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New psychoactive substances and the Internet: current situations and issues

Which NPS circulate in France? How? Who uses them? What do we know about their dangerousness? How should we regulate them? This issue of Tendances draws a synthesis of the knowledge on these substances in France.

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The terms 'new psychoactive substances' (NPS) and 'new synthetic substances' appeared in 2008 to describe a range of diverse substances that mimic the effects of various illegal substances (ecstasy, amphetamines, cocaine, cannabis, etc.). Other terms used such as designer drugs, research chemicals (RC) and legal highs respectively allude to their imitative aspect, the fact that they are artificially synthesised and their legal status. Other labels that are deliberately misleading about their true intended use are also in widespread use (see the box on page 2).

The molecular structure of all these new psychoactive substances is close to that of the product they are "copying" without being identical. This circumvents the legislation, at least in the short term, because the new products are not immediately classified as narcotics as soon as they are developed.

With the number of such substances continuously growing and the number of users rising across Europe (including in France), the aim of this issue of Tendances is to review what is known about the subject, notably what is available, who are the users, how these products are being taken, health consequences and questions about the relevant French legislation.

Most recreational drugs were originally synthesised for medical purposes – structural modification of an existing active substance being a routine strategy in drug development.

The practice of self-testing new compounds is not new either. In 1928, the Californian chemist Gordon Alles himself took the amphetamine he had synthesised to investigate its effects. In the 1970's and 1980's, Alexander Shulgin [1] did the same thing with hallucinogenic substances like MeO-DIPT and 2C-T-X (as well as developing a simpler way of synthesising MDMA). In the 1980's, the American scientist John W. Huffman developed cannabinoid agonists while working on multiple sclerosis and the side effects of chemotherapy.

In France, the first NPS were reported in 2008, namely mephedrone and JWH-018. The general public began to become aware of NPS at the beginning of 2010 as a result of publicity about deaths supposed to be linked to mephedrone in Britain [2].

As of then, a concatenation of circumstances led to expansion of the market. The first was the development of synthetic pathways for a whole range of related compounds, some new some not.

Growth in use of the Internet (both as a commercial medium and one of exchange of information) was also an important factor: between 2002 and 2011, the number of European 15-24 year-olds who sought information about psychoactive substances online rose from 30% to 64% [3-4].

Finally, NPS benefited from disappointment with traditional narcotics (cocaine and heroin), because of both perceived deteriorating quality and periods of shortage, as happened with MDMA in 2009 when scarcity of the precursor used to produce it led dealers to substitute it with another product, mCPP, which they called ecstasy [5].

Scientific or commercial names: two ways to designate these substances

These substances are named in two ways. The scientific or pharmacological approach is based on the compound's chemical name and allows their classification according to molecular structure. The commercial approach selects seductive, memorable names which do not provide any information about the compound's structure of the substances sold.

Pharmacological approach

NPS belong to various different chemical families:

- Phenethylamines: these chemical structures are molecular variants of their core members,

namely MDMA, amphetamine and 2C-B. These are stimulants with empathogenic properties and more or less hallucinogenic activity.

■ Cathinones: the cathinone is a naturally-occurring psychoactive substance found in khat leaves which have traditionally been used by people in the Horn of Africa (Ethiopia, Somalia) for recreational purposes and to relieve anxiety. This family accounts for more than half of all stimulant NPS identified since 2008.

■ Piperazines: the main representatives are benzylpiperazine (BZP) and mCPP. The former is a stimulant resembling phenethylamine which was considered as a legal alternative to amphetamine from the early 2000's until its classification as a narcotic (in May 2008 in France).

■ Tryptamines: dimethyltryptamine (DMT), the main representative of this family, is a potent but short-acting, naturally-occurring hallucinogen found in ayahuasca, a plant traditionally used by shamans in Peru.

■ Synthetic cannabinoids: synthetic compounds that mimic the effects of cannabis (which explains why they are sometimes called cannabinoid agonists) by binding the same receptors as THC. These account for nearly half of all the already reported NPS. To date, 68 members have been identified in Europe, belonging to seven distinct sub-families.

■ … and some others: other psychoactive substances used for recreational purposes that do not belong to any of the above families are referred to orphan NPS. These include an analogue of ketamine (methoxetamine), psychoactive derivatives of cocaine like pFBT (4-fluorotropacocaine), dextrometorphane and opiate like ODT, which is related to tramadol (Ixprim®).

Commercial approach

NPS are often aggressively marketed under brand names with sophisticated packaging. A brand name does not guarantee the composition of the product, e.g. more than a dozen different compounds have been identified in products sold as NRG (NRG-1, 2 or 3) in Europe: pyrovalerone, naphyrone, MDPV, 4-FMC, D2PM, pentylone, butylone, flephedrone, 4-MEC, mephedrone, benzocaine and procaine. Similarly, herbal mixtures sold as Spice may contain various different synthetic cannabinoids. In addition, these commercial preparations often contain several associated molecules.

