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# Internet-mediated drug trafficking: towards a better understanding of new criminal dynamics

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**Abstract** Cyberspace has increasingly become an online marketplace for recreational drugs. The consequences that Internet usage has brought to drug trafficking, however, are still under-investigated. In this study script analysis was used to identify the structure of criminal opportunities that the Internet supplies for drug trafficking, and to allow a richer and deeper understanding of the dynamics of this criminal activity in the Internet age. This article provides an accurate description of how actors involved in drug trafficking behave in cyberspace and highlights how not only has the Internet opened the way for new criminal actors, but it also has re-configured relations among suppliers, intermediaries, and buyers. The conclusions suggest new directions for research and possibilities for a proactive law-enforcement approach.

**Keywords** Internet · Drug trafficking · Criminal networks · Script analysis · Serious and organized crime

## Introduction

With the emergence of new Information and Communication Technologies (ICTs), criminals found themselves operating within a new environment. The Internet, in particular, has provided new possibilities for illegal activities, enabling potential criminals to commit large-scale offenses with fewer personal risks and costs (Smith and Jorna 2011). This fact has attracted the attention of criminologists for more than two decades, especially with regard to new forms of crime. However, the Internet not only creates the potential for committing new criminal activities, but it also facilitates traditional crimes perpetrated in the real world (Newman 2009). Even if it is likely that benefits from using the Internet for trafficking activities exist (Grabosky 2005; Europol 2011), this aspect remains under-investigated: at present there is little empirical research on whether the Internet represents more than an enhanced communication tool for traditional trafficking activities, and the consequences that the Internet has had on them are still not clear.

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Concerning the role of the Internet in drug trafficking, it has often been underlined over the last decade that cyberspace has increasingly become an online marketplace for recreational drugs (INCB 2001; Rider 2001; Britz 2008; Walsh 2011; Dipartimento Politiche Antidroghe 2013). While older reports presented mainly anecdotal evidence, recently the analysis of how the Internet is used for drug trafficking has become more detailed, and the different roles the Internet plays in the drug trade, apart from facilitating communication, have been identified (EMCDDA 2013). The present study seeks to further this path of inquiry. It relies on script analysis—a way to highlight the sequence of actions that are carried out for a determinate criminal activity to occur—as a conceptual framework to identify the structure of criminal opportunities that the Internet supplies for drug trafficking, and it presents an empirically-based description of the dynamics of this criminal activity in the Internet age.[1]

This study is innovative in two aspects. First, it offers an updated description of a cutting-edge issue in criminological research—i.e., how Internet usage is changing the characteristics of many criminal endeavors, and specifically of drug trafficking. Second, by applying a crime script framework in the area of Internet-mediated trafficking activities, where it has not been used yet (with the exception of Author 2014), this analysis examines the possibilities offered by this methodological approach for the systematic investigation of complex criminal activities in the Internet environment. Before moving to the core of this article, a brief overview of the terminology used in the current study and of the state-of-the-art literature on Internet-mediated drug trafficking is provided.

## Recreational drugs, controlled drugs, and new psychoactive substances

"Drug" is a term of varied usage that indicates any chemical agent that alters the biochemical or physiological processes. The drugs considered in this article are all *recreational drugs*—i.e., drugs used with the intention of creating or enhancing recreational experiences. Depending on their origin, drugs can be divided into *naturally occurring, semi-synthetic* (chemical manipulations of substances extracted from natural materials), or *synthetic* (created entirely by laboratory manipulation) (UNODC 2013b).

The criminal market in recreational drugs has received much attention from policy makers and criminologists. In the context of the international security agenda, *controlled drugs* are those listed in the schedules annexed to two international treaties: the 1961 Single Convention on Narcotic Drugs, which considers mainly plant-based products such as cannabis, coca, opium and its derivatives, but also synthetic narcotics such as methadone, and the 1971 Convention on Psychotropic Substances, which extended the international drug control system to include substances such as amphetamine-type drugs, sedative-hypnotic agents, and hallucinogens.[2] Depending on the schedule in which they are listed, drugs are subject to different control regimes: for instance, some of them may also be used as licit pharmaceutical products and have looser restrictions.

[1] An earlier draft of this article was presented at the last Synthetic Drug Enforcement Conference SYNDEC 6, 19–21 November 2013.

[2] In order to update their schedules with new drugs, both conventions have regulatory mechanisms involving the World Health Organization and the U.N. Commission on Narcotic Drugs.

