)
2. Methamphetamine
3. Alcohol
4. Cigarette smoking
5. Barbiturates
6. Heroin
7. LSD and other hallucinogens
8. Marijuana (cannabis)

No more than Irwin did Casarett enter into any discussion about criteria for hazards used in the international conventions. Neither did any of them make an example of ketobemidone, in spite of the fact that this substance is being regarded as especially dangerous by the 1961 Convention.

Swedish Prosecution Authority (2005) and the Swedish Government Commission on Narcotic Drugs (2008)

In the early 2000s, it turned out that the [[Swedish]] sentencing practice and criteria for assessments of hazards associated with various narcotic drugs were difficult to survey. Some guidance was offered by "Sterzel"[12], a penal law handbook which over the years turned out to have major effects on sentencing practice through a detailed system with tables showing the connection between the possession of a certain amount of a specific narcotic drug and the corresponding standard sentence for unlawful possession. The handbook did, however, not give any guidance as to which criteria were to be applied for new narcotic drugs, for wich practice had not become settled.

In 2003 the Swedish Prosecution Authority (Åklagarmyndigheten), through its Development Centre Stockholm, initiated a study of new narcotic drugs and how they should be assessed with respect to their hazards. The initiative can be said to be an attempt to create more notorious images of the dangerousness of new narcotic drugs.

Scientific and administrative experts from i.a. the Medical Products Agency and the Swedish National Institute of Public Health participated. The report[13] was sent as a draft to a number of instances. After remarks by experts, the text was adjusted at some points.

The report gave a detailed review of the criteria which had been developed in pre-enactment reports and sentencing practice. In total, eleven criteria were presented:

1. Risk of producing dependence,
2. Toxicity,
3. Risk of physical illnesses or injuries,
4. Risk of mental illnesses or injuries,
5. Risk of social insufficiency,
6. Risk of effects that are difficult to predict or unpredictable,
7. Potential for strategic use in the perpetration of premeditated crime,

8. Risk of precipitating violence,
9. Causing effects in extremely small doses,
10. Severe abstinence reactions, and
11. Risk of self-transformation.

It was also noted that further criteria could be added with the emergence of new forms of abuse and new risks.

Narcotic drugs were grouped into six classes of dangerousness: F1 (lowest, e.g. kath) – F6 (highest, e.g. heroin). The framework was used to give recommendations for assessing a number of substances. As a basis for the assessment, it was noted that the first assessment should be if a substance presented a particularly marked dangerousness in a certain respect, such as having effects which are hard to predict. This can be justified on the grounds that it is sufficient that a substance produces a marked risk in one specific connection, even if it is less dangerous in other respects. Thus, certain explosives can be regarded as particularly dangerous, even though they are not very toxic.

The Swedish Government Commission on Narcotic Drugs (2006 – 2008) used a separate chapter of its final report *Bättre kontroll av missbruksmedel* ["Improved control of substances of abuse"; Swedish] to the assessment of hazards related to narcotic drugs. The report by the Swedish Prosecution Authority was quoted extensively with respect to criteria and assessments. The report was seen as

> "a very valuable tool for the criminal justice system when assessing the dangerousness of various substances".[14]

The remarks were, nevertheless, not entered into the Government Bill [Prop. 2010/2011:4], which was written on the basis of the report by the Swedish Government Commission on Narcotic Drugs.

A new edition of the memorandum was published in 2009, and so far six editions have been published. In the sixth edition of the memorandum (RättsPM 2011:10, December 2011) the F-scale has been deleted, as well as the assessments of the listed preparations according to this scale.

Nutt et al. (2010)

Nutt et al. in 2010, in the British medical journal *The Lancet*, presented an overview of the harms caused by a number of drugs including alcohol, tobacco, narcotic drugs and hormonal doping agents. The basis was an assessment by a group of experts according to a list of 16 harm criteria (such as drug-specific and drug-related mortality, damage (injuries), dependence, impairment of mental functioning, economic costs, crime etc.). The criteria were weighted in order to have varying impacts on the outcome. Twenty substances (or groups of substances, not necessarily under control as narcotic drugs or similar) were compared to each other in respect to their harms to the individual and to other people. When assessed for harms to the individual, the most harmful drugs were considered to be the following (the most harmful listed first): heroin, cocaine (crack form) and methamphetamine. When assessed for harms to other people than the individual taking the drug, the most harmful drugs were considered to be alcohol, heroin and cocaine (crack form). When both aspects were combined, alcohol was regarded as the most harmful drug, followed by heroin and cocaine (crack form). In relation to the accumulated harms, the order was (most harmful drug listed first): alcohol, heroin, cocaine (crack form), methamphetamine, cocaine, tobacco, amphetamine, cannabis, GHB, benzodiazepines, ketamine, methadone, mephedrone, butane (gas), kath, anabolic steroids, ecstasy (MDMA), buprenorphine and mushrooms (containing psilocybine).