NPS, many different names

NPS is the abbreviation in French of "New Synthetic Products". This acronym is also used by the European Monitoring Centre for Drugs and Drug Addiction for describing New Psychoactive Substances. The two terminologies do not describe exactly the same things.
Indeed, the EMCDDA includes in its definition drugs that are already known but "newly consumed by users" and ordered via the Internet such as certain hallucinogenic plants. The French choice of definition relies on the observation that the use of plants bought on the Internet is not a new phenomenon in France and that their control does not bring up the same problems that are raised by the new synthetic products.
Many different names are used for these groups of substances and this can cause confusion among users who do not always know exactly what is behind a name.

Legal highs	All psychoactive compounds – including plant-derived products (Kratom, Salvia etc.) – that are not covered by the Law, whether or not they are synthetic or are designed to mimic the effects of a controlled substance. The term is inaccurate in that it suggests that these products are legal whereas some have no defined legal status and some are already classified as narcotics.
Smart drugs	This term is used for over-the-counter drugs or dietary supplements delivered with or without prescription. They are taken for their doping or psychoactive effects, e.g. modafinil, a stimulant used to treat narcolepsy.
Designer drugs	This term designates any new chemical compound created on the basis of the structure of an existing drug. First used by the pharmaceutical industry, the term has spread since the 1980's to include compounds based on already classified narcotics [6].
Research chemicals (RC)	This term is employed for compounds used in the development of medicinal products which have psychostimulatory properties. In practice, few NPS are used in scientific research but paradoxically, consumers often use the term RC. Its spread is probably related to its frequent mention on commercial websites and the fact that packaging is often labelled "Only for chemical research" in order to circumvent the legislation on consumer goods [6].
Bath salts *Fertiliser* *Incens*	Such terms are used on commercial websites or on packaging with a view to circumventing the legislation on consumer goods by dissimulating the product's true nature. They are labelled "Not for human consumption". Since 2008, toxicological tests have shown that the term "bath salts" is usually used for cathinones while that of "incense" tends to be used for synthetic cannabinoids.
Party pills, herbal highs, legal ecstasy , etc.	These terms do not apply to specific substances. Like the term "legal highs", they are used on commercial websites to designate recreational products presented as legal.

Source : TREND/SINTES/OFDT

Sales are driven by availability

One new NPS every month in France, one a week in Europe

Between 2008 and the end of 2012, 60 new substances were identified at least once in France (see List page 7). Since 2010, a new substance has been identified every month, the majority belonging to the families of synthetic cannabinoids (18 since 2008) and synthetic cathinones (15 since 2008).

In France, the toxicological identification of molecules is done through the activities of law enforcement agencies[1] and SINTES (National Detection System of Drugs and Toxic Substances) of the OFDT (French Monitoring Centre for Drugs and Drug Addiction).

At the European level, it is the Early Warning System (EWS) of the Monitoring Centre for Drugs and Drug Addiction (EMCDDA) that inventories newly identified substances. Since 1997, 200 new substances have been inventoried, more than half since 2008; in the last two years, the pace has stepped up to a rate of one a week [7].

1. Mainly seizures by the French Customs (analysed by the Joint Laboratories Department - SCL).

Customs seizures: the limits of the indicator

In France, almost all NPS seizures are made at airports by Customs officers because these substances are usually sent by postal freight; few seizures are made as a result of direct possession. These seizures give an incomplete picture of flow – a term preferred to "trafficking" since most NPS are not classified as narcotics and are not therefore counted in the seizure figures.

Between 2008 and 2011, the number of NPS seizures rose six-fold from 21 to 133. Currently, the great majority of these are synthetic cannabinoids followed by cathinones.

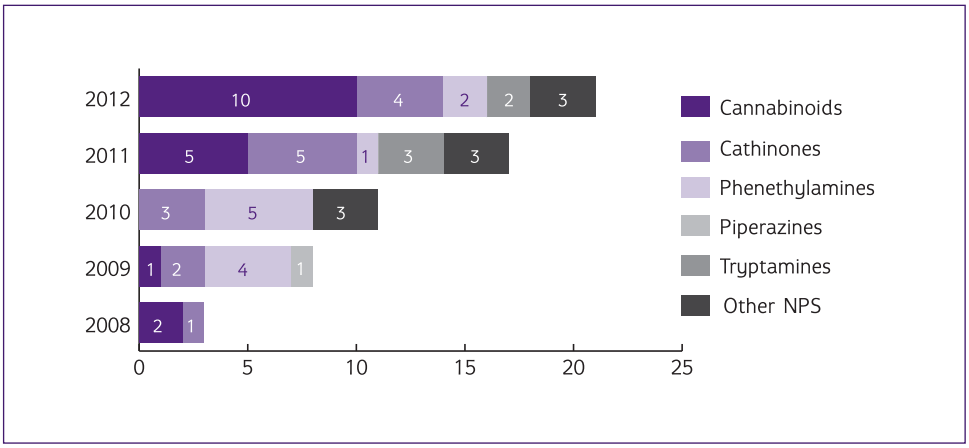
Most of these involve small packages weighing a few grams but packages containing mixed synthetic cannabinoids can weigh up to several dozen grams (source: SCL)[2].

