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THE PSYCHONAUT 2002 PROJECT

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1 Introduction

A dearth of information is available on the Internet regarding licit and illicit psychoactive compounds but no systematic assessments of representative samples of drug-related websites are available. To address this gap in knowledge, the 2-year, European Commission-funded, Psychonaut 2002 project was given the task of researching the online drug abuse community. Aims of this study were: a) to develop a reliable methodology to search and assess for information on psychoactive compounds online; b) to foster collection and analysis of data from web pages related to recreational/illicit substances; c) to identify emerging trends that can be addressed for prevention and immediate intervention and d) to develop an Early Warning Online Database where all this information would be collected and made available to professionals worldwide.

The Psychonaut 2002 project started in October 2002 and the initial discussions were focussing on how best organizing the work in order to achieve these aims. After an extensive literature search, it became clear that no new scientific literature had been published on the topic since the submission of the proposal to the EU. Therefore the state of knowledge of Internet as a resource of knowledge and a medium for promoting and selling drugs was and still is at its beginning.

During this initial phase, leading to the first meeting in December 2002, it was proposed that before being able to develop a reliable and useful database, meant to be used as an Early Warning System, the research needed to carry out an extensive research on how to find and evaluate the information available online. Consequently, it was agreed that the project will be developed in two main phases, one research-oriented and the other one database-oriented.

The first phase aimed at exploring (through pilot studies, extensive research and web mapping) what was the *de facto* situation of substance promotion on the Internet.

The second phase was meant be primarily devoted to the development of a database aimed at collecting the most relevant information elicited during the first phase of the project.

In the following pages, both the full extent of the activities carried out in the October 2002-September 2004 time-frame and the results achieved will be described.

2 Research centres

This is the list of the research centres and contact persons who took part in the project (given in alphabetical order by country of origin).

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2.1 Additional research centres

The following centres were not part of the original application to the EU. Although they joined the network eventually, they participated at the interim meeting held in Rovigo in December 2003 and took part in some of the activities carried out in the last project's year.

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This is the complete list of researchers who took part in the Psychonaut 2002 project

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- Comacchio Anna (I),
- Deluca Paolo (UK),
- Di Furia Lucia (I),
- Eastwood Dorte (I),
- Farre Magi (E),
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- Sandmann Helle (DK),
- Scherbaum Norbert (D),
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- Siemann Holger (D),
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- Tomasin Antonella (UK)
- Torrens Marta (E),

- Van der Kreeft, Peer (B),
- Zambello Francesco (I).

4 Activities for the first 12 months

What follows is a list of the activities which took place in the first 12 months (given in chronological order):

- Pilot Studies
- The London meeting
- Development of the web mapping methodology
- Further testing of the web mapping methodology
- Employment of the research worker/assistant and purchase of the machinery
- Development of the database for collecting information on web mapping
- Testing of research instruments
- Ethical approval
- Starting the web mapping
- End of the web mapping and preliminary analysis

Alongside these activities, we have presented and published a number of scientific articles whose complete list is reported in the relevant section of this report.

We have also been contacted by various government agencies which showed their interest in our methodological approach and which asked to be granted access to our database. Apart from being interested in future collaborations by sharing goals and information, they provided valuable suggestions for improving the database itself, which might be of use for a broad range of services.

4.1 Pilot studies

The Psychonaut 2002 project started with a number of pilot studies carried out by each participating partner and aimed at both assessing the drugs' situation on the

Internet and producing a valuable methodology for its assessment. These pilot studies provided a variety of issues that were discussed in the first Psychonaut meeting that took place in London in December 2002.

The pilot studies focussed explicitly on exploring the tools available for retrieving relevant and reliable information from the Internet, like common web search engines (AltaVista, Google, Infoseek, AlltheWeb, AskJeeves, Excite) but also commercial web search engines like Mondo¹.

These studies were aimed at developing a reliable methodology to assess both the quality of the information found online and the effectiveness of the chosen search engines in retrieving and ranking the information itself.

Therefore, it was decided that the search engines (which still represent the fastest and the most popular way to get information online), were used as the principal tools retrieve the information. This is still believed to be the best possible approach, even though these searches apparently cover only some 10-20% of all the information available on the Internet.

Among the several free search engines available, two were chosen for their importance, reliability and popularity: Google™ (Google, 2004) and AltaVista™ (AltaVista, 2004). The rationale of using two different search engines was to have a broader spectrum of findings as each search engine refers to different techniques for websites' indexing and ranking. Indeed, they are both well known for their innovation and longstanding presence. Google™ is a popular choice for web surfers, since it provides both a comprehensive coverage of the web and a satisfactory level of relevance of its results. On the other hand, AltaVista™ has been the first searchable full-text database of the World Wide Web (Search engine watch, 2004).

¹ <http://www.mondosoft.com/>

However, other forms of information retrieval might be added to the use of search engines. In particular, hyperlinks to other websites and chat rooms should be followed, because all engines we have tested (google, altavista, hotbot, lycos) have one common limitation of showing up only the first 1,000 hits. According to Google, this is an attempt to reduce the demands on their servers' capacity by keeping the sorting algorithm as short as possible. Moreover, the sort algorithm itself, PageRank, obviously ranks higher those pages which are referred to more often by other pages and which are clicked more often by users of the respective search engine. Therefore, for a site that delivers information about illegal products as well as about drugs of abuse and in particular for a site that delivers information on how drugs can be purchased, it is likely that their suppliers are not interested in much publicity.

Probably these sites run more likely in the "underground", in little clusters, without many linkages to (and from) the main drug addresses on the web. Following the ranking criteria just explained, they will get one of the lower ranks as ordered by the search engine (and possibly higher than 1,000) so that they are not accessible by the regular web user searching the web with any of the popular search engines.

For these reasons, other forms of Internet exploring were to be used; indeed, the second step of this web mapping phase was meant to investigating the links of those websites that are considered "interesting" following the criteria of quality of information, misinformation, possibility of buying drugs and/or accessories/paraphernalia.

Moreover, a further investigation into the core of Internet was to be carried out in the third and final phase. The third phase was meant to gain access to a restricted number of chats (possibly 10, one for each partner centre) and to follow them up for a period

of two months so that it could possible to take an active part in the ongoing forum discussions.

Another aspect that emerged from these initial studies was the extensiveness of information provided in some websites. Two good examples are given by Erowid² and Rhodium³, in which more than 500 names of substances and alternative ways of making, growing, and consuming them using different techniques are listed. They indeed provide a detailed index of chemical compounds and a list of accurate recipes that make it possible to produce virtually any illicit drug. Moreover, it is possible to discover drugs that are likely unknown even to specialists in addiction such as: P2P, TMA2, STP, IAP, MMAI, 2C-H, LSA, MAB.

Most notably, these sites are ranked top of web search engines making them easily reachable by anyone. Indeed, they do not have an age limit restriction to their contents.

Given the extensiveness of these websites, some problems clearly arise for assessing, in a reliable way, the quality and accuracy of the information reported in the thousands of web pages available.

4.2 Meeting

All these issues were extensively discussed at the first meeting which was held in London (4-6 December 2002). Two experienced webmasters actively took part at the meeting and were able to provide fruitful suggestions on how to search the web, how to map it and how to develop the database according to the latest methodologies and technologies available.

² <http://www.erowid.org>

³ <http://www.rhodium.ws>

Overall, the aims of the meeting were to discuss the goals of the project, the technical organization of the work for the web mapping, the discussion of the developed methodology, the discussion about the organization of the e-mail list and of the web-site, together with the development, the use and the accessing modalities of the database.

All the partners attended the meeting: Dr Alex Baldacchino (Scotland), Mr Heikki Bothas (Finland), Dr Anna Comacchio (Italy), Dr Lucia Di Furia (Italy), Dr Dorte Eastwood (Denmark), Dr Magi' Farre' (Spain), Dr Antonia Fernandez (Portugal), Dr Irene Flores (Portugal), Dr Claude Guionnet (France), Mr Henning Olsen (Denmark), Dr Milena Pizza (Italy), Dr Raffaello Raboni (Italy), Dr Maria Rossi (Italy), Dr Norbert Scherbaum (Germany), Dr Fabrizio Schifano (UK), Dr Marta Torrens (Spain). Both Malta and Belgium (observers) sent their apologies.

The meeting was a good opportunity to get in touch for the first time with some of the partners participating in the project. Therefore, all of the members briefly described their organisation and field of experience. After the members' presentations, Dr Schifano outlined and summarized the goals of the Psychonaut Project. Derek McKee, the St. George's Hospital Medical School's webmaster from IT Services, shared his expertise in conducting searches using Google and AltaVista.

Both the aims of the project and the scope of the database were shared and clarified. It was agreed to focus specifically on those websites providing information on manufacturing, growing and consuming as well as selling substances.

It was decided that an Early Warning System, based on the information circulating on the web, had to be developed. In order to do so, those 'partisan' web sites that, in being frequently quoted by other web sites and in being accessed by large numbers of visitors, are able to influence the trends (in terms of quality of information but also of

misinformation) had to be identified. In other words, this meant identifying the websites that are the focal points for the cyber community. On the other hand, governmental, institutional, NGO sites can provide early warning information on new trends in different countries. Therefore, a well developed, well maintained and updated, list of web sites would be useful.

The following research questions were identified:

1. From how many sites is it possible to buy and/or sell drugs?
2. How often are those sites visited?
3. How are the drugs distributed?
4. What types of drugs are sold?
5. Is there a limited access to buy the drugs on site?
6. On which percentage of sites the use of drugs is advocated?
7. How easily is it to find these pro-drugs sites compared with the anti-drugs?
8. How well developed are these pro-drugs sites compared to the anti-drugs site?
9. What new drugs are promoted and what information is available about them?
10. To what extent can this information be used by professionals?

The participants agreed to the goals of the project and it was proposed that in the following months previous to the start of the official web mapping each partner would test the agreed methodology and contribute further to its development. The methodological approach employed for the Psychonaut 2002 project will be described in the following section.

4.3 Methodology

Each country was assigned with the task of assessing a substance, or a group of substances, in accordance with their working experience, as their core task (see table

10). This substance was to be their focus on searching the Internet in English.

Moreover, each partner was meant to investigate in its own language all the 11 substances that represent the overall focus of the Psychonaut project.

These substances are: Amphetamines, Cannabis, Cocaine and Crack Cocaine, Dance drugs (Ketamine, LSD, GHB), Ecstasy, Herbs and Plant), Heroin and opiates, Inhalants and Solvents, Precursors to Illicit Drugs, Prescription Drugs, Tobacco.

4.4 Snap shot

Each partner had to carry out “a snap shot”. This was done on the week starting on June 23rd. The snap shot aimed at collecting all the websites for this first phase of the project and was carried out to overcome the ever changing and expanding nature of Internet and search engines. Therefore, a method for providing the list of websites that were, in that particular moment, available as results of search engines queries was needed. Each partner ran the search with both AltaVista and Google for all the 11 substances and employed sets of keywords both in its own language and in English for their specific, assigned, substance. The following tables represent the results of this search.

Table 1 – Summary of engines’ queries for each substance in English

Substance	Keyword	Google	Altavista	Total records
Ecstasy	<i>MDMA</i>	71,400 (810*)	48,747	280
Herbs, Plants	<i>Psychoactive plants</i>	20,200 (497*)	21,397	265
Precursors to illicit drugs	<i>Manufacturing drugs</i>	661,000	269,660	290
Heroin, Opiates	<i>Opiates</i>	83,400	61,208	290
Other stimulants, inhalants, solvents	<i>Inhalants</i>	88,700 (612*)	32,273 (990*)	270
Prescription drugs	<i>Prescription drugs</i>	985,000	468,354	290
Tobacco	<i>Tobacco</i>	2,710,000	1,997,028	290
Cannabis	<i>Cannabis</i>	359,000	229,873	290
Amphetamines	<i>Amphetamine</i>	68,700 (577*)	87,575	269

“Dance” drugs	<i>Ketamine lsd ghb</i>	9,580	3,983	290
Cocaine, crack cocaine	<i>Cocaine</i>	626,000 (808*)	517,503	280
				3,104

*Less than 1,000 - Excluding pages omitted by Google

As a result of running a search using a chosen key-word, a number of web pages URLs (addresses) normally appear. In most of the occasions, over 100,000 websites (reaching even 2,500,000 web addresses) may be reported. Out of all these websites, the first 100 sites in English, plus a 5% random sample of the remaining sites, plus the first 10 in each participating country’s own language for each substance were analyzed.

As emerged in the pilot trials, both Google and AltaVista are designed for displaying only the first 1,000 pages searched, even if the number of the resulting sites is reported to be much bigger (e.g., 2,130,000). The first 100 websites identified by Google™ and AltaVista™ with the chosen keywords were fully assessed. A further random sample of 5% of the remaining sites, chosen among those actually available, was assessed as well. For example, if the results actually accessible were 750, the first 100 web sites were assessed together with the 5% random sample of the remaining 650 (i.e.: 32 pages). Random numbers were created with Randomizer, a web-based service. The first 10 websites identified by the two search engines following queries formulated in each of the participating country’s own language for each substance were assessed as well. Overall, the snapshot produced a total of 4,644 websites (3,104 sites in English and 1,540 in the other 7 European languages).

In order to reach immediately the pages of the extracted sites, we the full URL address available on the top of the browser was appropriately amended with the desired number of the page. For example:

<http://www.google.com/search?q=DRUG+ABUSE&hl=en&lr=&ie=UTF-8&start=10&sa=N>

<http://www.google.com/search?q=DRUG+ABUSE&hl=en&lr=&ie=UTF-8&start=356&sa=N> (e.g.: start=10 becomes start=356).

Although some redundancy both within and between the two search engines was to be expected, the number of sites to be evaluated still was considered to be a huge task for the collaborating centres, which had to carry out the evaluation over the period of three months.