Besides these legal international instruments, all modern nations have regulatory frameworks that prohibit the importation, manufacturing, growth, distribution, sale, and use of a variety of drugs (Desroches 2005). However, efforts to counter drug trafficking suffer from the presence of so called *new psychoactive substances* (NPSs, sometimes called also "designer drugs" and "legal highs"), an umbrella term indicating all those drugs that are not yet under international control but that may pose a public health threat (UNODC 2013a; van Amsterdam et al. 2013). Especially in the past 5 years, their presence has become pervasive (UNODC 2013a). Their misuse is concentrated in a dozen substances: according to latest data, those identified are mainly cannabinoids and phenethylamines (stimulants), followed by synthetic cathinones (so-called "bath salts" stimulants), tryptamines (hallucinogen), and plant-based substances such as kratom (a Thai stimulant plant), khat (an African stimulant), and salvia divinorum (a Mexican hallucinogen) (UNODC 2013a). It is very difficult to tackle the problem of NPSs through the law, since manufacturers constantly try to escape the changing legal framework by creating and commercializing new substances.

## Research on Internet-mediated drug trafficking: the state of the art

The introduction of this article noted that, over the last decade, the role of the Internet as a communication facilitator in the trafficking of recreational drugs has been stressed in investigative reports and scholarly research. Among all Internet-mediated trafficking activities, drug trafficking is probably the one that has received more attention. While older reports presented mainly anecdotal evidence, only very recently the analysis of how the Internet is used for drug trafficking has become more detailed. The most recent EMCDDA report, for the first time, differentiated among different functions that the Internet has in the drug trade, beyond facilitating communication (EMCDDA 2013: 118ff). In particular, regarding drug distribution, the report underlines the existence of hotspots in the deep web[3]—such as Silk Road, an online platform with a global reach used for trafficking cannabis products, opiates, and synthetic drugs[4]—that enable sellers to benefit from anonymous communication, while frustrating law enforcement attempts to identify them (on this, see also Barratt 2012 and Christin 2012). In these hotspots, sellers also have the chance to work in a "stealth" mode, meaning that they can hide under another level of security and conduct business with trusted clients on an invitation-only basis. Furthermore, the report underlines that the Internet allows for different methods of payment, including prepaid cards and virtual currencies such as Bitcoin. In cyberspace, buyers can also review the quality of drugs, thus enabling sellers to build an online reputation. Online social networks of trusted couriers are used to recruit new people by dangling the possibility of undertaking profitable "holidays" in exotic destinations. Finally, according to the EMCDDA report, the Internet is used to access resources, specifically information, on how to produce drugs.

Internet usage seems to play a fundamental role especially for NPSs: according to the UNODC (2013a), about 90 % of its Member States consider the Internet a key supply source. However, the same study recalls the results of a 2011 Eurobarometer survey,

[3] That part of the web that is not indexed by standard search engines and therefore is hidden from the wider public.
[4] On October 2, 2013, Silk Road was shut down by the FBI and its 29-year-old administrator arrested.

conducted among 15- to 24-year-olds, which suggested that retail sales still rely on traditional distribution channels.[5] In any case, as underlined by the EMCDDA (2013), the number of online shops selling NPSs is growing: as of January 2011, 693 shops were identified in Europe, a more than threefold increase from the previous year. The EMCDDA also notes that these online shops also sell bulk quantities of psychoactive substances, which suggests resale activity. Online shops use several marketing techniques; in particular, they imply that new substances are a good replacement for controlled drugs, or they manipulate results on search engines so as to be ranked in the top results (EMCDDA 2013).

This article proceeds in this research domain by focusing on *what kinds of criminal opportunities* the Internet offers for drug trafficking to occur and *how* these opportunities affect the organization of drug trafficking. This entails identifying in what specific phases of criminal activity and for what purpose the Internet is used, as well as understanding the consequences the Internet has on the way in which drug trafficking is carried out, with regard to both the organization of the criminal activity and of criminal networks.