Marked growth in the number of on-line shops

At the end of 2011, it was estimated that there were some thirty on-line shops in French language[3] selling NPS. At the European level, the EMCDDA regularly monitors[4] the number of on-line commercial sites in European languages that offer delivery anywhere in the European Union [8]. The number steadily increased from 2010 (n = 170) to January 2012 (n = 693) (the latest data).

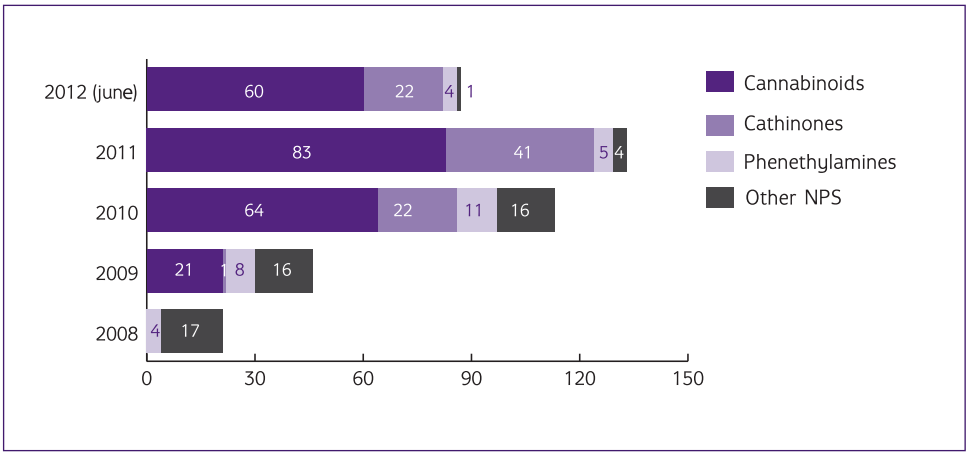
The three most available substances – Kratom, Salvia and hallucinogenic mushrooms [8]– are all natural ones. The fourth and the most available NPS is methoxetamine, followed by MDAI, 6-APB and various synthetic cathinones. A recent report from the United Kingdom showed that 19% of substances, subject to a ban, are still available for sale at on-line commercial sites[5].

Figure 1: Distribution of new substances by chemical family and year of identification in France, 2008-2012



Sources: SCL (French Customs), Toxlab, CEIP Caen (Caen Centre for evaluation and information on pharmacodependence), INPS (National Forensic Science Institute), SINTES/OFDT

Figure 2: Distribution of Custom seizures of NPS in postal mail by chemical family and year in France (2008- June 2012)



Sources : SCL (douanes), SINTES/OFDT

A traffic that is difficult to identify

Production and packaging

To date, most NPS identified by the EWS were imported from China and, to a lesser extent, India. According to the EMCDDA, only Poland and the Netherlands in the EU have reported domestic NPS production (and this only in small quantities). NPS enter Europe via one or another of the member states that have not yet banned them, from where they are disseminated to the other countries. Raw materials are blended and then possibly packaged in various presentations (tablets, capsules, oral solutions) in laboratories or crude transformation workareas.

Belgium, Ireland and especially the Netherlands[6] have reported seizures of dozens of kilograms of unclassified NPS, as has France (a seizure of 20 kilograms of 4-MEC in Lyon in January 2011).

The EMCDDA reports that the market is currently dominated by opportunists who profit from the Internet to promote and sell their products. However, Europol — the European agency responsible for fighting organised crime — reports that the traffic of NPS is sometimes associated with that of illegal substances suggesting that criminal organisations may be becoming interested in this market.

On-line sales

Most of the on-line shops are run by people based in the United Kingdom or the United States. The servers that host the websites are located elsewhere in countries where they can escape national regulations and these locations themselves are different from those from where the goods are sent. Two NPS collections organised by SINTES showed that merchandise ordered from websites hosted in Britain and Eastern Europe was dispatched from Spain.

