

Importance of Cyberspace for the Assessment of the Drug Abuse Market: Preliminary Results from the Psychonaut 2002 Project

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ABSTRACT

What do therapy and cybertherapy need to take into account to be effective for the treatment of drug-related disorders? The Psychonaut 2002 project is aimed to create a new and updated Web-based tool, which will be based on evolving drug scenarios, in order to provide professionals from the drug addiction field with easily accessible and reliable information. The drug abuse settings available on the Web will be described and the methodology will be discussed. Preliminary results of a search on MDMA and MDMA-like substances confirm that it is possible both to identify emerging trends and to provide information for prevention and appropriate intervention.

INTRODUCTION

ALL PSYCHOLOGICAL INTERVENTION and therapy should be primarily based on the definition of the "problem" and on the description of those variables that are creating and maintaining the dysfunctional situation. Cybertherapy is supposed to be based on the same principles. As a consequence, we must be equipped with a reliable corpus of knowledge with respect to the characteristics and the modifications of drug scenarios, in order to improve and implement those cyber tools and techniques which may be used for the treatment of drug-related disorders.¹

It is well known that drug dependency and addictive behaviour are probably the most changeable disorders in psychology.² Moreover, particularly because of the rapid and powerful development of Internet communication,³ a part of the drug scene has moved into the so-called "virtual" world, although

its consequences are affecting many aspects of "real" society. As a result, professionals are forced to run after drug trends, as they cannot achieve prevention but just try to stem the damage. If psychological attempts in the drug field remain founded on outworn information, the science of prediction and control will never rise.⁴ The present project was designed in order to offer a more reliable information source, always responsive to changes in drug-related trends.

Different issues can be taken into account when interpreting this "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 the school
- b. The development of a "dot-com generation."⁵

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- c. The easy access to the information and the huge variety of the offers (hundreds of Web sites selling and advocating the use of drugs; the new power of the Web as a media)
- d. The availability of information but also of misinformation with respect to the illicit drugs
- e. The evident targeting of youngsters (who are the more likely to possess the highest level of IT skills)

This 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 drugs that can be snorted, inhaled, or ingested are preferred. Consumers are looking for drugs that show significant excitatory and psychedelic properties, compounds that can be of use in clubs and in raves (so that the consumers can be "awake" and "always on the edge").

On the other hand, the drug "trade" has evolved in its structure as well. There are three main levels of the drug market, at the moment. First, we have the classic "structured hierarchy" market, where the (usually hard) drugs are sold within a close system and the dealing/trafficking is maintained through threat and/or violence. At this level, the communication is facilitated mainly by mobile phones. At a second level, we observe a sort of a "free" market: a fragmented system where dealers act (apparently) more independently from the strong criminal organizations. This is the synthetic drugs market. The third generation of the drug market, which is increasing exponentially, is given by the "e-commerce" market, which takes advantage mainly of the internet facilities. A wide range of compounds are potentially bought through this new market: cannabis seeds, a number of medicinal products without any prescription, performance-enhancing hormones, ecstasy, magic mushrooms, and mescaline. A rising number of sites on the WorldWideWeb are in fact, in one way or another, advocating the use of different drugs. On top of that, the precise instructions (the "recipes") to synthesise illicit products are available to everybody. Interestingly enough, the internet is at the moment one of the major ways for the dissemination of a new class of drugs: the so-called "ecological drugs" (i.e., herbs and plants derivatives ranked and sold as stimulants, sedatives and psychedelics). As said, users can buy illicit/recreational compounds by using a simple credit card. A Webpage, as an example of one of these sites (www.sjamaan.com/), is shown in Figure 1.

On this site, the "customer" has access to a wide number of substances. Detailed (nonscientific) information is given for each item (including chemical properties, dosage, effects, ingredients, warnings, and contents).

With the emergence of e-commerce as a new type of market for drugs, socio-cultural activity has moved on the virtual field too. In some ways, Web browsing has become a sort of social system, by assembling people with similar interests and habits.⁶ In the case of drug topics, the virtual world has been progressively surrogating all those activities typical of addiction field, and cyberspace, as a special kind of container, tends to rarefy the structural and process features of communication.⁷ And because the environment is an active part of social behaviour and communication, many of the aspects of the drug frame has been modified when shaped to virtual activity. As a consequence, specific characteristics of cyber tools and cyber "laws" are essential to understanding new emerging drug trends and conducts. The lack of both professional attention and scientific information on these issues is surprising indeed, since it is well-known that the IT skills level of children and adolescents can be quite high. For example, in the case of ecstasy, it has been suggested that 90–92% of the population of users are just experimenting with this substance (i.e., they are not problematic users⁸). However, one could think that this population might be directly or indirectly influenced by Web messages (e.g., advertisements, banners, and newsgroup).