What follows are the outcomes of each “snap shot” in the local language of project partners:

Table 2 – Summary of the snap shot for the keywords in Finnish

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	Ekstaasi	Ecstasy	923	862	20
Precursors to illicit drugs	Huumeiden valmistaminen	Manufacturing drugs	171	91	20
Heroin, Opiates	Heroini	Heroin	1 260	840	20
Other stimulants, inhalants, solvents	Liuottimet	Solvents	2 050	1 414	20
Herbs, plants	Psykoaktiiviset kasvit	Psychoactive plants	30	11	20
Prescription drugs	Reseptilääkkeet	Prescription drugs	383	234	20
Tobacco	Tupakka	Tobacco	10 100	5 729	20
Cannabis	Kannabis	Cannabis	2 090	1 210	20
Amphetamines	Amfetamiini	Amphetamin	1 150	900	20
“Dance” drugs	Tanssihuumeet	Dance drugs	18	12	20
Cocaine, crack cocaine	Kokaiini	Cocaine	959	754	20
					220

Table 3 - Summary of the snap shot for the keywords in German

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	Ecstasy	ecstasy	47,100	61,830	20
Precursors to illicit drugs	Vorstufe Drogen Substanz	precursor drugs substance	273	127	20
Heroin, Opiates	Heroin	heroin	37,400	32,890	20
Other stimulants, inhalants, solvents	Schnüffelstoffe	sniffing agents	702	658	20
Herbs, plants	“Psychoaktive Pflanzen”	psychoactive plants	1,100	1,485	20
Prescription drugs	verschreibungspflichtig Drogen	prescription drugs	345	235	20
Tobacco	Tabak	tobacco	130,000	83,274	20
Cannabis	Cannabis	cannabis	45,300	42,403	20
Amphetamines	Amphetamine	amphetamine	8,610	7,791	20
“Dance” drugs	Partydrogen	party drugs	2,490	1,911	20
Cocaine, crack cocaine	Kokain	cocaine	37,300	32,065	20
					220

Table 4 - Summary of the snap shot for the keywords in Spanish

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	Extasis	Ecstasy	51,100	31,033	20
Precursors to illicit drugs	Precursores de drogas	Manufacturing drugs	7,240	5,106	20
Heroin, Opiates	Heroína	Heroin	45,000	38,861	20
Other stimulants, inhalants, solvents	Inhalables	Solvents	1,780	1,253	20
Herbs, plants	Plantas psicoactivas	Psychoactive plants	1,350	969	20
Prescription drugs	Psicofármacos abuso	Prescription drugs	2,010	1,307	20
Tobacco	Tabaco	Tobacco	206,000	136,838	20
Cannabis	Cannabis	Cannabis	20,100	12,727	20
Amphetamines	Amfetaminas	Amphetamine	11,400	7,950	20
“Dance” drugs	Drogas dance	Dance drugs	2,660	2,219	20
Cocaine, crack cocaine	Cocaína	Cocaine	63,500	47,648	20
					220

Table 5- Summary of the snap shot for the keywords in Danish

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	Ecstasy	Ecstasy	4.610	1.877	20
Precursors to illicit drugs	Fremstilling af narkotika	Manufacturing drugs	1.230	408	20
Heroin, Opiates	Heroin	Heroin	4.540	2.043	20
Other stimulants, inhalants, solvents	Snifning	Sniffing	348	228	20
Herbs, plants	Psykoaktive planter	Psychoactive plants	63	35	20
Prescription drugs	Receptpligtige lægemidler	Prescription drugs	1.200	493	20
Tobacco	Tobak	Tobacco	17.600	17.600	20
Cannabis	Hash	Hash	11.900	4.858	20
Amphetamines	Amfetamin	Amphetamine	3.010	1.344	20
“Dance” drugs	Designer drugs	Designer drugs	185	49	20
Cocaine, crack cocaine	Kokain	Cocaine	3.660	1.887	20
					220

Table 6 - Summary of the snap shot for the keywords in Italian (Padova)

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	MDMA	MDMA	2.620	1.428	20
Precursors to illicit drugs	Precursori di droghe sintetiche	Manufacturing drugs	285	111	20
Heroin, Opiates	Eroina	Heroin	42.600	21.529	20
Other stimulants, inhalants, solvents	Inalanti	Inhalants	1.010	685	20
Herbs, plants	Piante psicoattive	Psychoactive plants	474	345	20
Prescription drugs	Droghe prescritte	Prescription drugs	751	443	20
Tobacco	Tabacco	Tobacco	58.500	37.190	20
Cannabis	Cannabis	Cannabis	18.500	8.017	20
Amphetamines	Amfetamine	Amphetamin	1.770	4.395	20
“Dance” drugs	Droghe e discoteche	Dance drugs	3.280	298	20
Cocaine, crack	Cocaina	Cocaine	34.100	13.756	20

cocaine					
					220

Table 7 - Summary of the snap shot for the keywords in Italian (Rovigo)

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	MDMA	MDMA	2.600	1.428	20
Precursors to illicit drugs	Precursori farmacologici	Drug precursors	340	188	20
Heroin, Opiates	Oppiacei	opiates	6.750	3.778	20
Other stimulants, inhalants, solvents	sniffare	Sniffing	1600	807	20
Herbs, plants	Droghe vegetali	Herb drugs	2.880	1.809	20
Prescription drugs	Droghe prescrivibili	Prescription drugs	154	101	20
Tobacco	Tabacco	Tobacco	58.700	37.195	20
Cannabis	Thc	Thc	4.640	2.463	20
Amphetamines	Amfetamine	Amphetamines	5.340	4.395	20
Dance" drugs	Droghe da ballo	Dance drugs	2.380	1.291	20
Cocaine, crack cocaine	Cocaina	Cocaine	34.200	13.756	20
	Sostanza crack	crack	1.770	916	
					220

Table 8 - Summary of the snap shot for the keywords in French

Substances	Keyword	In English	Google	Altavista	Total
	Local language	In English	Number of pages	Number of pages	
Ecstasy	Ecstasie	Ecstasy	59	18	20
Precursors to illicit drugs	précurseurs de drogues	Manufacturing drugs	1,280	496	20
Heroin, Opiates	Héroïne	Heroin	44,800	45,385	20
Other stimulants, inhalants, solvents	Solvant	Solvents	17,700	9,995	20
Herbs, plants	Plantes hallucinogènes	Psychoactive plants	772	298	20
Prescription drugs	médicament détournés	Prescription drugs	457	217	20
Tobacco	Tabac	Tabacco	120,000	54,383	20
Cannabis	Cannabis	Cannabis	40,700	11,132	20
Amphetamines	Amphétamine	Amphetamine	3,100	681	20
"Dance" drugs	Designer drugs	Designer drugs	496	35	20
Cocaine, crack cocaine	Cocaïne	Cocaine	21,400	6,067	20

4.5 Links in the websites

Most of the websites to be visited would have a links section and it was our intention to follow through all the links and analyze them. However, considering that from most sites one can access from 10 to 100+ links, this could make the web mapping task unmanageable.

It was therefore decided to explore the links only after the first analysis was completed, and the most interesting sites identified.

4.6 The keywords

The word, or combination of words, used during the web search may strongly affect the results provided by the search engines. For example, “manufacturing ecstasy” vs just “ecstasy” would produce a completely different list of websites both in respect to relevance and ranking order. Therefore, a number of issues have emerged regarding the choice of the keywords. The solution chosen was to run searches based on single, most generic (broad meaning) keywords only, such as Ecstasy or MDMA.

4.7 Ethical approval

The St George’s Hospital Medical School Local Research Ethics Committee was asked to grant the ethical approval for the project. Since this is mainly a survey study it was considered that it did not require a formal ethical approval.

4.8 Web mapping

The first phase of the web mapping started on the 23rd of June 2003 and was completed on the 3rd of October 2003. This focussed exclusively on the outputs of the queries run with Altavista and Google following the methodology previously described.

The material from the web pages has been evaluated and assessed according to set criteria. Such criteria were based on: scientific soundness of the information presented, level of legality / illicitness of substances described, commercial / non-commercial nature of the site and level of danger that the site poses.

The data were stored on a purpose built database hosted at St. George's Hospital Medical School, University of London. This is a password restricted database and accessible to all the partners with a standard web browser. Records in the database can be updated and modified at any stage. The research co-ordinator has overseen all the process of implementing the database and has trained and assisted the other research assistants in their web mapping and helped with the arising difficulties or doubts arising throughout this process. The coding categories are described in full in the following section.

The German partner has also developed and tested a site-exploring software that makes the task much easier and in a way that results are more reliable, since each .html document within a site is scanned for its possible drug-related content. The software checks for specific words (e.g. substances). Further, it computes the absolute number of pages on a site and can calculate a ratio of pages dealing with drug-related content comparing it with the absolute number of pages, which may be considered as another description of how much drug-related a site is.

This software has two ways of scanning. The first is the simple one and is carried out by analyzing every page that is browsed by the user. This is called "manual scan".

When a page has finished the loading process, all links on this page are analyzed to check if they refer to pages which belong to the site. Every link to a page within the site is added to the site's pages list. Links that go to pages which are not part of the site are added to the site's links list. Both these lists grow stepwise by every new page that is opened. This method implies that the researcher would have to browse all pages manually in order to get the exact number of pages on a site and also to get an overview of all pages that have a drug-related content.

Alternatively, an automatic scan feature was organized. This 'site-explorer' starts at the root-directory of a site and automatically follows all links which refer to pages that belong to the site. This runs in the background, so one does not have to wait until all pages are finished but can start analyzing the content (site owner, contact address etc.). As soon as a page which matches one or more drug-related term(s) is found, the URL of this page becomes visible in a small results' list at the bottom of the browser window, together with the terms which were found. These pages can be opened in the browser by simply clicking on them so that the pages that have been found can be checked immediately for relevance. If a page is relevant, one can press a button to set the checkbox of the mentioned substance(s) in the database.

5 The database

Table 9 reports and explains the full list of the categories used to analyze the websites. The information recorded was used to answer the questions which outline the goals of this project and which have been previously described. Some preliminary findings are available from this report.

During the second phase of the project, the database was to be re-organized in order to make it more user-friendly. For this purpose, double entries and redundancy records, as well as information on different substances from the same website, were either deleted or merged. This provided a more exhaustive analysis for each website. We also aimed at developing a second database exclusively for collecting information on new drugs (i.e. ecological, smart drugs) and/or new trends in consuming well-known substances.

Table 9 – Categories in the database

	Category	Description
1	URL Page:	URL page as a result of the engine's search
2	Web page's name:	Page name
3	URL Site:	URL of the domain
4	Site name:	Site name
5	Extension:	.org .com .it
6	Site:	Is the site a full domain or hosted?
7	Relevant:	Is the site relevant to the scope of the project?
8	Organisation:	What kind of organisation?
9	Website size:	
10	Country:	
11	How found:	Found via Search engine or via Links
12	Engine:	If search engine, which one: Google, Altavista, Both, Not applicable
13	Ranking:	Ranking number
14	If linked, original ranking:	
15	On line:	Yes No cached
16	How often quoted:	
17	Language:	Language filter used during the keyword search
18	Key word:	Keyword used
19	Date:	Date when the site was visited
20	Substances:	Alcohol, Amphetamines, Anabolic steroids, Anorexant drugs, Barbiturates, Cannabis, Cocaine, Crack, DXM, GHB, Herbs, Heroin, Inhalants, Ketamine, Kava-Kava, LSD, MDMA, Mescaline, Methadone, Methamphetamine, Morphine, Mushrooms, Nitrites (Poppers), Nitrous oxide, Nutmeg, Oxycontin, PCP, PMA, Ritalin, Rohypnol, Salvia Divinorum, Tobacco, Tranquilizers, 2-CB
21	Other:	
	Type of site:	News, Inform, Entertain, Individual opinion, Personal experience, Other people experience, Research findings, Selling
22	Audience:	Is the website targeting: professionals, general public, users
23	Misinfo:	Does the web site provide misinformation? Yes no
24	Examples:	
25	Scientific literature quoted:	Yes no
26	New drugs:	Does the web site provide information on new drugs? Yes no

27	Which:	
28	Pattern of use:	
29	Position:	What is the overall position of the website? Pro drugs, anti drugs, harm reduction etc.
30	Reasons:	Explain
31	Synthesize/grow:	Does the web site provide information on how to synthesize, make grow illicit substances? Yes no
32	URL to synth:	
33	How to use:	Yes no
34	Disclaimer:	Presence of a disclaimer? Yes no
35	URL to discl:	
36	Chat:	Presence of a chat? Yes no
37	URL to chat:	
38	Mailing list:	Presence of a mailing list? Yes no
39	Newsletter:	Presence of a newsletter? Yes no
40	Bulletin board:	Presence of a bulletin board? Yes no
41	Restricted access area:	Presence of a restricted area access? Yes no
42	Helpline/Self-help group:	Presence of a helpline? Yes no
43	Search function:	Presence of a search engine? Yes no
44	Multimedia contents:	Presence of multimedia contents? Yes no
45	Links:	Yes no
46	How many:	How many links reported in the Links section
47	URL to links:	
48	Sponsor:	Yes no
49	What sponsor:	Report principal sponsor/s or advertiser/s on the website
50	Contact email:	Yes no
51	Email:	
52	Contact address:	Yes no
53	Address:	
54	Professional:	Professionally designed and developed: Yes no
55	Last updated:	
56	Number of visitor:	
57	How old:	e.g. 1998
58	Buy:	Yes/no
59	How to buy:	How is it possible to buy (i.e. credit card, cheque)
60	URL to buy:	
61	General comments:	
62	Law enforcement:	Does this web site require notification to the Law enforcement agencies? Yes no
63	Time spent:	In minutes
64	Hot spot:	Researcher's overall evaluation from: Very interesting to Not interesting

6 Computer equipment and personnel:

Each country purchased the relevant computer equipment and employed a research assistant to carry out the web mapping.

7 Agreed mandatory tasks given to core members:

Each country chose a substance according to their expertise.

Table 10 - Substance division among the partners

DRUG	COUNTRY
Ecstasy and ecstasy-like drugs	England
Precursors to illicit drugs	France
Heroin, Opiates	Rovigo, Italy
Other stimulants, inhalants, solvents	Padova, Italy
Herbs, Plants	Finland
Prescription Drugs / Tobacco	Scotland
Cannabis	Denmark
Amphetamines	Germany
“Dance” drugs (different from ecstasy)	Spain
Cocaine; crack cocaine	Portugal

8 Results of the first phase

8.1 Introduction

One of the early findings of the Psychonaut 2002 project emerged from the analysis of the literature. The medical literature on drug abuse comprises a great corpus of work. Yet very little of this relates to the increasing role that the internet has to play in the drug using population. In order to understand the pharmacological and psychoactive characteristics of any given compound, data presented in indexed journals or produced at international conferences are usually examined. However, for a number of psychoactive compounds which have appeared in the drug market in the last few years (e.g.: 2C-T7; 2C-I; GBL), scientifically sound and controlled literature data are virtually lacking.