2. SCL: *Service commun des laboratoires* (Joint Laboratories Department for Custom services).

3. Snapshot carried out by the OFDT.

4. Snapshot survey (conducted over one week). Internet searching is carried out on search engines for a series of substances. In 2012, for Spice, Kratom, Salvia, GBL, hallucinogenic mushrooms, mephedrone, 2-DPMP and desoxy-D2PM. The number of different sites among the search results are then counted.

5. Serious Organised Crime Agency, 2011.

6. Project Synergy, Europol

Availability in the "real world"

Apart from on-line sales, real shops – called head shops or smart shops – in certain countries sell recreational psychoactive products. NPS are also available at places like alternative dance-event settings (free and rave parties), hidden scenes of music festivals, etc. Initially sold under familiar names (cocaine, MDMA, etc.), these substances started being sold in France under their proper names in 2011 when "mephedrone" and "new synthetic drugs" started attracting media attention. Bearing witness to this is the fact that, while NPS were concerned in fewer than 5% of SINTES Veille[7] collections between 2008 and 2010, they accounted for 13% (40 out of 300) between 2011 and November 2012.

Commercial strategies

Vendors use sophisticated marketing strategies targeting different user profiles with specially designed websites and tailored product ranges.

Attractive pricing

Most NPS cost between 8 and 20 euros per gram on a sliding scale according to the quantity bought (which can amount to tens of kilograms). Another factor that influences price is the change in legal status: after mephedrone was banned throughout the EU in 2010, it could still be obtained (although at fewer websites) but its price went up [9].

In 2011, SINTES found that NPS sell-on prices (i.e. the "street price") were on average three times higher than on-line prices. For a moderate amount like one gram which costs 10 euros on-line, the dealer will charge 30 euros. Therefore, in terms of price, NPS are highly competitive with the illegal substances they mimic. Although their cost is similar to that of amphetamine [5] (about 15 euros per gram) [5], they are cheaper than either MDMA (62 euros per gram of powder) or cocaine (60 euros per gram) [10].

The relatively low price at the end of the chain of distribution is due to simple production processes coupled with the low cost and ready availability of precursors. Europol has ascertained that the high resale margin generates substantial profits.

Familiar presentations

NPS are mainly produced as powders, the most common presentation for illegal substances (apart from cannabis). However, as well as sophisticated packaging, dealers also play with presentation to make the product resemble the imitated substance. The simplest is converting the powder into tablets, often aimed at new MDMA users on the traditional market. Some processes are designed to make cannabinoids look like the original product, e.g. simple grass or plant material can be impregnated with cannabinoid powder to resemble herbal cannabis or the powder can be incorporated into a paste to look like cannabis resin.

Different sales outlets for different users

Since 2009, on-line commercial websites have multiplied and since 2011, the OFDT has been conducting an ethnographic study of this issue[8] which has led to the differentiation of four different types of websites targeting different users' profiles.

The informed market segment

The leading and oldest marketplace for NPS on the Internet is relatively readable and transparent. Websites in this category are serious-looking and present the chemical names of the compounds on sale. The products are often sold as the simple powder in plain plastic sachets without any special effort at presentation. These sites are aimed at people who know which compounds have which effects and are familiar with dosing.

The commercial segment

The second category is more commercial and includes more websites. These have seductive layouts, the products are sold in familiar forms (most commonly tablets or herbs) and the packaging is well designed with bright colours. The websites target - sometimes specifically - the young, especially for the sale of synthetic cannabinoids. Presentations can imply to the consumer that the seller has fixed composition and dosage so there is no need to worry about either. The user is not led to seek further information about chemical composition, effects, doses or possible toxicity. Moreover, these websites maintain doubt about the synthetic nature of the products offered, e.g. by presenting synthetic cannabinoids that look like herbal cannabis.

Compounds and combinations are sold under opaque product names, usually without any mention of the active substances contained. According to an OFDT survey conducted in 2011, three times more "commercially packaged" products were available than products labelled with the name of the active substance.

Finally, analyses of SINTES data and French Customs seizures show that "commercially packaged" products contain more different compounds than those sold in plain bags available from websites for informed users. In 2011, while 16 sachets obtained from "informed user" websites contained after analysis only the specified compound, "commercially packaged" products declaring the same name contained up to five different synthetic cannabinoids. It also emerged that the composition of products labelled with the same name sometimes varied over time.

The "Deep Web" segment

The third part of the market is located on websites that are not referenced by search engines. This market is not specific to NPS and also deals with fake student identity cards, books, medicinal products, illegal drugs, etc. Two such websites were shut down by the US Drug Enforcement Administration (DEA) between summer 2011 and March 2012. These websites use virtual money and access is controlled through the use of confidential addresses, the URLs of which are only communicated between individuals. Customers in this marginal marketplace constitute a network of consumers and tend to have enhanced computer skills and subscribe to an unusual mode of exchange.