The article made reference to some earlier studies in the period 2007–2010. No mention was made of Irwin (1971), of Casarett (1975), or of the international drug conventions. Thus the study seems history-less. Possibly, the only features which could be said to be new were the consensus procedure and also the large number of participants and the large number of drugs. Irwin, however, also used a similar procedure. The consensus procedure has the forensic disadvantage that it does not contain much of discourse – one cannot see which arguments or facts were taken to be decisive. The attempts of a numerical calculation can also produce a false sense of exactitude, and they are also sensitive to changes in the weighting

of the criteria.

Neither does the article by Nutt et al. (2010) give a complete review of all available substances, e.g. ketobemidone is lacking (this substance is marked as particularly dangerous in the 1961 Convention).

Swedish Supreme Court (2011)

The Swedish Supreme Court in the adjudication NJA 2011 p. 357 analyzed a number of questions related to sentencing practice and assessment of hazards in drug cases. The adjudication criticized a schematic application of tables for correlations between amounts and sentences in drug case such as the ones in "Borgeke/Sterzel"[15]. Remarking upon the issues of assessments of hazards, the Supreme Court noted i.a. that there were not

> "any unambiguous and generally accepted criteria for this [comparing the dangers of various preparations relative to aspects relevant to the assessment]".

The Swedish Supreme Court thereby swept aside some of the criteria used in its previous analyses, such as the potential for strategic use in carrying out premeditated crime. That potential was an important factor in the decision by the Supreme Court in 2003 to sharpen the assessment of the dangerousness of flunitrazepam (Rohypnol® etc.).

The Supreme Court stated that mephedrone should be assessed to be equally dangerous as amphetamine and markedly reduced the sentences for the accused. The article by Nutt et al. (2010) was expressly mentioned as an example of current documentation, but the Supreme Court noted that

> "there is no reason in this case to consider the inquiry and its results".

As the evidence presented at the trial of the Supreme Court was not considered to be sufficient to distinguish between the hazards of

mephedrone and other synthetic cathinones and those of amphetamine, then it will be very difficult for [[Swedish]] courts to make well-founded and lasting assessments of the hazards of a number of new narcotic drugs, where the accumulated documentation is weaker. The requirements for notoriety when assessing the hazards of new narcotic drugs can thus be said to have been set at a high level.

The assessment by the Supreme Court cannot be operationalized, i.e. it cannot be put into practical rules or criteria for deciding how to "do it right" in a future assessment of hazards, neither on the part of the experts nor on the part of the courts. The assessment does not contain any analysis of the requirements for fullness of the documentation or any comparison of established criteria for hazards with each other. What could have been a guiding and elegant clarification of criteria related to hazards and necessary documentation was replaced by a kaleidoscopic image. The kaleidoscopic feature is being reinforced by the decision of the Supreme Court that assessments of hazards of narcotic drugs are to be seen as an issue of evidence and not an issue of precedent. Prosecutors are to be able to present new evidence to propose a more serious assessment of a specific substance. Consequently, the same right, but with an opposing purpose, ought to be offered to defence counsels. With this adjudication, the Supreme Court has created a situation which likely will initiate periods of unknown duration where there may occur repetitious re-evaluations of sentencing practice, especially when new documentation emerges. The procedure can be difficult to grasp, and the predictability may suffer.

Ways forward

The brief summary above should be sufficient to show that during a century a large number of science-based attempts have been made to assess and rank the dangerousness of narcotic drugs and other drugs, and then, based on their documented hazards, separate them into classes or control groups. New systems have been launched with statements that they were the first "scientific" ones. No system has gained general acceptance, and many have been forgotten. The

experience may, however, be used to create a "Swedish" system, where Swedish experiences and assessments may set the criteria for hazards according to the Swedish Narcotic Drugs (Punishments) Act.

As the Government Bill [[1980]] leading to the revision of the Act requires courts to consider if a preparation has been particularly dangerous, the issue must be given a systematic treatment. This is particularly relevant for new narcotic drugs or narcotic drugs where there is a lack of clear sentencing practice.

Therefore, Government and Parliament (the Riksdag) should consider the following changes in the Narcotic Drugs (Punishments) Act and in the system for monitoring and scheduling of new substances as narcotic drugs.