## Methodology and research limitations

### Data gathering

Data have been gathered from case studies and semi-structured interviews. The case studies are law enforcement operations in which the use of the Internet played a meaningful role. Relevant cases were initially identified through media sources and judicial databases (keyword search), and through reading investigative reports accessible in Italian or English. When possible, primary documentary sources (judicial transcripts and records from police investigations) were also used. A total of 41 cases investigated from 2003 to 2013 were selected through convenience sampling for the analysis. Despite the limited generalizability of this sampling method, it made it possible to take into consideration all cases with enough information on how the Internet was used for trafficking. Additional information was gathered through semi-structured interviews with law enforcement officers ($n$=13) and acknowledged experts ($n$=4) from Italy, the U.S., and the Netherlands. These countries have been taken into consideration not only for reasons of convenience (linguistic and geographic accessibility), but also in an attempt to include countries with different regulatory frameworks and policies for countering drug trafficking.[6] While this study targets these three

[5] Just 7 % of the respondents purchased NPSs via the Internet, while about 33 % did so in a specialized shop, 36 % at a party or in a club, and 54 % were offered them by a friend.

[6] In the Netherlands, drug policies rely on the distinction between hard drugs (such as heroin and cocaine) and soft drugs (such as cannabis and some types of mushrooms). Production, trafficking, and possession are criminalized, but for small quantities of soft drugs the law is not enforced. Italian legislation makes a similar distinction between hard and soft drugs; that distinction was abolished by a 2006 law, but it was reintroduced by a ruling of the Constitutional Court in February 2014. Drug use is not an offense, but acquisition and possession (above a certain limit) are criminalized. While obtaining a drug for personal use may be only a minor offense, acquisition for a third party may be interpreted as trafficking and subject to harsher penalties. In the U.S., drug policies have deep roots in the so-called "war on drugs" started by President Nixon in the early 1970s. Drug abuse is seen by policymakers primarily as a law enforcement problem, to be addressed through aggressive criminal justice policies. Controlled drugs are listed in five categories, depending on the characteristics of the substance.

countries, it is important to note that the findings should offer insight into the use of the Internet for drug trafficking in other Western criminal markets (especially in developed countries with a similar degree of Internet usage). In the borderless Internet environment, it is likely that the systemic challenges and opportunities with which offenders must deal are similar in different countries.

Certain limitations related to these data gathering strategies should be taken into account when considering this study and its contribution. First, the number of documentary sources used is limited because most relevant cases were extremely recent, under investigation, or with still-ongoing trials. However, data gathered through the semi-structured interviews with key informants was quite satisfactory and provided updated and detailed knowledge. Second, depending on the accessibility and availability of relevant material, not all cases could be studied in the same depth. However, those cases that were investigated more superficially both validated the findings from the main case studies, and permitted the consideration of novel standpoints.

## Data analysis

Data have been analyzed within a crime script conceptual framework.[7] Script analysis is an approach derived from cognitive science, which is used in criminology to describe the essential stages of a criminal activity, making the decision points explicit (Cornish 1994). Crime scripts have been increasingly used *in* criminological research as a tool to organize and analyze data. Initially scripts were used for "simpler" forms of crimes; however, *i*n the last decade, their scope has been extended to more complex and transnational types of offending (see, for example, Leclerc et al. 2011; Tompson and Chainey 2011). Of course, there are severe difficulties and intrinsic limitations in using a crime script for complex criminal phenomena like trafficking activities, given the dynamic nature of criminal markets (von Lampe 2011; Moreto and Clarke 2013). Furthermore, like other studies grounded on the script approach, this research has limited generalizability: indeed, scripts are unavoidably tentative, being necessarily based on a limited sample size (Chiu et al. 2011). Despite all these impediments, however, the script approach for trafficking activities has already been used in the literature (see, for instance, Hancock and Laycock 2010; Von Lampe 2010; Chiu et al. 2011; Author 2014) and it has been recognized as a useful tool to deconstruct the complex modus operandi of these activities (Moreto and Clarke 2013).

The script model used for this study relies on the "organised crime integrated crime script" developed by Hancock and Laycock (2010), which has the advantage of allowing a deeper level of empirical specificity and distinguishing among different script categories (or component parts) of trafficking activities—namely the "primary criminal act" (*crime*), the "criminal lifestyle" (*lifestyle*, or series of activities that are independent from any active offending process), and the "participation in/the access to criminal networks, groups or individuals" (*network*) (Hancock and Laycock 2010: 188). Unlike the scheme developed by Hancock and Laycock, however, possible preventive responses have not been identified, while a column labelled Stages has been added to juxtapose the "traditional" parts of the script (the Functions and the

[7] A similar scripting framework has been applied to investigating the use of the Internet for X [criminal activity] in Author (2014), and has been described in Author (2014) (details to be added after peer review).

corresponding Actions)[8] to the main phases of drug trafficking as identified by the existing literature. This framework allows easier assessment of the extent to which the Internet is having an impact on drug trafficking and at which stages this impact is stronger. In particular, re-elaborating from Desroches (2005), the UNODC (2013b), and from the interviews carried out, six main stages of drug trafficking have been considered for the purposes of this analysis: preparatory activities antecedent to the drug trafficking (Stage 0); cultivation of the plant-based drug and/or production of chemicals (Stage 1); intermediate passage through local middlemen (Stage 2); passage through transit networks (wholesalers and other importers operating at the international level) (Stage 3); intermediate passage through local retailers (Stage 4); distribution of the recreational drug to the final user (Stage 5); and activities that are directly consequential or subsequent to the trafficking activity (Stage 6).