Classified advertisements

Free-of-charge classified advertisements on general-public websites are used for all sorts of consumer products being sold by individuals. OFDT research has identified some thirty websites offering the most popular NPS [11]. Most of these provide a postal address in Africa (Nigeria, Cameroon and Benin) or sometimes in China. Some also offer illegal substances like heroin. In practice, few users seem to resort to this supply network. Special users' websites list physical and E-mail addresses known to be associated with swindle.

The communication strategy of vendors

In their promotion, vendors play on judicial uncertainty and ignorance about toxicity. However, some websites recently started posting warning messages about the "potency" of certain products and some will not send a product to a country in which it has been banned.

In many cases, social networks are used to promote products and websites. Finally, other websites – from simple blogs to institutional websites – have been hacked with articles or videos that appear objective but are in fact promoting on-line products.

Some commercial websites provide comprehensive services: consumers can open their own account and salesmen can be consulted through "phone" communication on-line. Some have federated to form a single entity which is presented as a syndicate subject to a charter that certifies product contents. The products themselves are distinguished by packaging with a logo that is difficult to forge.

7. Collection and chemical analysis of substances from users in order to monitor drugs in circulation.

8. Typology conducted on the basis of an ethnographic study yet to be published, 2013.

Recently, some websites have developed another way of protecting their activities by only allowing new customers access on the basis of answers to questions posed on-line.

Use is still limited in France but it is growing

While the NPS market has grown fast in certain countries like the United Kingdom[9], Ireland and Poland, in France use is still limited - in comparison to the illegal substances that they mimic - according to the drug monitoring usual tools.

Although no NPS was spontaneously mentioned by anyone interviewed in recent national surveys on drug use, recent TREND/SINTES observations on the field and via the Internet nevertheless reveal increased interest in such products. They are specifically searched for by users with diverse profiles although the breakdown is difficult to quantify.

■ The first profile corresponds to members of the gay party scene, traditional consumers of psychoactive substances especially in the sexual context. At ease with the Internet, they also obtain these substances during travels to foreign capitals. As reported on the TREND site in Paris[10], this is the group who "slam" (intravenous injection of substances - methamphetamine, cocaine, mephedrone, NRG-3 - for the purposes of "hard" sex).

■ The second profile is that of "connoisseurs", users familiar with the philosophy of Alexander Shulgin [1] who see themselves as pioneers with experimental drugs. Their approach aims at developing strategies to alter perception without risking either dependence or tolerance. Some of these form small groups to purchase substances on the Internet with one person acting for all. They then share experiences between themselves or in special forums in the form of "trip reports"[11]. These experienced users tend to consume at home and do not necessarily participate in the techno party scene.

■ Young adults who attend alternative techno party scene constitute a third profile. These are often regular users of psychotropic substances and may have already encountered NPS, possibly without being aware of it when these products were sold as the corresponding classic illegal substance.

■ Starting in 2012, overdose reports to the TREND network point to increased experimentation with these substances by younger, occasional users. These are apparently socially active young people who are in a position to buy the products on the Internet. Not open to warnings on harm reduction, this is the group at highest risk in terms of the potential adverse consequences of taking NPS.

To raise the consciousness of potential users about these substances and learn how exactly they are being used, the OFDT is participating in the European I-TREND project (see the box below)

The I-TREND Project: Internet Tools for Research in Europe on New Drugs

I-TREND is a European project in the framework of OFDT aimed at exploiting the Internet as a medium for monitoring recent trends in drug use and supply to complement trend monitoring on the field. It will run from April 2013 to March 2015.The OFDT's partners are CUNI University in the Czech Republic, LJMU in Britain, the TRIMBOS Institute in the Netherlands and SWPS University in Poland.

Cross-European collaboration corresponds to the international aspect of NPS trade. The approach depends on "netnographic" surveying of use together with the sharing of resources for substance analysis.

The goal is to provide the relevant public authorities with information on use of the main drugs sold on-line as well as their composition and associated risks.

Unevaluated health risks

The scientific literature contains very little information about the risks associated with human NPS use. The pharmacology of synthetic cannabinoids developed by the pharmaceutical industry has been established but this corresponds to only a small number of the products available[12]. People taking these substances are in some sense acting as their own guinea pigs.

However, case reports concerning NPS abuse are beginning to appear. The most commonly reported symptoms are sympathomimetic, including hyperthermia, tachycardia, sweating, mydriasis and malaise. Psychiatric manifestations include hallucinations, dissociation[13] and paranoia symptoms. A number of deaths in Europe linked with NPS use were notified to the EMCDDA in 2011 and 2012.