Different issues can be taken into account when interpreting the “drug-and-internet” scenario:

- a) The presence of significant cultural transformations, which changed part of the drug business into something easier and more accessible to a broad range of people: from the street sale to the convenience of buying from home, from the office, from school
- b) The easy access to the information and the huge variety of the offers
- c) The availability of information but also of misinformation with respect to the illicit drugs
- d) The prevalent targeting of youngsters, who are both vulnerable and likely to possess a high level of IT skills.

The internet revolution has paralleled, and possibly influenced and shaped, the changes of the drug scene which has occurred in the last 10 years or so. Since the spread of AIDS, classical, harder, compounds (e.g. i.v. heroin) are not considered to

be “trendy” any longer and other psychoactive molecules which can be snorted, inhaled or ingested are preferred instead (EMCDDA, 2004; Schifano 2001). Apart from synthetic compounds, a large variety of herbs and plants derivatives proposed as stimulants, sedatives and psychedelics seem to be showing a market success (Zangara et al, 2004). Interestingly enough, the internet is at the moment one of the major ways for the dissemination of knowledge and sales of these psychoactive compounds.

It has been estimated that at least a few hundred websites are already dedicated to both prescription (Littlejohn et al, in press) and recreational/illicit (Schifano et al, 2003) drugs on the web. Most of these sites are, in one way or another, advocating the use of drugs. In fact, consumers can find on the web the best advice and suggestions to enhance their drug experience. Moreover, a number of specific compounds are potentially available through e-commerce (Schifano et al, 2003).

A group of US analysts recently conducted an Internet search for websites offering prescription drugs during a one-week period from January 15 through January 22, 2004 (National Center on Addiction and Substance Abuse at Columbia University, 2004). During the one-week period of analysis, they identified a total of 495 Web sites offering controlled substances which have accepted medical use and varying potentials for abuse and dependency. Examples of these compounds included: opioid painkillers (i.e.: fentanyl; oxycodone); benzodiazepines; barbiturates; methylphenidate. Only six percent of the sites selling the drugs required a prescription; there were no mechanisms in place to block children from purchasing these drugs. Of the sites selling drugs, 47 percent indicated they would be coming from outside the U.S., 28 percent indicated that the drugs would be shipped from a U.S. pharmacy and 25 percent did not indicate where the drugs would come from.

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA, 2004) has implemented an ‘early warning system’ which relies on what it is actually seized on the streets. However, the system does not take into account possible suggestions and trends coming from emerging, ‘virtual’, markets (e-commerce), which might well boost consumption of specific compounds which currently show low rates of use. To address this gap in knowledge, the 2-year, European Commission-funded, Psychonaut 2002 project was given the task of researching the online drug abuse community. Researchers of sixteen centres based in nine European Countries have been systematically searching the internet for websites with contents related to the different classes of drugs of abuse, which ranged from class A drugs (such as opiates and cocaine), through recreational drugs (such as ecstasy, ‘designer drugs’, and cannabis), to prescription drugs. The sites meant to be studied included, but were not limited to, sites containing information on the use, manufacture, synthesis, sales and acquisition of these substances.

The lack of both professional attention and scientific information on these issues is surprising indeed. To the best of our knowledge, no multi-lingual and systematic mapping of the web with regard to drug-related issues is available at the moment.

Aims of this study were: a) to develop a reliable methodology to search and assess for information on psychoactive compounds online; b) to foster collection and analysis of data from web pages related to recreational/illicit substances and c) to identify emerging trends that can be addressed for prevention and immediate intervention.

8.2 Results

In following the methodology above described (section 4.2), 4,644 links to websites were identified and thoroughly assessed. Of these, 97.4% (4,523) were actually online (i.e.: not cached) and 3,031 (65.3%) were considered to be relevant to the study aims (i.e.: websites referring to issues different from drugs, like music; movies etc, were eliminated). Due to a relevant (52.6%) degree of redundancy both within and between search engines, the sample was then reduced to 1,633 unique websites. Nonetheless, some of the analysis (i.e.: computing the average time spent in assessing the websites; eliciting the total number of websites for each keyword used) was carried out on the larger, relevant, sample. Average time spent in assessing each of the websites was 18.15 (+/- 13.92; range 1-120) minutes.

Most (1,500; 92%) of the websites accessed had their own domain, whilst the remaining others were hosted by popular webspace providers. The different type of organisations which owned the websites are described in table 11. Governmental, educational and research websites (where research findings on the index compound were provided) comprised about 1 out of 5 websites. On the other hand, the ‘private interest’ (industry/private company; individual) pages, which represented 41.4% of the sample, typically reported either personal or others’ accounts of drugs’ intake experiences and/or offered different items for sale. A proportion (10.3%) of websites offered general information or news pertaining to the different psychoactive compounds. Overall, only 317 (19.4%) websites contained a disclaimer/warning regarding the information provided.

Table 11: Type of organization owning the domain.

	Frequency	Percent
Industry; private company; private association; individual webpages	676	41.4

Governmental; Educational institution; Research centre	310	19.0
Other; Not known	285	17.4
Health centre; NGOs; Detoxification centre	194	11.9
Journal online; News provider; Search engine webpage	168	10.3
Total	1633	100.0

For 1,254 web sites (76.8%) an email contact was made available and 829 web sites (50.8%) provided an address contact as well. Although for 145 websites (8.9%; table 12) it was impossible to identify their country of origin, 53.6% of websites resulted to be hosted by English speaking countries.

Table 12: Websites' country of origin (please note that: Argentina; Australia; Austria; Belgium; Chile; Colombia; Faroe Islands; Greece; India; Ireland; Japan; Mexico; The Netherlands; New Zealand; Norway; Portugal; Puerto Rico; South Africa; Switzerland; Sweden and Ukraine were found to have a representation of less than 2% each)

	Frequency	Percent
United States	660	40.4
Not Known	146	9.0
United Kingdom	111	6.8
Italy	93	5.7
Germany	80	4.9
France	68	4.2
Not based in a single country only	65	4.0
Canada	64	3.9
Denmark	60	3.7
Brazil	53	3.2
Finland	51	3.1
Spain	38	2.3

With respect to the overall position of the sampled websites towards the use of drugs (table 13), it appeared that 42.0% of them showed a clear 'Anti Drugs' position,

30.1% of them did not clearly state their view, 17.9% showed a ‘Pro Drugs’ approach whilst an ‘Harm Reduction’ approach was evident in 10.0% of websites.

Table 13: Frequency and percentage of websites grouped according to their position towards drug use

POSITION	FREQUENCY	%
Anti drugs (includes both Prevention and Treatment websites)	685	42.0
Not stated	493	30.1
Pro drugs	292	17.9
Harm Reduction approach	163	10.0
Total	1633	100

The websites' ranking levels did not differ significantly as a function of the websites' position towards the use of drugs ($F(3; 1250) = 1.094; p = 0.35; ns$. Calculations were relative only to the first 100 websites identified by both search engines for the different keywords). A different picture emerged if the analysis of the subsamples of websites addressing specific compounds was carried out. In the case of heroin, only 6 websites showed a clear 'Pro Drugs' approach; their average ranking number was lower (i.e.: appeared earlier in the websites' search results' list; 35.33 ± 34.9) but not statistically significant different from that one of the 'Anti Drugs' websites ($51.97 \pm 28.1; F(3; 153) = 0.885; p = 0.45; ns$). On the other hand, the MDMA 'Pro Drugs' websites showed a significantly lower ranking (40.34 ± 32.5) than both the 'Anti Drugs' (55.0 ± 26.6) and the 'Harm Reduction Approach' (54.25 ± 22.9) websites ($F(3; 159) = 3.288; p < .022$). The Tukey' HSD post-hoc test confirmed that the 'Pro drugs' websites had a ranking which was significantly lower ($p < .05$) than the 'Anti drugs' websites one.

Although access to 178 websites (10.9%) was restricted, most of the websites provided their customers with either a postal (829; 50.8%) or an email (1,254; 76.8%) contact address. Moreover, some websites provided a number of means to interact with others and to share information. Indeed, 148 web sites (9.1%) offered a chatroom facility, 287 websites (17.6 %) a mailing list, 317 (19.4%) had a bulletin board and 333 web sites (20.4%) allowed their customers to take advantage of a newsletter system. Moreover, 232 (14.2 %) websites provided either a help-line or a peer-support system.

One hundred and sixty-five (10.1%) websites were offering the audience the possibility to purchase one or more drug-related items (including paraphernalia and/or licit/illicit psychoactive compounds). This happened either through the use of online

forms or via a system which involved the use of emails. A few examples of psychoactive compounds allegedly offered for sale on the web are given in table 14.

Table 14: Examples of psychoactive compounds allegedly offered for sale on the web (*: although active during study period, only available as cached when re-accessed on 18th November 2004; #: access restricted to members, who need to have their card validated first)

Group of psychoactive compounds	web address
Opioid analgesics: Buprenorphine, Butorphanol, Codeine, Darvon, Hydromorphone, Levorphanol, Meperidine, Methadone, Morphine, Nalbuphine, Opium Injection, Oxycodone, Oxymorphone, Pentazocine, Propoxyphene Paracetamol/codeine preparations	http://www.online-drug-source.com/private/resources/index.ws (#) http://www.pharmabymail.com/cgi-bin/store.cgi?lang=en&header=home&show=DOLOFRIX (free prescription with every order; free online consultation)
Psychiatric medications: antidepressants; antipsychotics; tranquilizers; sleeping aids	http://www.eprescriptionsnow.com/ http://www.md-pillstore.com/
Psychedelic tryptamines: DMT (dimethyltryptamine); 5-Meo-DMT; 4 OH-DET; 4 OH-DIPT; 5-Meo-AMT; 5-Meo-DMT; DPT; 4-acetoxy-DIPT	http://www.jmarchemical.com (*)
MDMA (ecstasy)-like compound: 2C-I; 2C-T-2; 2C-T-7	http://www.jmarchemical.com (*)
Plants and herbs: Ayahuasca ; Salvia Divinorum ; Peyote ; San Pedro; magic mushrooms; Herbal ecstasy	http://www.amazing-nature.com/how_order.htm
Others: Anabolic steroids; phentermine; phendimetrazine, barbiturates; sildenafil dextromethorphan	http://www.medprescribe.com/catwellness.aspx http://www.eprescriptionsnow.com/ https://www.rxllc.com/website_signup/ (#)

Moreover, 148 (9.1%) websites offered detailed information about the technical procedures to be put in place to synthesize and/or to extract from easily available

products a range of different licit and illicit psychoactive compounds. Examples of both extraction and synthesis procedures are given in table 15.

Table 15: Examples of psychoactive compounds' description of extraction and synthesis procedures available on the web

Technical task	Web address	Advice offered
How to extract lysergic acid amide from morning glory seeds	http://www.blogwars.com/modules.php?name=News&file=article&sid=268	<p>‘...Material</p> <p>400 Morning Glory seeds. Strong Vodka or Rum Coffee Grinder 2 bottles petroleum ether</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Wash seeds and let dry 2. Grind seeds into a powder 3. Put powder in jar w/ petroleum ether (we used 300 ml) 4. Shake jar, let stand 20 minutes, shake again, remove cap 5. Pour out petroleum ether and let the powder dry for a long time. 6. After powder is dry, put it in a new bottle and put rum or vodka in (we used 5 or 6 ounces, I'm not sure what the proper amount is) 7. Soak powder in alcohol for three days, shaking every hour or so. 8. Drink the damn thing. <p>First, this was one of the most f(....)d up experiences I've ever had, and it's legal, I think. Anyway, I suggest you try it but if it kills you, don't get mad at me. You should probably look at some website or book first.’</p>
Crack cocaine preparation	http://leda.lycaem.org/?ID=12951	<p>‘...Mix 2 parts ok coke HCL for 1 part baking soda in 20 ml of water. Heat solution gently until white precipitates form, and stop heating when precipitation stops. Filter and keep precipitate. Wash precipitate once with water (this procedure usually omitted in street product). Dry 24 hours under heat lamp. Voila. The product is much less pure (there is lots of baking soda left) but the procedure is safer....’</p>
MDMA (ecstasy) preparation	http://mdma.net/mdma.html	<p>‘....(from MDA) A solution of 6.55 g of 3,4-methylenedioxyamphetamine (MDA) as the free base and 2.8 mL formic acid in 150 mL benzene was held at reflux under a Dean Stark trap until no further H₂O was generated (about 20 h was sufficient, and 1.4 mL H₂O was collected). Removal of the solvent gave an 8.8 g of an amber oil which was dissolved in 100 mL CH₂Cl₂, washed first with dilute HCl, then with dilute NaOH, and finally once again with dilute acid. The solvent was removed under vacuum giving 7.7 g of an amber oil that, on standing, formed crystals of N-formyl-3,4-methylenedioxyamphetamine. An alternate process for the synthesis of this amide involved holding at reflux for 16 h a solution of 10 g of MDA as the free base in 20 mL fresh ethyl</p>

		formate. Removal of the volatiles yielded an oil that set up to white crystals, weighing 7.8 g....'
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During the Psychonaut 2002 project systematic search, we found detailed information (i.e.: dosage, best ways to both experiment with the drugs' effects and to cope with possible untoward reactions) on 92 'novel' (i.e.: no reports of misuse available in the Medline) psychoactive compounds. Examples of 'novel' psychoactive compounds found are given in table 16.