## Results

Data gathered from case studies and interviews has been organized according to the crime script conceptual framework. This organization has permitted a comprehensive understanding of what kind of criminal opportunities the Internet offers for drug trafficking and in what phases of the criminal activity they are present.

After a first assessment of the cases identified for the analysis, it was clear that two main groups of recreational drugs could be recognized, following different patterns when it comes to the use of the Internet as crime facilitator: on the one hand, "traditional" drugs (naturally occurring and semi-synthetic), and, on the other, synthetic drugs and NPSs. Moreover, the interviewees, when consulted on this point, agreed that it would be helpful to rely on this core distinction. Therefore, two different scripts have been used to sort the cases. Only five cases have been included in both scripts; in these rare cases where the trafficking flow involved both groups of recreational drugs, the analysis specifies as much. The first script takes into consideration a total of 25 cases, the latter, 24 (16 regarding mainly synthetic drugs, 6 mainly NPSs).

[8] According to the original crime script model developed by Cornish (1994), the criminal activity can be unpacked by identifying the sequence of specific *actions* the offender has to go through in order to complete the criminal activity. To these actions, different *functions*—as first identified by Leddo and Abelson (1986: 118ff), whose work deeply influenced Cornish—might correspond: preparation, entry, precondition, instrumental precondition, instrumental initiation, instrumental actualization, doing, post condition, and exit (Cornish 1994: 161–162). *Preparation* involves actions carried out outside the crime setting in order to initiate the criminal activity; *entry* comprises those actions that enable the criminal activity, generally the entry into the setting where the actual crime will take place; *precondition* involves actions that might be needed before things can get under way; *instrumental precondition* considers actions that are required for the instrumental plan to begin; *instrumental initiation* comprises the actions that initiate the instrumental plan; *instrumental actualization* concerns the completion of the instrumental plan and includes the actions that will prompt the offender into the actual doing; *doing* is the purpose for being in the crime script (e.g., drug trafficking in the strict sense); and, finally, *post condition* and *exit* involve actions associated with the aftermath of the main action (e.g., the disposal of the profit) and those actions needed to leave the crime setting while avoiding detection. In the proposed script model, the modalities used in exploiting the Internet have been identified in the parenthesis in the column *Action*. In particular, both services (such as email providers and instant messaging) and cyber-hotspots (online "places" such as social networks, commercial websites, forums, etc.) have been specified.

These script frameworks do not consider all the actions needed for drug trafficking, but only those in which the Internet has been used, emerging from the case studies considered. Obviously, not all functions (and the relative actions) are present in all cases.

This conceptual framework has made possible the identification of ten major types of criminal opportunities that the Internet provides for drug trafficking.

1. *Communicative opportunities*: communication is facilitated by the use of services such as emails, Skype, and forums, both among traders and between them and (potential) buyers. Communicative opportunities affect all functions (from preparation to post condition) and all script categories, and they are generally present in all stages of the criminal activity with the exception of Stage 1. Especially as regards traditional drugs, offenders seem to exploit communicative opportunities offered by the Internet by taking care not to expose themselves, e.g. through making use of encrypted messages (preparation).
2. *Informational opportunities*: the Internet provides access to useful information, ranging from knowledge of the existing legal framework (Table 1, precondition) to instructions on how to manufacture drugs (Table 2, instrumental precondition). Informational opportunities impact all script categories, and they affect stages 0, 2, 3, and 4 of the trafficking chain.
3. *Technical opportunities*: in the case of traditional drugs (Table 1), online booking services have been used to arrange transportation and accommodation for the offenders (preparation), so to avoid physical contact with potential witnesses who could recognize them. These technical opportunities affect the script category "crime", and are found in intermediate stages of the criminal activity (stages 2, 3, and 4).
4. *Managerial opportunities*: the management of drug trafficking is facilitated by the Internet throughout the trafficking chain, from stages 0 and 6. Managerial opportunities generally affect the script categories "crime" and "lifestyle". However, their use differs with respect to the type of drugs under consideration. For instance, regarding traditional drugs, managerial opportunities are exploited to better control offline marketplaces regardless of the distance (instrumental actualization), while in the case of synthetic drugs and NPSs, managerial opportunities are used to adapt the drug production, depending on consumers' online feedback (post-condition).
5. *Organizational opportunities*: the use of the Internet can modify the organizational layers of criminal networks. On the one hand, some organizational layers are no longer necessary: for instance, chemicals can be bought directly online, rather than through local intermediaries (Table 1, preparation). On the other hand, the use of the Internet may allow new middlemen to step into the trafficking chain; for example, in some cases offenders bought drugs online from international wholesalers in order to re-sell them as regional or local retailers (instrumental actualization). Organizational opportunities impact the "crime" and the "network", and they generally affect the stages of the trafficking (2 and 4) where local intermediaries are involved.
6. *Relational opportunities*: the Internet provides an irreplaceable platform to expand offenders' networks of relationships. For instance, the Internet facilitates