However, investigating problems associated with NPS use is difficult for a number of reasons. On admission, victims may say what they have taken if they are able to speak but the common disconnection between the name and the composition of a product – even more than with classic drugs – leads to doubt about what compound is involved. This makes diagnosis the more difficult especially in the absence of toxicological analysis identifying the substance.

This type of testing requires experience in the identification of narcotics as well as considerable resources. It's a time-consuming undertaking which goes beyond routine laboratory testing. In France, few laboratories are capable of identifying NPS – a small number of private laboratories as well as those associated with the police, Customs and SINTES.

In France, various structures could be used to collect data on problems due to NPS use. Cases of abuse, pharmacodependence and overdose may be referred by hospital services and general practitioners to special centres: CEIP[14] (Centre for Evaluation and Information on Pharmacodependence) and Poison Centres (CAP-TV). These two networks also collate and inventory requests for information about NPS but as yet, no summary of these data is published.

SINTES data show that, out of 60 reports made when NPS were collected from users since 2008, about one quarter relate to side effects from sweating to panic attacks. A number of TREND/SINTES cases point to the culpability of "cocktails" or polyuse: in poisoning victims, blood tests consistently reveal the presence of more than one substance and this makes it difficult to attribute any specific symptom to a given compound and therefore to disseminate appropriate harm reduction messages.

Three main points emerge from the information available:

■ the quantities required to obtain a given effect vary a great deal from one compound to another. This variability is superimposed on individual vulnerability which always makes taking any new drug risky;

■ the time-limit to onset of effects and their duration may differ from those of the imitated drug. If the lag is long or the effects short-lived, users may be tempted to step up the dosage or take more doses, to dangerous effect;

■ mixing drugs, especially with alcohol, clearly exacerbates the risk, all the more so since a significant number of these products already contain different active substances.

The long-term risks of NPS use are unknown, other than that of dependency which has already been documented, especially on mephedrone [12]. The link between methoxetamine (which supposedly has effects like those of ketamine) and urological or encephalic problems [13] is still controversial.

9. In the 2010-2011 British Crime Survey, it was found that 1.4% of 16-59 year-olds had consumed mephedrone in the course of the year, i.e. as many as had consumed ecstasy.

10. TREND Report, to be published.

11. A detailed, formalised description compiled by a user on the effects experienced after taking a psychoactive substance.

12. Notably studies on their affinity for Δ9-THC receptors.

13. Separation of mental and corporeal functions from normal consciousness.

14. Under the aegis of the ANSM (French National Agency of Medicine and Health Product Safety).

Peer-to-peer information

Although some associations have been distributing informative leaflets about NPS since 2012, the Internet has for long remained and still is the essential source of information for potential users, thereby compensating the input on prevention from traditional sources. These websites allow exchange of information and experiences between individuals, e.g. on the compound in question, the user's weight, the dose taken and the regularity of use. However, such sharing is banned for products with commercial names. Contributors are often able to stipulate thresholds or define high-risk modes of use and on-line conduct is governed by rules on mutual respect and comprehensible content.

The on-line NPS world on the Internet is less structured and diversified than those of other substances like hallucinogenic mushrooms and plants [11]. There is less information about NPS and it is less accessible, probably because of their relatively short history.

Another striking feature is the omnipresence of the American Erowid website which exclusively focuses on psychoactive products.

Controlling availability and use: a challenge for the authorities

Most NPS escape the law on psychotropic substances and at the same time are not authorized to sale legitimate consumer products since they do not fulfil the legal requirements for neither foods (proof of non-toxicity, labelling, etc.) nor medicinal drugs legislations.

Classification as narcotics

The rate at which these new substances appear shakes national narcotic classification procedures. A psychoactive substance is classified following risk assessment based on World Health Organisation criteria. Given the paucity of scientific data on NPS coupled with the time required for assessment (3-6 months in France), proposals to ban a product are usually based on structural analogy with an already-banned substance - sometimes relying on the precautionary principle. Thus, France - for the first time - recently adopted a "generic" classification system in which the ban applies to all substances belonging to a family rather than just one member. The Decree of 27 July 2012 from the Health Ministry (acting on ANSM recommendations) listed a series of chemical classes derived from cathinone banned on this basis. This list is to be revised to keep it up to date. Other EU countries have used a similar procedure to classify synthetic cannabinoids (certain members or as a class) as well as cathinone derivatives.

At the European level, the European Council has established a centralised classification procedure applicable in all EU countries [14]. This risk assessment procedure stipulates a series of steps involving the EMCDDA, the EWS network and Europol, and takes about one year. The last substances to be subject to this kind of assessment were BZP in 2007, mephedrone in 2010 and 4-MA in 2012.