Table 16: Examples of 'novel' psychoactive compounds (i.e.: no reports of misuse available in the Medline) found during the Psychonaut 2002 project systematic internet search

Compound	Web address	Comments
<i>Herbs/plants</i> Hoodia Cactus, 'Xhoba'; 'P57'	http://www.dolfzine.com/page612.htm http://www.hoodia-dietpills.com/	'...Besides alleviating hunger and thirst, Xhoba also provides a state of alertness but without the jittery feeling produced by the current Western diet remedy of ephedra stacked with caffeine...' Aphrodisiac qualities reported by the San population bushmen of the Kalahari desert.
KinickKinnick	http://classygroundcovers.com/item--Arctostaphylos-uva-ursi-3-Cells-Tray-of-24-Bearberry-wild-cranberry--2161	Ethnic use described in some population living in the forests of north-central British Columbia
Kombucha	http:// Drugs-forum%20Kombucha.htm?sid=iIAOROnsp8&mbox=INBOX&charset=escaped_unicode&uid=11813&number=3&process=js&filename=Drugs-forum%20Kombucha.htm	'...Hard to spell easy to smoke herbal high. Traditional Native American smoke. At this price (£1.95; \$3.12) why not try this cool herbal high?..' '... Please help. I am interested in discussing with someone that is familiar with the drink Kombucha. ... How long have you been making and taking the drink? Can you share any health benefits you have experienced since taking the drink? And, have you experienced any negative side effects since taking Kombucha ?...' Called also 'The Blob' or 'Manchurian Mushroom', but no mushroom species are involved. Kombucha is actually a mixed culture, a symbiotic community of yeasts and bacteria
<i>DMT-related herbs/plants</i> Mimosa	http://www.erowid.org/experiences/subs/exp_Mimosa_hostilis.shtml	M Hostilis classically comprises a source of DMT made orally active by the addition of a plant containing

Hostilis		harmala alkaloids for monoamine oxidase inhibition.
Peganum harmala	http://www.erowid.org/plants/syrian_rue/syrian_rue_chemistry.shtml	Peganum Harmala is not psychoactive in itself, but may boost the effects of any tryptamine containing hallucinogen considerably. Together with DMT (found for example in Psilocybe Semilanceata mushrooms) it creates Ayahuasca Known as ‘Syrian Rue’, the plant’s seeds and roots contain a variety of alkaloids, the most prominent of which are the harmala alkaloids: harmine, harmaline, and tetrahydroharmaline.
MDMA (ecstasy)-like psychedelic phenethylamines 2C-E, 2C-P	http://hipforums.com/forums/showthread.php?postid=65532#poststop http://66.102.9.104/search?q=cache:ZOBZWLTAbsJ:hipforums.com/forums/search.php%3Fdo%3Dfinduser%26u%3D1145+the+hip+forum+and+2C-P&hl=en	‘... i plan on getting some 2c-e, and wanted to know if anybody had done both, and would have a comparison to offer...also, what amount did you take?..’ ‘...2C-P is the biz I hear..’ .
psychedelic tryptamines 4-hydroxy-DET; 4-acetoxy-DET; 4-acetoxy-DIPT; 4-OH-DIPT, 5-MeO-AMT, 5-MeO-DALT	http://www.erowid.org/chemicals/4_acet_oxy_det/4_acetoxy_det_primer.shtml http://www.catbull.com/alamut/Lexikon/Mittel/CZ-74.htm http://www.erowid.org/chemicals/4_acet_oxy_dipt/4_acetoxy_dipt_primer.shtml	‘... the 4th-position tryptamines represent some of the best psychedelics in the tryptamine family..’. CZ-74 is the N,N-diethyl cousin of silocin/psilocybin called 4-hydroxy-DET. ‘....Recently, I had the opportunity to experiment with 4-acetoxy-DET and provide it to a few friends..’. The free-base form of 4-acetoxy-DET: smoking anywhere from 5–20 mg can provide an immersive full-flavored tryptamine experience.

Finally, during our Internet search we met with a number of unusual psychoactive compounds’ combination patterns. An example of these combinations is given in table 17.

Table 17: Example of an unknown polydrugs’ combinations patterns

Tryptamines’ combination with ketamine	http://www.erowid.org/chemicals/4_acet_oxy_det/4_acetoxy_det_primer.shtml	‘... Similar to our results with combining DMT/DPT/5-MeO-DMT with ketamine, combining 4-acetoxy-DET with ketamine also provides an incredible synergy. Highly recommended for the cosmic-mystical near-death inclined...’
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8.3 Discussion

To the best of our knowledge, the present report constitutes the only systematic and multilingual overview of the online available information on licit and illicit drugs. Results of this assessment are intriguing; although we have been able to identify a number of websites offering both prescription and class 'A' drugs for sale, it seems that an exhaustive web mapping on drug-related issues can provide the practising clinician with an extensive overview of new drugs and new trends and hence on modification of drug scenarios. In fact, we elicited information on 92 compounds not commented in the scientific literature and, as a consequence, not routinely accessible by health professionals through learned material. The technical knowledge on novel recreational compounds is hardly obtained through reference books and scientific journals and this for at least two reasons: a) it takes some time for a scientific journal to publish a paper, which does not always match with rapid modification of drug scenarios; b) most of the information about new drugs/new trends is not evidence-based and can hardly find a place in a scientific journal. The "technical" information is often held in closed groups of users, who exchange information with each other without any contact with the scientific world (Riva, 2001).

It appeared that in most (about 41%) of cases, those who owned the domains were either an individual or a group (i.e.: industry), whilst the governmental, educational and research websites were represented in only 19% of cases. In other words, it seems that the 'internet and drugs' opportunity has been, so far, more extensively taken up by those who show a private personal/group interest in this matter. It has been suggested that governments should invest more in websites, and less in other issues, as a preventative measure. To this respect, Falck et al (2004) interviewed a community sample of recent ecstasy users (n = 304), aged 18-30, in Ohio. Friends

were considered the most important source of information about ecstasy (40 %), followed by harm reduction web sites (16%). About half the sample used the Internet to obtain information about ecstasy. He also found that harm reduction websites were visited by four times as many users as government-sponsored websites by ecstasy users. Our findings seem to further shed light on this issue. In fact, for the MDMA subsample of websites (but neither for the whole sample here examined, nor for the heroin/opiates subsample) those websites which gave information and advice on how to plan the drug intake experience (like the ‘harm reduction’ and ‘pro drugs’ websites) did appear significantly earlier in the search engines’ list with respect to the governmental/anti drugs/prevention websites. This confirms previous reports from our group on the situation of hallucinogenic phenethylamines (i.e.: 2C-T-7; ‘Blue Mystique’; Schifano and Martinotti, 2003) on the web. In other words, information of possible concern on recreational drugs (i.e.: MDMA and MDMA-like compounds), including description of synthesis, consumption and acquisition modalities, is the most readily and promptly accessible online. Educators are faced with the new challenge of teaching their students how to distinguish between scientific and reliable material on the web and the far more attractive and less boring, easy-to-be-reached, unchecked, pro-drugs material available online (Micke, 1996).

In about 10% of websites we sampled, one or more drug-related items and/or psychoactive compounds were offered for sale. Since we did not fully complete the purchase procedure, no proof is here given that the identified vending websites could really provide the substances offered. It is quite possible that some websites would take customers’ money without delivering what was promised (Eysenbach, 1999). However, the ‘web trip’ drug enforcement US operation carried out in July 2003 (which inactivated some of the websites here described) has identified the presence of

a real market of hallucinogens online, with sales from some of the vendors' websites amounting to \$20,000 per week (Drug Enforcement Administration, 2004).

In 9% of the sampled websites, information was given with respect to the technical procedures to be put in place to synthesize (either in the home kitchen or in more sophisticated laboratory conditions) and/or to extract a number of different recreational compounds. This kind of information sharing was generally seen as a positive 'harm reduction' approach; i.e.: extracting unwanted compounds made the drug more acceptable and less toxic. During this search, we met with a large number of previously unknown or apparently idiosyncratic combinations of drugs. From this point of view, the usefulness of internet as a way of implementing an 'early warning system' on new drugs and new trends seems clear.

Information available online was here carried out in 8 languages; five of these languages (English, Spanish, Italian, German, French) taken together were used by about 80% of those who accessed Google between September 2003 and June 2004 (Zeitgeist, 2004). The English speaking countries (here represented in about 54% of cases) contributed relatively more than other countries, and this may be explained by language facilitation issues and by larger availability of the IT technology in their population (Peltoniemi, 2004). Those who meet the prerequisites of literacy, Internet access and credit card ownership and who are most likely to come from the socio-economically privileged sections of society may possibly comprise the group of 'expert drug users'/'psychonauts' (European Monitoring Centre for Drugs and Drug Addiction, 2004). The stereotypical image of the 'drug abusing patient' (i.e.: from a low socioeconomic background, addicted to heroin/crack cocaine and responsible for the majority of acquisitive crimes) might need to change (Littlejohn et al, in press).

The efficacy of using a fixed set of keywords during the ‘snap shot’ might be questioned. Obviously, this choice was made to reduce and control the number of pages to be visited. On the other hand, some topics (and search keywords) like ‘prescription drugs’, which have been grouped here in a single category, is possibly too limiting. To overcome this problem, specific Psychonaut 2002 exercises have separately addressed these issues (Schifano and Deluca, 2003 b). One could also wonder if the sampling technique we applied was able to both identify the most significant websites and to represent the global situation of the online accessible information on drugs. In fact, it has been suggested that search engines may reach no more than 10-35% of all the online available information (Search engine watch, 2004). Use of trained software (e.g. metacrawlers) could possibly have improved the coverage, but we aimed at carrying out an analysis of that information which is easily available to the average user. On the other hand, from the initial sample of 3,104 relevant websites, we reduced our search to 1,633 (about 53%) unique websites, due to the high level of repetitiveness both within and between search engines (Lumb and Ruddy, 2001). In applying the capture/recapture paradigm (Gemmell et al, 2004), one can think that the higher the level of redundancy the higher the coverage/efficacy of the sampling technique applied would be. Nonetheless, it is possible that more information is exchanged between users not through the web pages but through more private ways of communication. For this reason, the second part of the Psychonaut project has been focusing on the analysis of information exchanged between selected customers’ groups (i.e.: newsgroups, chatrooms, mailing lists, newsletters, bulletin boards etc).

8.4 Conclusions

Internet drugs' vendors transcend different countries' laws, making it difficult to take action against those that are engaging in illegal practices. States clearly cannot solve this problem without international help. Because of both the ease and rapidity of access, the Internet offers a flood of drug related data that runs constantly ahead of that available to clinicians and regulatory authorities (Halpern and Pope, 2001). Our findings may constitute a public health issue for vulnerable individuals (i.e.: children and adolescents) whose IT literacy can be surprisingly good but who are also at higher risk of experimenting with psychoactive compounds. Younger patients should be questioned by their physicians about what sort of information they are obtaining online about drugs (Halpern, 2004). Health professionals need to be aware of the web being a new drug source, which may change the rates and patterns of illicit drug use (St George et al, 2004). Finally, our findings strongly support the idea (Halpern and Pope, 2001) that projects aimed at designing more "attractive", vigorously advertised, prevention websites should be implemented. However, Internet-based efforts to prevent drug use may not deflect visitors from partisan Websites. Indeed, many governmental websites and websites of programme for the prevention of drug abuse, did not appear in our mapping (e.g. TalkToFrank.com (UK)) or appeared after the partisan websites. Therefore, governmental agencies and NGOs should be developing websites keeping in mind, not only the quality of the content, but also some golden rules that will allow it to be 'search engines friendly' and consequently more easily discovered by the average and experience Internet users alike. In the following section we will address some of these aspects.

9 Methodological considerations pertaining to first phase of the project

Search Engines are the gateways to Internet. In fact, using the search engines for sampling the Internet does not actually means we are collecting our sample “freely” or “randomly” directly from the Internet. What we are doing is searching the database of these search engines (ie Google and AltaVista). These systems differ from one another in the scanning and indexing technique they use to construct the database of the millions of websites they visit and the search algorithm they employ to generate the response. As a result, the results from the same query from different search engines vary considerably. Web coverage, relevance and precision are all elements that contribute to this discrepancy. Although it is not the aim of this project to address this issue in detail we would like to describe some of these aspects. Especially those related to the high-low ranking.

High ranking is the aim of every webmaster for the simple reason that just very few of us will navigate through all the results given by a search on Google or similar search engines. Understanding the ranking rules will increase the probability that a site will be found and will appear higher on results lists.

Because there are hundreds of millions of Web pages, any query is likely to have a huge number of matches. So for search results to be useful, it is very important for a search engine to determine which of those pages are most likely to have good, relevant information and put those at the top of the list of matches. Moreover, an understanding of the main ingredients can also help us in explaining why a website is valued high or low and hence explain the results we obtained with our study.

The first simple and universal rule is that content counts, and that content near the top of a page counts for more than content at the end. In particular, the HTML title and the first couple lines of text are the most important part of a page. If the words

and phrases that match a query happen to appear in the HTML title or first couple lines of text of a page, chances are very good that that page will appear high in the list of search results. Other rules are, however, more search engines depended.

AltaVista

AltaVista has introduced Internet's first Web index in 1995. During its time on the Web, the AltaVista search engine has undergone several revisions and continues to evolve. Though it faces competition from a number of worthy competitors, it's fair to say that AltaVista ranks as the most feature-rich general-purpose Web search tool. It bases its ranking on both static factors (a computation of the value of page independent of any particular query) and query-dependent factors.

It values:

- Long pages that are rich in meaningful text (not randomly generated letters and words).
- Pages that serve as good hubs, with lots of links to pages that have related content (topic similarity, rather than random meaningless links, such as those generated by link exchange programs or intended to generate a false impression of "popularity").
- The connectivity of pages, including not just how many links there are to a page but where the links come from: the number of distinct domains and the "quality" ranking of those particular sites. This is calculated for the site and also for individual pages. A site or a page is "good" if many pages at many different sites point to it, and especially if many "good" sites point to it.
- The level of the directory in which the page is found. Higher is considered more important. If a page is buried too deep, and the crawler simply won't go that far

and will never find it.

These static factors are recomputed about once a week, and new good pages slowly percolate upward in the rankings. Note that there are advantages to having a simple address.

Query-dependent factors include:

- The HTML title.
- The first lines of text.
- Query words and phrases appearing early in a page rather than late.
- Metatags, which are treated as ordinary words in the text, but like words that appear early in the text (unless the metatags are patently unrelated to the content on the page itself, in which case the page will be penalized) (non e' completamente chiara, qs spiegazione)
- Words mentioned in the "anchor" text associated with hyperlinks to a page.

Keep in mind that in any query, rare words count more than common words. If someone searches for synthetic drugs and 2C-T-7, pages with the word 2C-T-7 will appear at the top of the list (a technique known as "inverse document frequency"). As mentioned before, repetition doesn't work. AltaVista only counts to two.

Google:

Most of what has been mentioned above should work also for Google.

However, Google bases its ranking heavily on PageRank. This relies on the uniquely democratic nature of the web by using its vast link structure as an indicator of an individual page's value. In essence, Google interprets a link from page A to page B as a vote, by page A, for page B. But, Google looks at more than the sheer volume of

votes, or links a page receives; it also analyzes the page that casts the vote. Votes cast by pages that are themselves "important" weigh more heavily and help to make other pages "important."