1. The Narcotic Drugs (Punishments) Act should be amended by an addition (e.g. a new 3 para in the 3 section), where the most important criteria (or subcriteria) for assessing hazards are specified. Among them, the following should be the first to be considered for listing: toxicity, dependence risk, effects that are unpredictable or difficult to predict, effects in extremely small doses, risk of causing mental disturbances or diseases, risk of causing violence etc. An open criterion can be added to indicate that a substance has the capacity of otherwise causing danger. The criteria should be specified in the text of the Act, not in the pre-enactment report nor in the Government Bill.

2. Before a substance is being proposed for scheduling as a narcotic drug, the Government authority taking the initiative (the Swedish Medical Products Agency or the Swedish National Institute of Public Health) should hold public hearings or similar public meetings in order to collect material and comments. If there is an objection that scientists or lawyers consider a preparation to be less dangerous than alcohol (ethanol) – a statement which has been made during trials in respect to some newly scheduled narcotic drugs – that is an objection which should be presented in such a context, so that it can be considered before the Government (or an international body) makes a decision of scheduling the substance as a narcotic drug (or similar). When the scheduling enters legal force,

the Narcotic Drugs (Punishments) Act will be applicable and thus also the criteria (subcriteria) which have been set or developed for assessing hazards.

3. In connection with a proposal being submitted to Government for the scheduling of a substance as a narcotic drug, the Government authority submitting the proposal should put together an extensive report containing a first assessment of the new substance according to the criteria expressly listed in the Narcotic Drugs (Punishments) Act. The report should contain a review of the development over time of the knowledge about the substance, a direct comparison with narcotic drugs where the sentencing practice is well established, and a valuation of the quality of the documentation. When necessary, a note should be added that there may be reasons for a new assessment in the near future, such as the dependence mechanism at that time being subject to animal studies. A system with this kind of reports should increase the predictability and thus the legal security of the individual. For newly scheduled drugs backed only by a low level of documentation, an annual re-assessment may be called for.

4. The separation of narcotic drugs into groups based on their dangerousness should be kept but possibly be adjusted for some substances. A separation into groups enables direct comparisons between new and established substances, and the comparisons thus become more predictable.

Conclusion

During one hundred years of work with international drug conventions and the corresponding Swedish legislation, scientific background material has been used to assess the hazards of specific preparations and to separate these into special classes in relation to control, permitted medical use etc. Scientific documentation has been used also in the issuing of Swedish schedules for narcotic drugs to assess specific preparations. Against this background, the repeated statement during the trial in the Swedish Supreme Court [[2011]] that the study by Nutt et al. (2010) was the first "scientific" review appears to be historically unfounded.

Acknowledgments

Mrs. Gráinne Kenny requested this text to be translated and to be made internationally available. Mr. Per Claréus, editor of *Svensk Juristtidning*, permitted the translation and separate publication of this text. Professor Edgar Borgenhammar, Ms. Annika Planck and Mr. Patrik Teste provided editorial comments. I thank them, as well as the publishers, for making this publication possible.

Stockholm in August 2012
J.H.

Notes etc.

Notes (renumbered for the translation)

1. Nutt, David J, King, Leslie A, Phillips, Lawrence D (2010): Drug harms in the UK: a multicriteria decision analysis, The Lancet, 2010, Vol. 376, pp. 1558 – 1565.
2. Cf. La Motte, Ellen N (1920): *The Opium Monopoly*, New York: Macmillan.
3. See also Lichtenstein, Perry M (1914): Narcotic Addiction, New York Medical Journal, Vol. 100, Nov. 14, pp. 962 – 966.
4. Renborg, Bertil A. (1947): *International Drug Control*, Washington (DC): Carnegie Endowment for International Peace; particular rules for heroin, pp. 211 ff.
5. United Nations (1973): *Commentary on the Single Convention on Narcotic Drugs*, New York: United Nations. Current wording of the 1961 Convention with Schedules: http://www.unodc.org/pdf/convention_1961_en.pdf (2012-03-15).
6. *Mentalsjukvårdslag* ["[A New] Mental Health Act"; Swedish], SOU 1964:40, p. 127.
7. Prop. 1980/81:76, p. 212.
8. For a wide overview of notoriety in cases involving narcotic drugs, see Sjöstrand M (2011): Straffvärde och farlighet i mål med nya narkotikor — Notoritet och bevisning vid farlighets- och straffvärdebedömning av nya narkotiska preparat ["Punishment value and dangerousness in cases with new narcotic drugs –Notoriety and evidence in assessment of hazards and punishments related to new narcotic preparations"; Swedish], in: *Festskrift till Per Ole Träskman* ["Festschrift to Per Ole Träskman"; Swedish], Stockholm: Norstedts Juridik, pp. 418 – 427. That article was submitted for printing before the adjudication by the Swedish Supreme Court in NJA 2011 p. 357.
9. United Nations (1976): *Commentary on the Convention on Psychotropic Substances*, New York: United Nations, p. 45.
10. Irwin S (1971) Drugs of Abuse: An Introduction to Their Actions & Potential Hazards, J. Psychedel. Drugs, Vol. 3, No. 2, pp. 5 – 15; quotation on experts p. 12.