Some countries like Germany and the Netherlands have resorted to temporary bans. This "emergency" procedure makes it possible to ban a new molecule at an early stage while risks associated with its use and trafficking are evaluated before it is decided whether to ban it definitively or not.

Other countries (Sweden, Norway, Slovakia, Poland and Luxembourg) have established a fast-track procedure that cuts down the time it takes to ban a product definitively (1-3 months) [12].

Limitations of the banning approach

The EMCDDA points up serious limitations to the approach of banning substances and criminalising their use by classifying them as narcotics. It warns about the risks of overloading legislative (classification), judicial (prosecution) and health care (toxicology) systems. In addition, the highly dynamic nature of the NPS phenomenon means that the main effect of banning a substance may only be to shift the problem elsewhere. In addition, the new substance synthesised in response to classification of another one could be more harmful. Furthermore, not reassessing classification measures for products that are not even in widespread use could compromise risk estimation [15]. Finally, other experts believe that the systematic banning of NPS for which there is no evidence of abuse or recreational use could turn the scientific community away from investigating their potential medical applications, e.g. in the treatment of depression or management of pain [16].

These worries have led certain administrations to develop alternative approaches such as prevention (Netherlands, United Kingdom) and cracking down on "open" distribution without criminalising use. These alternatives attempt to shift criminal responsibility off users and onto producers and vendors.

One approach involves consumer goods regulations [15], e.g. the United Kingdom, Poland and Italy have passed laws based on European legislation making it obligatory that products and foodstuffs intended for human consumption carry clear labels with specific information on how they should be used. A number of countries have adopted and implemented laws obliging producers and distributors to clearly mention any health risks on packaging (Poland [17] and Ireland in 2010, Romania in 2011 and Austria in 2012 [18]). Austria, Finland, the United Kingdom and the Netherlands have applied the EU definition of medicinal product to certain NPS which allows the national drug agency to regulate their importation, sale and distribution[15]. Outside of Europe, New Zealand represents a special case in that it recently decided to regulate the NPS industry: before selling a product, the vendor must evaluate its toxicity in animals and humans, and its packaging and advertising must present specific health information.

The means of action at Customs disposal

Customs have the power to check goods being imported. If laboratory testing of a product dispatched in the mail identifies a NPS, it cannot normally be immediately seized unless the substance in question has been classified as a narcotic. However, in certain circumstances, the Head Pharmacist delegated to the Customs Department can classify the NPS-containing product as a "functional drug" according to Article L.5111-1 of the Public Health Code: in the absence of Marketing Authorisation (MA) or an importation certificate, Customs can then register contravention of the regulations on medicinal products and seize the package.

In Europe, import bans have been used in Austria to control the entry of mixtures labelled as Spice (2009), and by the United Kingdom for mephedrone (2010). In April 2011, Sweden passed a new law to allow Customs and the police to seize an unclassified substance if use of the substance induces altered consciousness and might pose a health risk. Since this is framed in terms of health risk, possession does not constitute an offence.

15. http://www.emcdda.europa.eu/publications/drug-profiles/synthetic-cathinones#control. Website consulted the 14/06/2013.