Important, high-quality sites receive a higher PageRank, which Google remembers each time it conducts a search. Of course, important pages mean nothing to you if they don't match your query. So, Google combines PageRank with sophisticated text-matching techniques to find pages that are both important and relevant to your search. Google goes far beyond the number of times a term appears on a page and examines all aspects of the page's content (and the content of the pages linking to it) to determine if it's a good match for your query (Google, 2004).

10 Activities of the last 12 months of the project

- Writing up of the Interim report
- Planning and organization of the interim meeting in Rovigo
- Meeting in Rovigo
- Cleaning and amendments of the database on the base of the discussion held in Rovigo
- Full analysis of the findings from the first phase of the project
- Planning of the second phase
- Pilot studies
- Starting up of the Forum analysis
- End of the second phase and preliminary analysis and consideration
- Building and implementation of the Early Warning System
- End of the contract
- Writing up of the final report

11 Second Phase: Forum

The second phase of Psychonaut 2002 Project focussed on interactive drug information shared by users in the Internet via Chat Rooms and Forums found during the Phase I of the project. It aimed, therefore, at monitoring and evaluating the contents of the discussion taking place.

It was carefully deliberated whether the target of investigation should be (live) chat rooms or forums (bulletin boards). The conclusion was that forums were a better

option, primarily because they do not require constant observation. It was also decided that the researchers ought to remain inactive observers in the forums. We omitted chat rooms from observation though they may have provided some interesting facts and offered the opportunity to interact with others. This was due primarily to technical issues and previous experience at the beginning of the year 2004. It quickly became obvious that people in the drug community chat rooms are very suspicious of every new entry. One example is a member from the London group who was traced by her IP address and exposed as sitting at a computer from the University in London. Our German IT consultant confirmed that this is a general problem originating from the underlying technique of the Internet: browsing the Internet or chatting means sending data from one computer address to another. In this way, people can easily be traced to their locations. It could only be solved by more complicated (and expensive) techniques, such as using private Internet dial-up accounts or routing data through certain servers which hide the originating IP addresses. Moreover, it would be a time consuming experience to gain the confidence of the other chatters before they reveal any knowledge/information that would be considered interesting (but possibly illegal as well).

The primary focus of the second phase was therefore the analysis of the discussion boards. They provide information similar to that given in chat rooms and may be visited anonymously without the need of prior registration.

To research the forums, two databases were created. The first, “forum information database” included basic information on the selected forums, such as forum name, URL address, language, number of people participating and number of messages posted (see table 18 below).

Table 18 - Categories in the forum information database

Category	Description
URL	URL page as a result of the engine's search
Forum's name	Page name
Language:	URL of the domain
Organisation:	Site name
Country:	.org .com .it
How found:	Via Search engine/via links/via database
Restricted access:	Yes/no
Audience:	Professionals/general public/users
Position:	Pro drugs/anti drugs/balanced/harm reduction/treatment/prevention/not stated
Disclaimer:	Yes/no
Number of registered users:	
Highest number of users online:	
Number of topics:	
Number of topics on drugs:	
Number of topics on drugs:	
List of "threads":	
General comments:	
Submitted by:	
Date:	

The second, more comprehensive, database (see table 19 below) focussed on the analysis of the interaction within each forum. In the forum content database, the information was collected in seven categories: new drugs, online shops, offline shops, how to make/grow drugs, how to use drugs, how to disguise web sites.

Table 19 - Categories in the forum content database

Category	Description
Topic:	New drugs/online shops/offline shops/how to make or grow drugs/how to use drugs/how to disguise web sites.
Submitted by:	
Language	
Forum's name:	
Date:	
Substance/s	
Summary:	
Message	pro drugs/anti drugs/balanced/not stated

Each partner had to choose two forums for the analysis, one in English and the other one in its native language. The full list is reported in the next section (11.1; List of forums visited and analyzed).

11.1 List of forums visited and analysed

- The Alcohol and Drug Forum (http://www.x20.org/drug_toc.htm);
- EveryoneDoesIt.com (<http://forum.everyonedoesit.com/>);
- The Hive (<https://www.the-hive.ws/forum/forums.pl>);
- The Psychoactive Vault
(<http://mysticman.proboards19.com/index.cgi?board=keskustele>);
- Forum del gruppo (<http://www.freeforumzone.it/viewforum.aspx?f=1040>);
- The hip forums (<http://www.hipforums.com/forums/>);
- Drugs Plaza (www.drugsplaza.com);
- Drugs Forum (www.drugs-forum.com);
- Urban75 (<http://www.urban75.net/vbulletin/>)
- Samba420 (<http://www.samba420.net/forum/>)
- Frenchweed (<http://frenchweed.lautre.net/board/>)
- Yahooka (<http://www.yahooka.com/forum/>)
- Drogen-Forum (<http://www.drogen-forum.de/forum/index.php>)
- The Lyceum Forums (<http://forums.lycaeum.org/cgi-bin/ultimatebb.cgi>)
- Psychedelia (<http://www.psychedelia.dk/>)
- DanceSafe (<http://www.dancesafe.org>)
- The New Bluelight (<http://www.bluelight.nu/>)

11.2 Some findings and considerations

11.2.1 *The Alcohol and Drug Forum*

The Alcohol and Drug Forum, when visited in July 2004, had 223 different ‘threads’ (topics under discussion begun by one user and then replied to by others), and 639 ‘posts’ (the replies). Users do not need to be registered with the website to begin threads or make posts, so it is entirely anonymous. The threads represent an eclectic mix, such as coping with an alcoholic partner, how to set up chain letters and other ‘get rich quick’ schemes, some links to porn sites, and offers of drugs for sale of questionable validity. A typical example of the latter is:

[Title] I love hydrocodone!

From: WatsonGirl

Date: 15 Sep 2004

Time: 00:39:34

Remote Name: 204.118.188.3

Comments

vicodin, percocet, lortab, methadone, and oxys! Guarenteed good day

From: Your Friend

Date: 23 Jan 2004

Time: 05:04:55

Remote Name: 217.132.96.223

Comments

This is the biggest scammer again posting. He will pretend to be from Spain and Canada - Stay away.

Note that the warning to stay away is dated eight months *before* the offer of drugs!

Many of the postings are confusing in this manner.

11.2.2 *Everyonedoesit.com*

In contrast, Everyonedoesit.com has ten thousands registered users, and users must be registered in order to begin threads or make posts. However, registration details can easily be anonymized, and users can use anonymous email addresses (such as those from hotmail.com). The focus of the website is cannabis and ‘magic mushrooms’. The site provides an online shop for cannabis seeds and paraphernalia and for buying mushroom ‘seeds’. The forum page contains eight subpages for cannabis discussions, four for magic mushroom discussions, and one for other psychedelic drugs.

Everyonedoesit.com proudly announces on its homepage that it was featured in an *Observer* article in August 2004 about the popularity of ‘legal highs’ and drugs such as “Kratom”. A typical post regarding Kratom is this:

Hello members! Kratom (mitragyna speciosa) is a herb found in South East Asia, while its illegal in Thailand its legal in most other countries. Its effects are similiar to Marijuana and Opium with a VERY relaxing feeling. Its available in a couple different forms IE: Kratom Dried Organic Leaf, Kratom Extract and a powdered form that can be mixed into a milkshake or tea. Below is my website that offers these forms, we are the only commercial company exporting this. 95% of all the Kratom in the western hemishpere is from us!! Please check it out! <http://psychoactiveherbs.com/catalog/>

Another post offered advice on how to use salvia seeds for its psychedelic effects.

However, the very great majority of threads and posts are more mundane. A proportion are questions posed by novice drug users, looking for (and receiving) advice from more experienced users. What follows is a typical ‘cry for help’:

gettin an 8th of pure phet [amphetamine?] this weekend for £20 so im going halves on it with a freind for a party as i have never tried it before so is there going to be a real bad come down?? i got todl pills come down was shit but i was fine on them. Is there anything else i might need to know? i dont even know how big to cut the lines! Lol [laugh out loud]

There are also speculative questions, discussions and debates. A typical example is given by the debate around the psychedelic properties of nutmeg, or of dried banana skins. One example is given here:

I was told by someone that if you put lemon juice on a cracker and put it into a baggie and place it in a widow for a few days, it will make you trip like you took some acid....is this true? or bullshit?

Such requests don't always receive detailed answers. Many receive short replies to do some further research. Many experienced users will point novices in the direction of Erowid.com, which is a particularly well-known online drug database, that details anything about a large group of psychoactive compounds, how to make/ get them, how to use them, expected effects and side-effects. An example is given here:

well dxm is basically the only tripping drug i can get my hands on so is dxm really that bad for you?

look it up on erowid and that should explane things a bit more

11.2.3 The Hive

The Hive is a well-established drug forum with more than 5,000 registered members. It is aimed at people who are interested in not only experimenting with drugs but also synthesizing them. The Hive forum is divided into three categories and thirteen subcategories, of which ten are related to drugs. Most of the categories deal with

chemistry, i.e.: extraction of chemicals and methods of drug synthesis. However, this kind of discussion is usually presented at a theoretical level. Other drug related categories include general discussion about legal issues. The Hive Archives are massive, with thousands of pages offered. In the Hive forum discussion on where to buy drugs or precursors of drugs was not allowed at all.

11.2.4 The Psychoactive Vault

The Psychoactive Vault was a relatively novel Finnish drugs forum dating back to year 2002. There were 210 registered members (2004-06-23). Psychoactive Vault was divided into four categories and nine subcategories, which were all drug related. Categories included discussion on different plants and substances, home chemistry, experiences and risks & dangers. The forum was aimed exclusively at users. In September 2004, soon after the research phase was completed, Psychoactive Vault moved its location to

<http://www.activeboard.com/forum.spark?forumID=35777&subForumID=68387>.

Unfortunately for the research, all the old messages disappeared during this process. The analysis of this and the previous forum from the Finnish research unit, during the period June-August 2004, produced 49 records of five different categories including new drugs, online shops, how to make or grow drugs, how to use drugs and web sites (as reported in table 20).

Table 20 – Categories and number of records in the forums database

Research category	N
Online shops	18
New drugs	17
How to make/grow drugs	10
How to use drugs	4
Web sites	1
(Offline) shops	-
How to disguise drugs control	-

Total	49
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Information on drug selling (offline) shops was not found in the two forums investigated. All in all it seems that open discussion on actual sources of drugs is not very common. Moreover, in the Psychoactive vault some online shops were discussed, but this kind of information sharing was often frowned upon. The rationale was that if too many people know about the sources, they will more likely be closed down.

Also, any information of high interest value on how to disguise drugs control was not found in the Hive or in the Psychoactive vault.

11.2.4.1 New drugs

17 new drugs were found and reported into the database by the Finnish colleagues.

Eleven of these new drugs were synthetic and six herbal. Records of new drugs included an overall description of the substance, dosage, and user experiences.

However, sometimes there was only limited information available. The information was summarized and translated into English when necessary. Links to the original source of information were attached.

Example of a record of a new drug:

4-OH-DIPT (4-Acetoxy-DiPT) is a tryptamine whose effects have been compared to both 2C-B and mushrooms.

4-Acetoxy-DiPT is found as a slightly off-white powder and is usually taken orally. 4-Acetoxy-DiPT can be found in both HCl salt form and as a freebase. Both of these forms are orally active with the freebase being about 10% lighter and therefore 10% more potent than the HCl form (ie 20mg HCl = ~18 mg freebase).

4-Hydroxy-DiPT (4-OH-DiPT) is a very similar chemical which has slightly lower dosages.

Dosage: 3-5mg (low effects) to 25-40mg (strong effects)

Duration : 2 - 4 hours

Normal After Effects : 1 - 4 hours

Experience (with 25mg orally):

It was beyond expectations. I now understand people used the word lush to describe the experience. I was expecting something along the lines of MDMA, and I was pleasantly surprised to notice the entheogenic consciousness oozing out of the cracks in the fabric of reality. I became more aware of how long I'd put my 'spiritual mission' aside for lack of time. I really needed this, true soul searching stuff. And sitting here writing this now a peaceful sensation of understanding flows through me. The entheogenic essence that flows deeply in this material. Everyone could do with a little of this stuff to help them find themselves in this increasingly confusing reality.

http://www.erowid.org/chemicals/4_acetoxy_dipt/4_acetoxy_dipt_primer.shtml

11.2.4.2 Online shops

Through investigating the drug forums, 18 online shops selling drugs were found and recorded in the database. These online shops were found in the Psychoactive vault forum.

Records of online shops included the URL, an overall description of the business and the substances of choice. In some cases it was possible to tell where the online store was based etc., but usually there was only limited information available.

Of 18 recorded online shops, eight were selling synthetic drugs, such as dextromethorphan and various tryptamines and phenethylamines. These drugs were sold for use as solvents or for supposed research purposes. Whether there are any actual, legitimate purposes for many of these products, remains uncertain.

Ten online shops were selling herbal drugs, such as Salvia Divinorum seeds and Psilocybe Cubensis mushrooms. The operation lies in a grey area, since at least some of these plants have some legitimate uses. Furthermore, in many cases it remains unclear, whether it is legal to order plant seeds and spores through mail. The users report of contradictory policies eg. among the Finnish customs officials.

An interesting detail is that two weeks after recording a group of research chemical selling online shops that had positive customer reviews in the Psychoactive Vault, there was a news release (<http://www.dea.gov/pubs/pressrel/pr072204.html>) on the DEA (American Drugs Enforcement Administration) website that they had carried out a major drug enforcement operation against this very same online shops and their managers. This information combined with some of the user reports may suggest that the life span of a rogue chemical supply can be very short. Apparently there are good profits to be made that make the risk worth taking.

Example record of an online store:

JMAR Chemical <http://www.jmarchemical.com>

A seemingly well-organized online shop that offers among others 4 ho-det, 4 ho-dipt, 5 meo-amt, 5 meo-dmt, dpt, melatonin, dextromethorphan, 2ct2, 4-acetoxy-dipt, 2c- i, 5 -htp and adrenaline.

International shipping. Private member area.

11.2.4.3 How to make or grow drugs

In this study, “how to make drugs” referred to making or creating drugs. However, this did not include creating new substances altogether.