The EMCDDA (European Monitoring Centre for Drugs and Drug Addiction) has implemented an "early warning system" which relies on what is actually seized in the European illicit markets. However, (a) those drugs which were seized are, per definition, those drugs which will never be taken by consumers; (b) the system does not take into account the possible suggestions and trends coming from emerging markets (e-commerce) (in the U.K. at least 3 million people under the age of 50 are usually accessing the Web to buy items of a different nature^{9,10}); (c) the "early warning system" is not immediately available through the Web, nor is automatically received by all of the different Drug Treatment Units professionals of the EU; (d) the role of the enforcement European agencies has not been extensively focussed (as far as we know), on the Web, but on the actual, "real" (i.e., nonvirtual) market.

To the best of our knowledge, no mapping of the Web with regard to drug-related issues is available at the moment.

As a result of the described situation, there is the following:

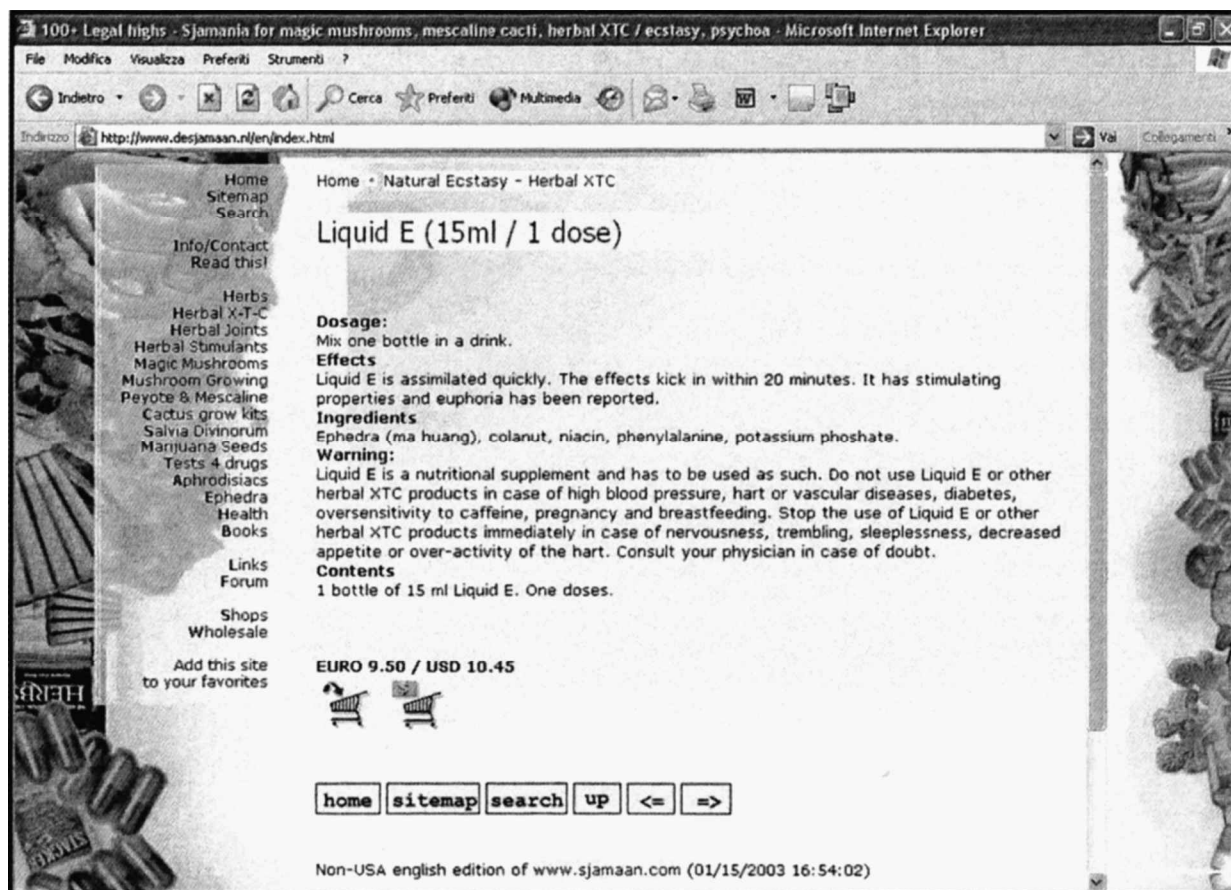


FIG. 1. Example of dissemination of the new "ecological drugs." One of the various item offered on this site (i.e., liquid ecstasy) is described and ready to be purchased with a normal credit card.