11. Casarett MG (1975): Social Poisons, pp. 627 – 654 in: LJ Casarett & Doull J (1975): *Toxicology — The Basic Science of Poisons*, New York: Macmillan; internal order p. 650.
12. Sterzel G (1998): *Studier rörande påföljdspraxis m.m* ["Studies related to sentencing practice etc."; Swedish], Stockholm: Jure.
13. Åklagarmyndigheten [Swedish Prosecution Autority] (2005): *Farlighetsbedömningar av narkotika* ["Judicial Evaluation of Hazards Associated with Narcotic Drugs"; Swedish], RättsPM 2005:17, Stockholm: Utvecklingscentrum Stockholm, mimeo; updated edition: *Narkotika – Farlighetsbedöming av narkotika-preparat – Rekommendationer för straffvärdebedömning* ["Narcotic Drugs – Judicial Evaluation of Hazards of Narcotic Preparations – Recommendations for sentencing"; Swedish], RättsPM 2009: 1, mimeo; most recent edition (6th) : *Narkotika – Preparatbeskrivning* ["Narcotic drugs – Description of substances"; Swedish], RättsPM 2011:10, mimeo.
14. *Bättre kontroll av missbruksmedel* ["Improved control of substances of abuse"; Swedish], SOU 2008:120, pp. 305 ff.
15. Borgeke M, Sterzel G (2009): *Studier rörande påföljdspraxis m.m.* ["Studies related to sentencing practice etc."; Swedish], 4th edition, Stockholm: Jure.

Swedish laws and statutes

SFS (Svensk Författningssamling) is the Swedish Code of Statutes issued by the Swedish Government. *LVFS* (Läkemedelsverkets föreskrifter) is the collection of Statutes issued by the Swedish Medical Products Agency (Läkemedelsverket). Swedish laws and statutes are indexed by the year of first issue and a running number of all laws and statutes issued that year by that source. The Swedish Narcotic Drugs (Punishments) Act was issued in 1968 as number 64 of that year, it is thus numbered SFS 1968:64.

NJA is the official series of summaries of precedents adjudicated by the Swedish Supreme Court. NJA is numbered by year and page of publication. *SOU* is the series of Swedish Government Official Reports. SOUs are numbered by year and running number of that year. *Prop*. (proposition) is a Government Bill to the Riksdag. They

are numbered by Parliamentary session (extending from autumn until late spring the following year) and a running number, such as 1980/81:76.

The Swedish Carnegie Institute (SCI)
The Swedish Carnegie Institute (SCI) is a private foundation devoted to promoting research on drug abuse, crime and major contemporary societal problems. www.carnegieinst.se

The Swedish Narcotic Officers Association (SNPF)
The Swedish Narcotic Officers Association (SNPF) is a non-governmental organization for police and customs officers, prosecutors, forensic specialists and other employees in the Swedish criminal justice system who are primarily involved in drug enforcement. www.snpf.org.

The Carnegie International Report Series (CIRS)
The Carnegie International Report Series (CIRS) is published by the Swedish Carnegie Institute for global dissemination of research reports and other works from research projects and contemporary analyses performed by the institute. The reports are available online in pdf at www.cirs.se.

Carnegie International Report Series (CIRS)

1. *Corruption as a threat to international security and conflict resolution – A systems approach to preventing and stopping corruption*, by Jonas Hartelius and Edgar Borgenhammar. (2011)
2. *Nils Bejerot and the Great Swedish Drug Epidemic*, by Jonas Hartelius. With a Foreword by Robert L. DuPont, MD. Published in co-operation with World Federation Against Drugs (WFAD). (2012)
3. *Monitoring and scheduling of new drugs in Sweden*, by Jonas Hartelius. Published in co-operation with the Swedish Narcotic Officers' Association (SNPF). (2012)
4. *One hundred years of assessing hazards associated with narcotic drugs*, by Jonas Hartelius. Published in co-operation with the Swedish Narcotic Officers' Association (SNPF). (2012)

Digital distribution: www.cirs.se