In the drug forums there is a lot of information on how to grow drugs and on how to use prescription drugs as intoxicants. However, only information of high interest value was recorded in this category. For example, basic information for growing cannabis was not recorded in the database.

Eventually, ten records on how to make or grow drugs were recorded in the database. The information was summarized and translated into English when necessary. Links to the original source of information were attached.

In the forums, users share tips on plant and fungi cultivation and information such as instructions on how to extract DXM (dextromethorphan) out of cough syrup or codeine out of painkillers. Users often see this kind of information sharing as positive harm reduction: extracting unwanted compounds makes the drug use easier for the liver and the stomach. Their argument is that ‘if you are going to use drugs anyway, why not make it safer’.

There is also information available on synthesizing drugs in the home kitchen, or better in sophisticated laboratory conditions. However, this kind of information is not suitable for the average user since it often requires chemistry skills. Furthermore, the necessary ingredients for the drug synthesis process may be very difficult to acquire.

Example record on making or growing drugs:

How to extraxct LSA from morning glory seeds

This way you avoid consuming poisonous materials that cause stomach cramps and nausea.

- 1. Grind the seeds. Keep in mind that LSA is sensitive to light.*
- 2. Mix the seeds with a glass of cold or slightly lukewarm purified water. (Up to 400 seeds)*

3. *Let them soak for 20-30 minutes and keep stirring.*
4. *Filter with a coffee filter.*
5. *Throw away the crushed seeds unless you want to repeat the extraction.*
6. *Consume the liquid.*

11.2.4.4 Using drugs

In this study, “how to use drugs” was determined by acquiring the drug and explaining how to use it, excluding the obvious ways.

In the drug forums there is a lot of information on using drugs. However, only information of high interest value was recorded in this category. For example, isolated remarks on dosage were not recorded. Eventually, only four different directions on how to use drugs was recorded in the database. The information was summarized and translated into English when necessary. Links to the original source of information were attached.

Example of a database record on using drugs:

How to smoke amphetamine/smack with a home made bong

*What you need is a bottle (half a litre), a straw, a needle, some folio and some tape.
(And cigarettes)*

1. *Take the bottle, make a hole in the side and insert the straw through it.*
2. *Some cold water can be added in the bottom for cooling, but don't let the smoke go through it.*
3. *Cover the mouth of the bottle with folio and attach it firmly with tape.*
4. *Make small holes into the folio with a needle.*
5. *Smoke a cigarette and place the ashes over the folio. This is so that the smoked smack/amphetamine won't drop in through the holes.*

6. Place the amphetamine/smack on the ashes and light it. Suck with a straw.

11.2.5 Web sites

Quite surprisingly, not many links to highly interesting web sites were found in the forums investigated, in addition to already well-known sites such as Erowid, Lyceum and Rhodium. It seems that these renowned sites do not have too many competitors in the psychonaut scene. Eventually, only one site was recorded in the database.

Example record of websites:

<http://rain.prohosting.com/robsku/dihkal/>

"DIHKAL - Drugs I Have Known And Loved" is a drug databank maintained by a young Finn.

An central part of this project is a list of all psychoactive substances he has ever tried or used including personal ratings. Additional information is available on quite a few of substances. Provided info poses scientific but is largely based on highly subjective accounts. Legal point of view is included.

Site also includes news, articles and personal views. These parts are a bit out-dated, though. This site is well-known and often quoted in the Finnish psychonaut scene.

Some of the new or not so common drugs presented in the site include:

BDO (1,4 Butanediol), 2C-I, 2C-T-4, 5-MeO-AMT, 5-MeO-AMT, 5-MeO-DiPT, 5-MeO-DMT, AMT, BZP, Damiana, Dextropropoxyphene, Ether, Ephedrine, Ibogain, codeine, LSA, Moclobemid, Kanna (Sceletium tortuosum), Clobutinol, Peganum Harmala, Salvia Prenia, Salvia Splendens, Dicentra spectabilis, Tramadol hydrochloride, Yopo.

11.2.6 Forum del gruppo

It displays a lot of discussions about drugs, especially cannabis, herbal drugs, smartdrugs, hallucinogens. People exchange all sort of information about using effects and experiences, drug purchase, home-growing or synthesizing, events and parties related to drug consumption.

11.2.7 The hip forums

This forum offers discussions about many different subjects, among which there are several regarding psychedelics, including all sort of psychoactive substances, "old and new". Information is given not only about each substance effects and ways of consumption, but also about how to grow/synthesize at home, about drug purchasing and about legal issues and drug testing.

11.2.7.1 Findings from the «Forum del gruppo » and « The hip » forums

The main topics discussed in the visited forums are:

- The psychedelic experience: sharing of personal experiences about the effects of different drugs and the related risks.
- Meetings, events related to drug consumption, such as rave parties, with detailed information about the place, the availability of drugs and issues regarding drug control.
- New drugs, especially synthetic ecstasy-like substances and herbal drugs from psychoactive plants.
- Ways of consumption: all the different ways to use a specific substance and how to mix up different substances (for example: ecstasy, alcohol, cannabis) according to the desired effects.

- Home growing /synthesizing: detailed information and recipes to make your own drug.
- Purchasing. It is possible to buy online a number of items: psychoactive plants seeds; tools to use and tools to grow or synthesize psychoactive compounds at home, cleansing products for drug testing. There are websites offering these kind of products (for example www.marijuana.it) and also indications for buying off line, i.e. addresses of specific smart shops. Moreover, people may purchase illicit psychoactive substances (for example marijuana) taking agreements by private e-mail.
- Legal issues: drug testing, ways to disguise drug control and institutional legal procedures for drug users.

It is interesting to notice that among all of the different categories of psychoactive substances discussed in the visited forums, cannabis has a special place, in the sense that there is a huge amount of information about it that is usually organized in specific forums dedicated to it.

A lot of space is also reserved for synthetic and herbal hallucinogenic drugs. Young people (under 20) seem to be using synthetic drugs of new generation (metamphetamine-like) while older people seem to look for similar experiences by taking LSD and/or mescaline.

Other substances that seem to be more and more used, probably because of their easy availability, are prescription drugs. From analysis of the forums' information, it seems that a lot of young people are used to mix up a number of different drugs, to enhance and modify the desired effects.

From a first qualitative analysis of the collected data it is clear how people use the internet forums to find and share information, suggestions and help about specific issues regarding the use and purchase of psychoactive substances.

It is also interesting to note that the discussions about the threats to personal health due to drug use are very few and limited to their short terms effects, while there is no information available about the danger of drug consumption in the long run.

Moreover, correct information is sometimes mixed up with misinformation, enhancing the risks related to drug use.

11.2.8 Drugs Forum

The “Drugs Forum” home page description quotes: “Drugs-forum wants to be a platform where people can freely discuss recreational drugs. There are sections for the most popular drugs: alcohol, speed, downers, chemical, herbal highs like salvia divinorum, ketamine, LSD, magic mushrooms, XTC, mescaline, heroin, crack and cocaine. Information is provided as is. Drugs-forum.com does NOT advocate the use of drugs for recreational purposes.”

There is also a disclaimer page stating: *“The content of www.drugs-forum.com is provided FOR INFORMATION ONLY. drugs-forum-Net is an informational resource. drugs-forum.com does not advocate (1) breaking any laws and (2) it does not advocate the use of illicit drugs, and in fact you are specifically urged not to do so. Neither the server maintainers nor any contributors can be held liable in any way for any information and/or data made available, or omitted, by the drugs-forum.com website or its hosted sites. We cannot guarantee the accuracy or completeness of any information. All material is supplied "as is" without warranty of quality or accuracy of any kind. The entire risk as to the quality and/or accuracy of the information on this server is with you. Should any such material, information, etc. prove to be inaccurate or in any way defective, you (and not the server maintainers, or any*

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The forum is divided into different subjects, for example: some for all; forum news; recovery and addiction; drug testing; drug related chemistry and extraction; law; sex; trip-reports; various substances already mentioned in the home page; Netherlands forum.

This forum is based in the Netherlands; the majority of members are from European countries, and the language used is English. Our understanding was that people posting in this forum are interested in sharing information on drugs, most of them are 20 to 40 years old and are active drug users.

No posts on online shops are allowed. Moderators check the posts daily, advising in case a post has been censored or moved to its own right place.

Some forums are open to guests, but the majority is accessible only after previous registration. The registration to become a member of Drugs Forum has the following rules:

“When you register you are required to give a small amount of information, much of which is optional, anything you do give must be considered as becoming public information.

You agree not to use this forum to post any material which is vulgar, defamatory, inaccurate, harassing, hateful, threatening, invading of others privacy, sexually oriented, or violates any laws. You also agree that you will not post any copyrighted material that is not owned by yourself or the owners of these forums.

You remain solely responsible for the content of your messages, and you agree to indemnify and hold harmless this forum and their agents with respect to any claim based upon any post you may make. We also reserve the right to reveal whatever information we know about you in the event of a complaint or legal action arising from any message posted by yourself.

Although messages posted are not the responsibility of this forum and we are not responsible for the content or accuracy of any of these messages, we reserve the right to delete any message for any or no reason whatsoever. If you do find any posts are objectionable then please contact the forum by e-mail.

The Federal Trade Commission's Children's Online Privacy Protection Act of 1998 (COPPA) requires that Web Sites are to obtain parental consent before collecting, using, or disclosing personal information from children under 13. If you are below 13 then you can NOT use this forum. Do NOT register if you are below the age of 13. By registering to use this forum you meet the above criteria and agree to abide by all of the above rules and policies.”

To register, the required information is as follows: a nickname, a personal password, the email address (where to receive an email necessary to activate the membership).

The member then chooses to show or hide his/her email address and receives a unique security code. Member can then give the following optional information:

Real name, country of origin, own webpage, ICQ number, AIM address, MSN messenger, Yahoo Messenger, occupation, interests, date of birth, own avatar, signature (shown at the bottom of each post).

Once registered, the member can log in and have access to nearly all the forums, except the ones limited to the moderators. The more frequently the member posts, the higher the level is reached. The first stage is called “newbie”, and the last one is “moderator”.

It appeared that this Forum was visited by a total of 6,535 members. Most frequently visited forums were:

- Cocaine: 3,893 posts
- Marijuana: 2,063 posts
- Amphetamines: 1,523 posts
- LSD: 1,054 posts
- Ecstasy: 976 posts.

11.2.9 Drugs Plaza

Drugs Plaza home page describes the website as: *“The place you will find everything you want to know about soft-drugs, like Marijuana, Magic Mushrooms and Herbal drugs. Drugs-Plaza tries to give you all the answers to your questions. You can also buy everything you need to use soft drugs. Things like pipes, bongs, rolling paper and*

machines are off course available in our Headshop. But you can also buy Herbal drugs.

We have got more then 100 links in our links section. All the links we place are checked by ourselves so we have only the best sites available for you.”

They also provide a disclaimer stating: “It is our goal to share information about different substances. We believe that sharing this information will increase the knowledge and awareness on the use and the abuse of these substances.

All information on this website is for educational purposes only and is not intended to condone or promote or incite the use of illegal or controlled substances.

All information on this website is not scientifically but comes out of personal experiences and therefor may not be accurate.

Drugs plaza's commitment to privacy

Drugs-plaza is committed to protecting the privacy of those using our site and the confidentiality of the personal information which our customers provide us with. We use the information we collect to ensure that requests are processed smoothly.

Your personal information is safe with DRUGS-PLAZA

Drugs-plaza will never share personal information with third parties unrelated to Drugs-plaza, associated companies or its affiliates. We appreciate the confidence you have in us and will make every effort to protect your personal information.

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This disclaimer is to be regarded as part of the internet publication which you were referred from. If sections or individual terms of this statement are not legal or correct, the content or validity of the other parts remain uninfluenced by this fact.”

The forum is divided into different subjects, for example: general board; news board; marijuana; mushrooms; other drugs; growing; drugs experiences.

This forum is based in the USA; the majority of members are from American countries, and the language used is English. Our understanding was that people posting in this forum are interested in showing their knowledge and experience on drugs. Most of them appeared to be younger than 20 years old and active drug users, very proud of being so young and already so experts. They love to send webcam pictures of themselves and of their drugs or home-made paraphernalia.

The contents are often not so serious, including jokes and rude contents, or personal experience not strictly connected to drugs. Posts about online shops are not allowed; moderators check the posts daily, in case locking or moving them to other forums. In case of locked posts it is not possible to reply any post, but it is still possible to read the post (and eventually an online shop URL).

Guests can read and post without registering; there is anyway the possibility of registering. The basic information required are as follows: username, email address and personal password. The prospective member can choose to hide the email address from the public and then needs to agree with the rules of the forum: *“You agree, through your use of this YaBB forum, that you will not post any material which is false, defamatory, inaccurate, abusive, vulgar, hateful, harassing, obscene, profane, sexually oriented, threatening, invasive of a person’s privacy, or otherwise in violation of ANY law. This is not only humorous, but legal actions can be taken against you. You also agree not to post any copyrighted material unless the copyright is owned by you or you have consent from the owner of the copyrighted material. Spam, flooding, advertisements, chain letters, pyramid schemes, and solicitations are also inappropriate to this YaBB forum”*. Note that it is impossible for us to confirm the validity of posts on this YaBB forum. Please remember that we do not actively monitor the posted messages and are not responsible for their content. We do not warrant the accuracy, completeness or usefulness of any information presented. The messages express the views of the author, not necessarily the views of this YaBB forum. Anyone who feels that a posted message is objectionable is encouraged to notify an administrator of this forum immediately. We have the rights to remove objectionable content, within a reasonable time frame, if we determine that removal is necessary. This is a manual process, however, so please realize that we may not be

able to remove or edit particular messages immediately. This policy goes for member profile information as well. You remain solely responsible for the content of your messages, and you agree to indemnify and hold harmless this forum, and any related websites to this forum. We at this YaBB forum also reserve the right to reveal your identity (or any information we have about you) in the event of a complaint or legal action arising from any information posted by you. You have the ability, as you register, to choose your username. We advise that you keep the name appropriate. With this user account you are about to register, you agree to never give your password out to another member, for your protection and for validity reasons. You also agree to NEVER use another member's account to post messages or browse this forum. After you register and log into this YaBB forum, you can fill out a detailed profile. It is your responsibility to present clean and accurate information. Any information we deem inaccurate or vulgar will be removed. Please note that with each post, your IP address is recorded, in the event that you need to be banned from this YaBB forum or your ISP contacted. This will only happen in the event of a major violation of this agreement. Also note that the software places a cookie, a text file containing bits of information (such as your username and password), in your browsers cache. This is ONLY used to keep you logged in/out. The software does not collect or send any other form of information to your computer.”