- lack of professional attention to drug related issues in the cyberspace
- A lack of reliable and scientific information on the web
- An exclusive focus on the actual, "real", market by drug enforcement agencies, and a consequent lack of attention to the "virtual" market

The Psychonaut 2002 project, which has started on October 1st, 2002, has been designed and proposed to the European Commission, Public Health Directorate, which has agreed to finance the research for 2 years. This project is carried out through the active collaboration of 11 European Countries: U.K., Italy, Germany, Portugal, Spain, France, Belgium, Malta, Finland, Denmark, and Scotland.

The "Psychonaut 2002" project principal aim is to create and develop a new Web-based tool, which will be continuously updated with respect to the evolving drug scenarios, in order to provide professionals from the drug addiction field with easily accessible and reliable information. More in particular, we want the following:

- To foster collection and analysis of data from Webpages related to recreational/illicit psychopharmacological substances
- To start/implement an "early reaction system" (through the data/information collected from the Web virtual market) in relation to public health threats linked to drugs (especially new/synthetic drugs) at a European, national and regional level
- To provide the professionals from the different European countries involved in the project with easily accessible and reliable evaluation and assessment of the material. As a consequence, it will be possible to identify new, emerging trends, and to provide information for prevention and immediate intervention.

MATERIALS AND METHODS

Before the real start of the project, three pilot trials have been carried out. In one of these trials (performed in the University of Parma, Italy) 50 webpages have been randomly extracted from a set of

1,000 pages, which were the results of a search with Google (the query was made only using the "drug abuse" keywords). From this trial, it clearly appeared that the coverage given only by the use of search engines is not exhaustive enough for the purpose of the present study. To this respect, it can be emphasized that Google lists, amongst the others, PDF and RTF documents, but also pages which constitute only a small portion of a site. Conceivably, when extracted, these pages can lose part of their original meaning. In this way, the percentage of web pages which are really useful for the project decreases enormously. Is this the result of something which has to do with the (possibly biased) methodology of a specific search engine? In 1999,^{11,12} it was found that the best 10 search engines were able to cover between 2% and 16% of the estimated amount of Web pages (Table 1).

Obviously, both Web pages and search engines change and grow. But it is difficult to think that a search engine can cover more than 35% of the real amount of existing Web pages. As a consequence, we can state that a completely exhaustive Web mapping on drug-related issues cannot be realized.

Trained software (e.g., metacrawlers) can certainly improve the coverage, in terms of the results we are looking for, but we need to concentrate on the analysis of "underground" drug-related communications (e.g., newsgroups, chatrooms, e-mails) as well. In the first Psychonaut 2002 meeting, held in London, December 2002, the results of the pilot trials have been examined, and the final methodology of the project has been agreed as follows. For each drug category, researchers agreed to do the following:

1. Visit all of the first 100 web sites selected with the Google search engine and analyze all of them thoroughly.
2. For the remaining sites, select a web site at random according to the list of random numbers given.
3. Follow all of the links on the chosen websites.
4. Allow research to be developmental.

Each country will check the material existing on the web in their own language but, on top of that, specific technical tasks/assessment of material pertaining to the different drug categories have been given to the different members (Table 2).

Each web page is evaluated and assessed according to set criteria, which will be based on a number of different parameters (i.e., scientific soundness of the information presented; licit/illicit nature of the substances described/proposed; commercial/non-commercial nature of the site). The Uniform Resource Locators (URLs) of these pages will be collected both by automatic (i.e., metasearch softwares) and manual means. An e-mail discussion list to facilitate communication between collaborators has been organized.