NPS reported to the OFDT since 2008

PHENETHYLAMINES	CATHINONES	PIPERAZINES	TRYPTAMINES	CANNABINOIDS	OTHERS
MDMA*, **Amphetamine*** **Methamphetamine***	**Cathinone*, Pyrovalerone***	**BZP*** (2006 INPS)	**DMT, AMT***	**JWH-018*** (2008 SINTES)	**BROMO dragon-Fly** (<2005 SINTES)
4-MTA (2000 SINTES)	**Mephedrone*** 4-MMC (2008 SINTES)	**mCPP** (2001 INPS)	**2 CT*** (2002 SINTES)	**CP47,497 (C8 + C2)*** (2008 SINTES)	**Yopo** (graine)** (2008 SCL Paris)
2C-B* (2000 SINTES)	**Flephedrone*** 4-FMC, **Fluoromethcathinone** (2009 SINTES)	**pCPP** (2006 SINTES)	**5-MeO-DMT** (2003 SINTES)	**JWH-073** (2009 SCL Paris)	**Argyreia nervosa**** Hawaiian baby woodrose (2008 SCL Paris)
1-PEA (2002 INPS)	**Methylone*** bk-MDMA (2009 SINTES)	**TFMPP*** (2006 SINTES)	**5-MeO-DIPT** (2003 SINTES)	**JWH-122** (2011 SCL Paris)	**Mitragynine**** Kratom (2008 SCL Paris)
2C-I* (2003 SINTES)	**MDPV*** (2010 SCL Paris)	**DBZP** (2007 SCL Paris)	**4-AcO-DMT** (2011 SINTES)	**JWH-210** (2011 SCL Paris)	**MDAI** (2010 SCL Paris)
N-methyl PEA (2007 SINTES)	**Ethylcathinone*** (2010 SCL Paris)	**pFPP** (2009 SINTES)	**4-AcO-MIPT** (2011 SINTES)	**JWH-250** (2011 SCL Paris)	**pFBT** Fluorotropacocaine (2010 SCL)
4-FMP or 4-FA* Fluoroamphetamine (2009 SINTES)	**4-MEC*** Methylethcathinone (2010 SCL Paris)		**DIPT** (2011 SINTES)	**JWH-019** (2011 SCL Paris)	**APB** Aminopropylbenzofurane (2010 SCL Paris)
DOB (2009 SINTES)	**Pentedrone*** (2011 SCL Paris)		**5-MeO-DALT** (2012 SCL Paris)	**AM-2201** (2011 SCL Paris)	**MPA** Methiopropamine (2011 SINTES)
DOC (2009 SINTES)	**PVP*** Pyrrolidinovalérophénone (2011 SCL Paris)		**MeO-MIPT** (2012 SCL Paris)	**HU-331** (2012 SINTES)	**MXE** Methoxetamine (2011 SINTES)
PMMA* Paramethoxymethamphetamine (2009 SINTES)	**BMDB*** (2011 SCL Lyon)			**JWH-122 (5-fluoropentyl)** (2012 SCL Paris)	**MeO-PCP** (2011 SINTES)
2C-E (2010 SINTES)	**Butylone*** (bk- MBDB) (2011 SCL Paris)			**Methanadamide** (2012 SCL Paris)	**2-AI** (2012 SCL Paris)
2C-D (2010 SCL Paris)	**Ethylone*** (bk-MDEA) (2011 SCL Paris)			**UR-144** (2012 SCL Paris)	**Etaqualone** (2012 SCL Paris)
4-MA* Methylamphetamine (2010 SINTES)	**MOPPP*** (2012 SCL Paris)			**FUR-144** (2012 SCL Paris)	**5-APDB** (2012 SCL Paris)
4-FMA Fluoromethamphetamine (2010 Toxlab)	**Iso-ethcathinone** (2012 CEIP Caen)			**UR-144 (2H)** (2012 SCL Paris)	
N-Ethylamphetamine* (2010 SCL Paris)	**bk-MDDMA** (2012 SCL Paris)			**JWH-081** (2012 SCL Paris)	
DMMA (2011 INPS)	**N-Ethylbuphedrone** (2012 SCL Paris)			**JWH-122 N(4-pentenyl)** (2012 SCL Paris)	
2C-P (2012 INPS Marseille)				**RCS-4** (2012 SCL Paris)	
25I-NBOMe (2012 SCL Paris)				**JWH-200** (2012 SCL Paris)	

* Classified as a narcotic in France Identified since 2008 ** Natural substance

The date in brackets after the name of the substance corresponds to that of the first identification in France.
This table is often updated; a more recent version is available here: http://www.ofdt.fr/BDD/sintes/ir_110509_nps.pdf

Sources: SINTES / OFDT, SCL – Joint Laboratories Department (Customs seizures testing)/ INPS (National Forensic Science Institute) – STUPS file (Police seizures testing), Toxlab, CEIP Caen (Caen Centre for evaluation and information on pharmacodependence).

Conclusion

The current situation in France is one of dynamic offer coupled with still-marginal use (compared with that of illegal recreational drugs). However, this could change, especially since dealers' marketing strategies on the Internet are targeting an audience well beyond that of traditional users of illegal drugs.

By expanding the range on offer, NPS are complicating the job of authorities which are responsible for cutting down drug use.

The authorities will first have to confront legal challenges since the value of systematically banning all these substances has been shown to be limited in that it just encourages dealers to produce an ever-increasing range of new compounds to bypass the regulations. The results of experiments with alternative legal strategies implemented in other countries to regulate this phenomenon will need to be assessed in order to rank their effectiveness [19].

In parallel, to be able to answer questions from physicians about unusual symptoms and unknown drugs - and to determine health consequences - information resulting from reports of poisonings and overdoses will have to be made readily available. This issue cannot be dissociated from the question of NPS identification. In consequence, the challenge also covers institutions responsible for monitoring and the resources to be deployed for the testing of hitherto unknown substances - an enterprise that is closer to research than simple routine laboratory testing.

Finally, the Internet - which plays such a central role in the distribution of NPS - can be exploited as a monitoring tool and also as a means of prevention. The I-TREND project (see page 5) aims to fulfil the first of these objectives but the development of on-line prevention is as yet unaddressed in France. From this point of view, the United Kingdom and the Netherlands are pioneering the development of Internet resources, including tools to help users assess their use and cut it down.

Tendances

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