After the member agrees with the rules, it is possible to add personal information in the profile, similarly to what happens with the Drugs Forum. New members are called “new junkies”; higher levels are “dealers”, “drug legends”, “moderators” and “global moderators”.

At the time of the survey, there were 1,019 members in total and a total of 119,006 posts. Most visited forums were:

Marijuana: 2,070 posts

Marijuana experiences: 1,376 posts

Other drugs: 1,331 posts.

11.2.9.1 General considerations of the « DrugsPlaza » and the « Drugs Forum »

Drugs Plaza is more visited than Drugs Forum, the rules are less strict and the posts' subjects more various. Drugs Plaza is more entertaining than Drugs Forum, which gives more punctual information taken from Internet drug-related websites. Drugs Forum is about all drugs, while Drugs Plaza is only about “light” drugs such as marijuana, mushrooms and herbal highs, even if there is a forum dedicated to other drugs.

Community is stronger in Drugs Plaza, where the teenagers are more interested in knowing each other and sending photos. They speak a lot about their parents, their schools and their legal problems. They explain how to hide drugs in the house, how to smoke at school without getting caught, how to create their homemade paraphernalia. Drugs Forum members are experienced users and some of them are interested in how to synthesize synthetic drugs, which means they have the knowledge and possibilities to do it. The Drugs Forum community is apparently smaller; their only interest is drugs.

Drugs Plaza has a shop where to buy paraphernalia and herbal highs, so that it can be considered a pro drug website. Drugs Forum can be considered a harm reduction website, even if the disclaimers of the two websites are quite similar.

Both websites report lots of posts containing links to funny or drug-related websites.

Through these links, it is easy to find other drug-related websites; sometimes there are also links to online shops or warning about fake online shops.

Checking a forum requires a regular update; once a week is enough to keep the pace with the new posts. It is difficult to distinguish between new and old posts, because when a new reply is added, the post comes first in the list, even if it has been started months before. For this reason, it often happens to check the same posts; a way to recognise already checked posts could be helpful.

Forums are a never-ending source of information on new drugs, new trends and new ways of administering drugs'. It is helpful in understanding the target reached by Internet drug-related websites.

A more active participation in the forum discussion could lead to faster information retrieval.

11.3 Conclusions

Online forums provide a unique source of information about drug use and availability. They provide some information which is directly from users and that is likely to be unavailable via other research methods. In fact, users may be less forthcoming in surveys or interviews. On the other hand, it is a time-intensive job, requiring the attention to a great many internet discussions to glean rare pearls of valuable information.

The forum phase has produced very interesting results regarding the use, manufacture, synthesis, sales and acquisition of drugs.

However, when looking at the forum content database it seems that there is massive body of information that for the most part consists of isolated pieces of information lacking proper explanation and reference. For example, there are many records consisting of isolated remarks on dosage of prescription drugs or basics for growing

cannabis. There are also records that tell you there is some interesting information somewhere about drug synthesis etc. – but do not state that information or even give you a link to it. At worst you will find a record that states a question about growing cannabis – not very interesting in itself – without any kind of answer or a link reference.

In any case, clearing the database of useless fragments is a necessity. After this, a much better picture may be obtained of what the research group has accomplished.

Overall, the results from this forum investigation have fulfilled our expectation that the Internet provides a very dynamic picture of highly relevant information on emerging drug consumption patterns and substances. The use of psychoactive plants and combined use of prescription drugs with “club drugs” constitute the most significant trends at this time. The implications of the latter on the health care system must be emphasized and clearly show the need for an Internet-based early warning system.

12 Early Warning System

The ultimate goal of the Psychonaut 2002 project was the build up of an Early Warning System, e.g. a database containing detailed information of new trends and new compounds, to be made accessible to professionals worldwide.

The database developed stores information on the issues reported in table 21 (below).

The online database is operational and the information collected is currently undergoing further revisions (table 22) and it should be updated regularly in the

future. The database is password protected and access could be granted to institutions and professionals worldwide.

Table 21 – Categories in the new drugs database (EWS)

	Category	Description
1	Brief description	
2	Substances name:	
2	Chemical name:	
3	Chemical formula:	
4	Street name/s:	
5	Category:	Synthetic/herbal/other
6	Submitted by:	
	Source description	
7	Where found:	
9	Date:	
10	More info:	Forum database/websites database
11	ID number:	(of record with more information)
12	Substance description	
13	Description:	
14	How to use:	
15	Effects:	
16	Side effects:	
17	After effects:	
17	Diffusion:	
17	Legal status:	
17	Scientific literature quoted:	Yes/no
17	Synthesize/grow	Yes/no
17	Disclaimer	Yes/no
17	How to synthesize/grow:	
17	General comments:	

Table 22 - List of new compounds found in Websites and Forums

Substance	Chemical Name	Streetname	Category
Benzedrex	propylhexedrine	Not known	Synthetic
Skelaxin	metaxalone	Not known	Synthetic
Philosopher's Stone	Psilocybe Tampanensis	Philosopher's Stone, Truffle.	Herbal
Candyflip	NOT KNOWN	candyflip	Synthetic
Sperminphosphat	Not known	Not known	Synthetic
Acetominophen	acetaminophen	Tylenol	Synthetic
AM-DIPT	Alpha-Methyl-DIPT	Not known	Synthetic
DXO	Not known	Dextrorphan	Synthetic
5-MeO-MIPT	N-isopropyl-5-methoxy-N-methyl-tryptamine	Not known	Synthetic
California Poppy	NOT KNOWN	Not known	Herbal
IAP	IndanylAminoPropane	Not Known	Synthetic
4-Acetoxy-DiPT	Not known	4 Ace, Aces, Iprocetyl	Synthetic
Sceletium tortuosum	NOT KNOWN	Not known	Herbal

Nootka Lupine	NOT KNOWN	Sundial, Quakeris bonnet	Herbal
Anadenanthera colubrina	NOT KNOWN	Yopo, Cohoba, Vilca	Herbal
2C-T-4	2,5-DIMETHOXY-4-(i)- PROPYLTHIOPHENETHYLAMINE	Not known	Synthetic
Calea zacatechichi	NOT KNOWN	Dream herb, Leaf of God, bitter leaf	Herbal
Galangal	NOT KNOWN	Galanga root, Maraba	Herbal
Kratom	9-methoxy-corynantheidine	Ketum	Herbal
Diplopterys cabrerana	NOT KNOWN	Chaliponga, Chagropanga, oco-yagĔ, pucahuasca, Huambisca	Herbal
Lady's Slipper	NOT KNOWN	Nerve root, American valerian, bleeding heart, moccasin flower, monkey flower	Herbal
Cytisus scoparius	CYSC4	Scotch Broom, Broom Tops, Irish Tops, Basam, Bisom, Bizzom, Browme, Brum, Breeam, Green Broom	Herbal
Methylone	2-methylamino-1-(3,4- methylenedioxyphenyl)propan-1-one	MDMCAT	Synthetic
2C-N	2,5-DIMETHOXY-4- NITROPHENETHYLAMINE	Not known	Synthetic
4-Acetoxy-MiPT	NOT KNOWN	Not known	Synthetic
4-Ho-DiPT	4-Hydroxy-N,N-diisopropyltryptamine	Iprocin	Synthetic
Psychotria viridis	NOT KNOWN	Rubiaceae, Chacruna	Herbal
5-MeO-DiPT	N,N-Diisopropyl-5-methoxytryptamine	Foxy Methoxy	Synthetic
Brunfelsia	NOT KNOWN	Manaca Root	Herbal
Desmanthus illinoensis	NOT KNOWN	bundle flower, Illinois bundleflower, Illinois bundle weed, prairie mimosa, pezhe gasatho (rattle plant), atikatsatsiks (spider-bean), kitsitsaris (bad plant), narrowpod bundle flower (leptolobus)	Herbal
MIPT	NOT KNOWN	NOT KNOWN	Synthetic
MDPR	3,4-methylenedioxy-N- propylamphetamine	NOT KNOWN	Synthetic

Heimia salicifolia	NOT KNOWN	Sinicuichi	Herbal
Leonurus sibiricus	NOT KNOWN	Marihuanilla, Chinese Motherwort, honeyweed, Siberian motherwort	Herbal
Mellow Yellow	NOT KNOWN	NOT KNOWN	Herbal
Wild Dagga	NOT KNOWN	Lion's Tail, Leonotis leonurus	Herbal
Black Kiff ShemHampHorash	NOT KNOWN	NOT KNOWN	Herbal
Scutellaria lateriflora	NOT KNOWN	blue pimpernel, blue skullcap, mad-dog skullcap, mad- dog weed, Virginian Scullcap	Herbal
Hawaiian Baby Woodrose	NOT KNOWN	Elephant Creeper, Wooly Morning Glory	Herbal
Damiana herb	NOT KNOWN	Damiana, damiane, oreganillo, the bourrique, Mexican damiana, Mexican holly, damiana de Guerrero	Herbal
Kolanut powder	NOT KNOWN	NOT KNOWN	Herbal
Mexican Tarragon	NOT KNOWN	Yauhtli, Sweet Marigold, pericÛn plant	Herbal
4-HO-DET	4-Hydroxy-N,N-diethyltrptamin	NOT KNOWN	Synthetic
Lagochilus inebrians	NOT KNOWN	Turkistan Mint, Inebriating Mint, Intoxicating Mint	Herbal
Aztec Golden Trance Mix	NOT KNOWN	NOT KNOWN	Herbal
Selaginella lepidophylla	NOT KNOWN	Resurrection Plant, Doradilla, Flor de peÒa, Flor de piedra, MagÛra (tarahumara), Much-kÛok, Siempreviva	Herbal
Nymphaea caerulea	NOT KNOWN	Blue lotus, Egyptian Lotus, Blue Water Lily, Sacred Narcotic Lily of the Nile	Herbal
Tagetes Lucida	NOT KNOWN	Aztec Tarragon, PericÛn	Herbal
MiAmora	NOT KNOWN	NOT KNOWN	Herbal
berzerker	NOT KNOWN	bazuco	Synthetic

Tuinol	NOT KNOWN	NOT KNOWN	Synthetic
Khala-Khij	NOT KNOWN	NOT KNOWN	
Kryptonite	NOT KNOWN	NOT KNOWN	Synthetic
Trichocereus Peruvianus	NOT KNOWN	NOT KNOWN	Herbal
Trichocereus Pachanoi	NOT KNOWN	SAN PEDRO	Herbal
Lophophora diffusa	NOT KNOWN	NOT KNOWN	Herbal
Anadenanthera peregrina	NOT KNOWN	Cebil, Vilca, Yopo, Huilca, Angico preto, Curupay	Herbal
5-MeO-AMT	5-methoxy-alpha-methyltryptamine	Alpha O, alpha, O-DMS	Synthetic
2C-E	2,5-dimethoxy-4-ethylphenethylamine	NOT KNOWN	Synthetic
4-Mar	Trans-4-methylaminorex	4-Mar, ice	Synthetic
Canary grass (Phalaris arundinacea)	NOT KNOWN	NOT KNOWN	Herbal
Ergotine	NOT KNOWN	ergot /ergot powder	Synthetic
Sida Cordifolia	NOT KNOWN	Country Mallow, Bala, Bariar, Batyalaka, Beejband, Bijband, Brela, Chikana, Chiribenda, Chitimutti, Hettuti-gida, Janglimethi, Kharenti, Khareti, Kisangi, Kungyi, Mayirmanikham, Muttuva, Paniyar-tutti, Simak, Tupkaria, Tutturabenda, Velluram	Herbal
Hoodia Gordonii	NOT KNOWN	NOT KNOWN	Herbal
THG*			
2C-E	2,5-dimethoxy-4-ethylphenethylamine	2C-E	Synthetic
Benzonatate	2,5,8,11,14,17,20, 23,26-nonaoxaocacosan-28-yl-p-(butylamino) benzoate	NOT KNOWN	Synthetic
Hawaiian Baby Woodrose seeds	NOT KNOWN	HBWS	Herbal
5-meo-AMT	5-methoxy-alpha-methyltryptamine	NOT KNOWN	Synthetic
5-meo-dalt	5-methoxy-diallyltryptamine	NOT KNOWN	Synthetic
2C-T-21	4-2-fluoroethylthio-2,5-dimethoxyphenethylamine	NOT KNOWN	Synthetic
duramine	Phenteramine	NOT KNOWN	Synthetic
duramine	Phenteramine	NOT KNOWN	Synthetic
2C-T-17	2,5-dimethoxy-4-(s)-butylthiophenethylamine	Nimitz	Synthetic
Boletus Manicus Heim	Family:Boletaceae; Order: Agaricales; Class: Basidiomycetes.	NOT KNOWN	Herbal
Peganum harmala (Syrian rue)	NOT KNOWN	NOT KNOWN	Herbal

4-OH-DIPT	4-Acetoxy-DIPT	NOT KNOWN	Synthetic
2C-T-13	4-2-methoxyethylthio-2,5-dimethoxyphenethylamine	NOT KNOWN	Synthetic
Budder	NOT KNOWN	NOT KNOWN	Herbal
Tetrahydropalmatine (THP)	NOT KNOWN	THP, Corydalis, Rotundine, Caseanine, Hyndarine	Herbal
4-HO-DET (4-Acetoxy-DET)	4-Acetoxy-DET	4-HO-DET, Ethocin	Synthetic
2C-D	2,5-dimethoxy-4-methyl-phenethylamine	NOT KNOWN	Synthetic
2C-P	2,5-DIMETHOXY-4-(n)-PROPYLPHENETHYLAMINE	NOT KNOWN	Synthetic
Piptadenia peregrina	NOT KNOWN	parica, yupo, cebil, coboba, cohoba, cojoba, curupa, hataj, kurupa, kurupayara, niopo, nupa, Òopo, vilca, yupa.	Herbal
Puffball mushrooms	NOT KNOWN	NOT KNOWN	Herbal
4-Fluoroamphetamine	4-fluoro alpha-methylphenethylamine	4-FMP, 4-FA	Synthetic
Adrenochrome	Adrenochrome is an o-quinone	NOT KNOWN	
HashPlant SSB	NOT KNOWN	NOT KNOWN	Herbal
Propylhuasca	NOT KNOWN	NOT KNOWN	
Norbolethone	NOT KNOWN	NOT KNOWN	
*THG stands for Tetrahydrogestrinone. It's a substance which was used by athletes analogous to anabolic steroids and was regarded as a nutritional supplement. Due to its effects and its importance in the athletic realm it is regarded by the U.S. federal authorities as an illegal doping substance now.			