Finally, as a realization of the main point of this project, a protected website is going to be designed within the domain of the St George's Hospital Medical School in London website (www.sghms.ac.uk/). It has been agreed that access will be encrypted and restricted only to registered professionals. The collected URLs and the review of their contents will be published in both conventional and electronic peer-reviewed journals. All of the statutory and non-statutory Addiction Services professionals of the 11 European countries in-

TABLE 1. HOW THE 10 MOST IMPORTANT WEB SEARCH ENGINES IN 1999 WERE COVERING THE NUMBER OF PAGES ON THE INTERNET¹¹

<i>Search engine</i>	<i>% web covering</i>
Northern light	16
Snap	15.5
AltaVista	15.5
HotBot	11.3
Microsoft	8.5
Infoseek	8
Google	7.8
Yahoo	7.4
Excite	5.6
Lycos	2.5

TABLE 2. MANDATORY TASKS GIVEN TO CORE MEMBER (CHATROOMS AS WELL AS WEBSITES ARE EVALUATED IN EACH COUNTRY HOME LANGUAGE; TECHNICAL TASKS ARE REFERRED IN ENGLISH)

<i>Drug</i>	<i>Country</i>
Ecstasy	London
Precursors	France
Heroin, opiates	Italy
Other stimulants, inhalants, solvents	Italy
Herbs, plants	Finland
Prescription drugs, tobacco	Scotland
Cannabis	Denmark
Amphetamines	Germany
"Dance" drugs	Spain
Cocaine and crack cocaine	Portugal

volved will be regularly provided with reviews of the examined material.

RESULTS

This is a section of the project which has been carried out from November 1st 2002 to January 31st 2003 by the U.K. research subgroup and which has focussed upon MDMA and other related compounds. The Google search engine has been chosen and queries have been made using the key words "drug abuse," "MDMA," "MDMA-like," "ecstasy," "ecstasy-like," "rave," "recipe," and "buy" in different combinations. Eventually, we moved through the links which we found, beginning from the URLs that resulted from the Web search.

Out of the few hundreds of web sites visited, we thoroughly checked and examined 40 sites which had been chosen for the large quantity of information offered to visitors. The access to all of these sites has shown to be very easy and no technical expertise or software programs were required. Regarding to these 40 sites, 11 (27.5%) were governmental sites connected to Public Health Organizations and/or Universities, whilst 29 (72.5%) were non-governmental (partisan) sites, designed by rave promoters, independent groups, users groups. We were able to find out a range of medical misinformation (i.e., in one site, a product containing a powerful MAOI compound was offered to clients, without any warning regarding side effects and interactions) in at least 8 partisan sites. We also visited 7 sites in which it is possible to purchase illicit substances just providing a credit card number (after having agreed to a disclosure, formulated in a way in which the seller avoids any responsibility). In another 3 sites, we found the "recipes," the instructions, to synthesize a range of different entactogenic compounds, starting from simple precursors (which can be easily found even from high street shops). Finally, from 15 websites we gained access to chat rooms and newsgroups, in which (mis)information and technical suggestions for the drugs' synthesis were exchanged among participants. On the whole, we found in-depth references on a large number of different MDMA-like compounds: MDMA (XTC; Adam; Euphoria; Love Doves; Wonder Drug; Hug; Beans); MDE (Eve); PMA (Double Stack); PMMA; 2-CB (Nexus; Bromo; Venus; Eros); DOB; DOC; TMA; TD1Q; DOM; DMMDA-2; DMT; 4-MTA (Flatliner); 2-DG; MDA; MDEA; MDEA; MDMB; MDP1-P; MDP2; FAQ (Saphrole); MMAI; MBDB; MMDA; MMDA-2; MK-ultra; 2-C-T-7 (Blue Mystic); STP; P2P; PEA; PBN.

Three examples of partisan sites, chosen because representative, are given below:

1. *www.members.aol.com/brucertalbot/designerdrugs.html*: Here, the most popular designer drugs (and particularly MDMA-like compounds) are described in detail; from this site it is possible to get access to a special section called "drug-news," a newsagency in which all the information pertaining to the new illicit drugs are collected.
2. *www.naturesights.com*: It is a site from where it is possible to buy "Herbal Ecstasy," "Trip 2 Night" (a mixture of the MDMA-like Bromone and LSD), "Organic Ecstasy" (MDMA plus Soma Flight Agaric Mushrooms), and other mixtures of synthetic and ecological compounds.
3. *www.mdma.net*: It is likely to be one of the sites in which the largest number of extensive (mis)information, from the pharmacological point of view, are offered to the public. Users' comments on their own experiences with different entactogenic compounds are also available.

DISCUSSION

Although it seems not possible to carry out an exhaustive Web mapping on drug-related issues, the availability of a new technical tool (which can provide significant and updated information on new drugs, new trends, and modifications of drug scenarios) seems to be of huge interest for the practicing clinician. In fact, this technical knowledge cannot be obtained through reference books and scientific journals. The public health risks and, the dangers posed by these activities will be adequately assessed by the professionals provided with this information through the Psychonaut 2002 project.

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