In creating a full report on these new drugs (compounds), it is important to note that only in a few cases official (scientific) information was available. Consequently, a number of Google searches were performed to find information. An important source of information was given by the Alexander and Ann Shulgin's texts in "Pihkal" and "Tihkal". Drug archives such as Erowid and Lycaenum were used as a reference as well.

12.1 New substances

In this study, new drugs were defined by their popularity on PubMed library (<http://www.ncbi.nlm.nih.gov/PubMed/>). If no scientific articles were found reporting

misuse of the index substance then the compound was considered new. In this way, 92 novel compounds were identified and their characteristics recorded into the appropriate 'EWS' database. Records of new drugs included an overall description of the substance, dosage, and user experiences. In some occasions, there was only limited information available; the information was summarized and translated into English when necessary. Links to the original source of information were attached. Most of the recorded *synthetic drugs* are constituted by a number of different psychedelic tryptamines (4-HO-DET, 4-OH-DIPT, 5-MeO-AMT, 5-MeO-DALT, 5-MeO-DMT) and phenethylamines (2C-D, 2C-E, 2C-P) synthesized by Alexander Shulgin and allegedly sold by online stores for supposed research purposes.

Common desired effects of these compounds include both visual and auditory hallucinations, euphoria and mental and physical stimulation. Common side effects include nausea, vomiting, insomnia and anxiety. The effects of these chemicals are reported to be psychological to a large extent and to vary substantially from person to person. The appropriate dosage is usually between 5-30 mg. The effects are often delayed and gradual, which can easily lead to overdoses. There are few reports of fatal overdose, especially with 5-MeO-AMT.

All recorded research chemicals are diffused in the form of powder, crystals, liquid or capsules. They are most usually eaten, snorted or in some rare cases used intravenously. Other forms of ingestion than eating increases the health risks exponentially.

Most of the recorded *herbal* drugs (such as Boletus Manicus Heim, Canary grass, Peganum Harmala, Piptadenia Peregrina, Puffball mushrooms etc) naturally grow in different parts of the world, and therefore can be easily utilized for psychoactive purposes. However, using these plants and fungi as psychoactive drugs requires some knowledge and skills. Peganum Harmala is not psychoactive in itself, but it boosts the effects of any tryptamine containing hallucinogen considerably. Together with DMT (found for example in Psilocybe Semilanceata mushrooms) it creates Ayahuasca, a potent hallucinogenic drink. More easily, these products can be purchased from several online shops.

Some of the recorded herbal drugs contain the same chemical compound than the synthetic ones. For example, 5-MeO-DMT occurs naturally in Piptadenia peregrina seeds. Recorded herbal drugs are diffused in the form of dried plants and mushrooms, seeds and extract. They are used by eating, smoking or as snuff.

Tetrahydropalmatine (THP) is a component found in Chinese herbal/patent medicine. It is a potent sedative that produces opiate-like effects. THP is widely sold in the Internet. There are reports of abuse and overdoses.

12.1.1 Special study of a novel compound : 4-OH-DIPT (4-Acetoxy-DiPT)

4-OH-DIPT (4-Acetoxy-DiPT) is a tryptamine whose effects have been compared to both 2C-B and mushrooms.

4-Acetoxy-DiPT is found as a slightly off-white powder and is usually taken orally. 4-Acetoxy-DiPT can be found in both HCl salt form and as a freebase. Both of these

forms are orally active with the freebase being about 10% lighter and therefore 10% more potent than the HCL form (ie 20mg HCl = ~18 mg freebase).

4-Hydroxy-DiPT (4-OH-DiPT) is a very similar chemical which has slightly lower dosages. Pharmacological characteristics:

Dosage: 3-5mg (low effects) to 25-40mg (strong effects)

Duration : 2 - 4 hours

Normal After Effects : 1 - 4 hours

Experience (with 25mg orally): *‘...It was beyond expectations. I now understand people used the word lush to describe the experience. I was expecting something along the lines of MDMA, and I was pleasantly surprised to notice the entheogenic consciousness oozing out of the cracks in the fabric of reality. I became more aware of how long I'd put my 'spiritual mission' aside for lack of time. I really needed this, true soul searching stuff. And sitting here writing this now a peaceful sensation of understanding flows through me. The entheogenic essence that flows deeply in this material. Everyone could do with a little of this stuff to help them find themselves in this increasingly confusing reality....’*

(http://www.erowid.org/chemicals/4_acetoxy_dipt/4_acetoxy_dipt_primer.shtml)

12.2 Conclusions

During the project, almost 100 new compounds have been identified. One of the problems identified in using this approach, however, was given by the fact that even if no articles on the (recreational) misuse of a specific substance were found on the Medline, it is still possible (albeit unlikely) that some information on the identified novel compounds is given in academic books. On the other hand, most of the professionals throughout the world check first and foremost the classical scientific peer-reviewed literature to get a fast and reliable answer to their clinical needs.

The records of new drugs in the EWS database were largely based on collective peer-to-peer knowledge found on the Internet, which can be seen both as a strength but also as a weakness, because information we collected was, per definition, not peer-reviewed.

13 Dissemination of activities

13.1 Local, National and International Conferences

- Schifano, F. (2004). Disturbi Psichiatrici e nuove sostanze d' abuso. Paper presented at the conference: "Psicobiologia del comportamento", 12th -13th November, Cesena, Italy
- Deluca, P. (2004). Psychonaut 2002 Project: Methodological considerations. Paper presented at the Journal Club of the Department of Mental Health, St. George's Hospital Medical School, University of London, 12th October, London – United Kingdom.
- Deluca, P., & Schifano, F. (2004). The Psychonaut2002 Project: Methodological Aspects. Paper presented at the 47th Annual ICAA International Conference "Visions for the Future: Empowerment, Integration, Interaction". November 1st – 5th 2004, Venice – Italy.
- Deluca, P., & Agosti, L. (2004). Internet as a resource for drugs information. Paper presented at the EMCDDA's Reitox Academy "Analysis, interpretation and reporting of drug-related data" April 27th-30th, Lisbon – Portugal.
- Deluca, P. (2004). Let's play! games, quizzes, tutorials, online multimedia tools and drug addiction. Paper presented at the Journal Club of the Department of Mental Health, St. George's Hospital Medical School, University of London, 9th March, London – United Kingdom.
- Agosti, L. (2004). "Blue mystic": 2C-T-7 on the web: Research on MDMA like drugs from the Psychonaut 2002 project. Paper presented at the Journal Club of the Department of Mental Health, St. George's Hospital Medical School, University of London, 17th February, London – United Kingdom.
- Deluca, P., & Schifano, F. (2004). The Psychonaut 2002 Project: Ketamine on the web. Paper presented at the ACMD Ketamine Group Meeting, January 27th, London – United Kingdom
- Deluca, P. & Schifano, F. (2003). The Quest for Drugs: New Tools, Old Habit. Paper presented at the PrevNet conference. October 23rd – 25th 2003, Dublin – Ireland
- Deluca, P. (2003). The Quest for Drugs: New Tools, Old Habit. Paper presented at the Journal Club of the Department of Mental Health, St. George's Hospital Medical School, University of London, 14th October, London – United Kingdom.
- Schifano, F. (2003). New channels of information (Internet) and drug use. Paper presented at the EMCDDA conference "Drug use among young people".

October 30th – 31st 2003, Malaga - Spain

Schifano, F., Leoni, M., Deluca, P., & Rovetto, F. (2003). Surfing the net whilst wandering around for drugs: The Psychonaut 2002 Project preliminary results. Paper presented at the EABA conference. July 22nd – 25th 2003, Parma – Italy

Schifano, F., Leoni, M., Rawaf S., Rovetto F., Ghodse A.H. (2003). Psychonaut 2002: The Importance of the Virtual Market and the Modification of Drug Scenarios. Paper presented at the CyberTherapy 2003 conference, January 19th-21st, San Diego, California - USA

13.2 Journal articles:

13.2.1 Articles in preparation

Deluca, P., Schifano, F. and the Psychonaut2002 research group (in preparation). The Quest for Drugs, Old Habit New Tools: Searching the Internet for drug related websites.

13.2.2 Articles submitted

Schifano, F., Deluca, P. and the Psychonaut2002 research group (submitted). Drugs on the web; the Psychonaut 2002 EU project. *American Journal of Psychiatry*

Schifano, F., Deluca, P., Agosti, L., Martinotti, G., and the Psychonaut 2002 research group (submitted). Hallucinogenic phenethylamines on the web; the case of 2C-T-7 (“Blue Mystic”). *Journal of Psychopharmacology*

Schifano, F., Deluca, P., and Baldacchino, A. (submitted). Online prescription drugs’ availability; the case of dextropropoxyphene. *CyberPsychology and Behavior*

13.2.3 Articles accepted for publication

Littlejohn, C., Baldacchino, A., Deluca, P., & Schifano, F. (in press) Internet pharmacies and online prescription drug sales: a cross-sectional study *Drugs: Education, Prevention & Policy*

13.3 Reports

Aside the 11 substances we were studying in this project we have also produced specific reports on the following:

13.3.1 Dextropropoxyphene/Darvon

See annexed document

13.3.2 Ketamine

See annexed document

13.3.3 2C-T-7

See annexed document

13.4 Literature:

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- National Center on Addiction and Substance Abuse at Columbia University. "You've Got Drugs!"
- Prescription Drug Pushers on the Internet. A CASA White Paper, 2004. Accessed on 18th November 2004 at:
http://www.casacolumbia.org/pdshopprov/files/you_ve_got_drugs.pdf
- Peltoniemi T. New information society and the stress: Finnish and international perspectives. ICAA 47th International Conference Proceedings, October 31st - November 5th, 2004 Venice, Italy
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Zeitgeist, 2004. Accessed on November 18, 2004 at:

<http://www.google.com/press/zeitgeist/zeitgeist-jun04.html>

14 The Psychonaut 2002 Website:

An Internet domain name for the project was bought: <http://www.psychonaut2002.org>

This URL links to the St. George's Hospital Medical School server, University of London, where the web pages and databases are hosted. The site is divided in two sections. One section will be made public (i.e. open to all internet users), whilst the other one (which allows access to the full database) has a restricted access. The first one provide generic information about the project, the partners involved, their contacts, aims, and latest publications. The restricted part is being regularly accessed by partners and is being used to implement the records into the database.

15 Logo:

A logo was created by the London site Psychonaut researcher (dr. Paolo Deluca). It should be used in all the official documents.



16 Future developments

We have also identified several areas of future development. These include evaluating of new issues on the web: Online Gambling and Alcohol Promotion. Moreover, an assessment of Cyrillic web pages will be carried out, in collaboration with the “Vassil” Foundation (Bulgaria).

16.1 National developments

The German group is in contact with the German Federal Ministry of Health and Social Security (Bundesministerium für Gesundheit und soziale Sicherung) requesting further funding for the establishment of an Internet-based early warning system. The Ministry is interested in this as it is a main topic on the agenda of the German federal plan to combat the drug problem. It is currently unclear whether the project will be financed.

16.2 Partnership

Further partnerships and collaborations would be established with new members of the Psychonaut network. These would include: the USA (University of Pennsylvania); Cyprus (National Focal Point), Czech Republic (National Institute of Public Health), Norway (Bergen Clinic), and Lithuania (National Focal Point).

17 Expressions of Interest for the Psychonaut 2002 project:

Several government agencies have shown an interest in the Psychonaut work and we have already been commissioned a specific report on dextropropoxyphene and / or co-proxamol from the Patient Safety, Renewals and Reclassifications, Post-licensing Division, MHRA – UK on joint request from Pharmacovigilance of the European Commission (see attachment 1).

In the UK, we have also been approached by the National Criminal Intelligence Service and Drugs, the Medicines Control Agency of the Ministry of Health, and the Alcohol Research Unit of the Home Office for possible collaborations.

18 Difficulties encountered:

During this first year the majority of the problems encountered were related to the web mapping phase. With the exception of Portugal, all partners were able to start on time. In Portugal, the changed political situation with the election held in May 2003 and some consequent restructuring of the National Health System had affected their ability to promptly employ a research worker and start the web mapping on time.

The process of mapping itself has raised a number of problems from all the partners.

Most notably, we have found that every mapping has a time span that has been difficult to reduce even on the sites of little or no relevance. For example, some of the

recurring University sites, that rarely offer the kind of new information we were looking for, often took up to 60 minutes to assessing and mapping, depending on the complexity of the site.

Regarding the psychoactive substance information domains, the main hindrance has been given by the issue of vastness. The amount of information that needs to be gathered on individual psychoactive plants alone is often enormous and requires much time and dedication.

Many sites found, especially the political and ‘spiritual’ ones, have been generally unprofessional in respect to the web design. This has created difficulties in finding even the simplest of information. The main issues are normally given by lack of a site map; lack of search engines; lack of postal or e-mail address; complex and confusing layout or just slow download.

Overall, the rigidity of a scientific approach to analyze the web has been questioned. In particular, one can think that fixed keyword set during the “snap shot” may not be informative enough. Obviously this choice was made to reduce and control the number of pages to be visited, but on the other hand it might affect the ability of a researcher of finding valuable information on different sites and discard those that are not relevant. Similarly, the random number approach may overlook some important websites for those less relevant. Consequently, the researchers should be allowed to decide to disregard some obviously unimportant pages and modify the set of search terms used after having achieved a sufficient understanding of the types and variety of sites.

The database has raised some difficulties as well. It was designed for collecting relevant information on all the substances but some websites do not provide all the information that the protocol needs. Moreover, it was often required to enter the same

website twice and this was due to the fact that search engines provide a list of sites with many redundancies.

Finally, there is a wealth of information available online that should be included within the psychonaut remit. In order to reach this we would suggest that, because the category “prescription drugs” , as we have identified it, contains a multitude of substances that can potentially be abused, each abusable prescription drug should become the focus of a psychonaut search in its own right.

19 Acknowledgment

The conclusion and interpretation of the findings of this study reflects the authors' views and the Commission is not liable for any use that may be made of the information contained in this report.

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