**Table 1** The crime script for Internet-mediated trafficking in traditional recreational drugs

| Stage | Function | Script category | Action in which the internet has been used |
|---|---|---|---|
| 0 | Preparation | Crime Lifestyle | Learn about cyber-hotspots where to sell drugs (online newspapers) |
| 0 | Preparation | Crime Lifestyle | Learn about (offline) hotspots where to buy drugs (dedicated website) |
| 1 | Preparation | Crime | Buy chemicals (commercial websites, auction websites) |
| 0, 3 and 4 | Preparation | Crime Lifestyle Network | Recruitment of young people to smuggle drugs (online social networks, commercial websites) |
| 0 | Preparation | Crime Lifestyle Network | Interaction with (potential) members of the network (email, encrypted messages) |
| 2, 3, and 4 | Preparation | Crime | Arrange transportation and accommodation for the offenders (online booking services) |
| 3, 4, and 5 | Entry | Crime Lifestyle | Enter into contact with (potential) clients (online social networks, dedicated commercial websites both in the surfing and in the deep web, dedicated forums in the deep web) |
| 0–4 | Precondition | Network Lifestyle | Maintenance of contacts with other members of the criminal network (email, Skype) |
| 0 | Precondition | Crime | Get information on relevant legislation |
| 0–5 | Precondition | Crime | Verify identities of people met online to be sure that they are not undercover law enforcement officers |
| 4 and 5 | Instrumental precondition | Lifestyle Network | Inform potential clients/middlemen on how to obtain plant-based drugs from homemade cultivation (dedicated commercial website) |
| 4 | Instrumental initiation | Crime Lifestyle Network | Buy recreational drugs from international wholesalers in order to re-sell them as local retailers (commercial websites, auction websites) |
| 2, 3 and 4 | Instrumental actualization | Crime Lifestyle Network | Give orders concerning the local (offline) drug marketplace (online social networks) |
| 4 and 5 | Instrumental actualization | Crime Lifestyle | Advertise availability/prices of drugs (online social networks, commercial websites, dedicated forums in the deep web) |
| 4 and 5 | Instrumental actualization | Crime Lifestyle | Arrange sales of the drug to final buyers (online social networks) |
| 5 | Instrumental actualization | Crime Lifestyle | Order the drug (online social networks, dedicated commercial websites, dedicated forums, email) |
| 3, 4, and 4 | Doing | Crime Lifestyle | Agreement to send the drugs via regular mail among supplier and middlemen (emails, online social networks, dedicated commercial websites and forums in the deep web) |
| 3 and 4 | Doing | Crime | Conceal drug trafficking by means of coded messages (online social networks, Skype) |
| 4 and 5 | Post condition | Crime | Payment (prepaid cards that can be recharged online, online money orders to be collected offline with a password, Bitcoin) |
| 5 and 6 | Post condition | Lifestyle | Discussion with other drug users about the quality of the drug purchased (dedicated forums in the deep web) |

**Table 1** (continued)

| Stage | Function | Script category | Action in which the internet has been used |
|---|---|---|---|
| 6 | Post condition | Crime Network | Money laundering (online banking scams, online gambling) |
| 6 | Post condition/ exit | Crime Network | Report back to criminal leaders in the countries of origin (Skype and other Internet phone services) |

contact with criminal peers (preparation) and with potential clients (entry). Concerning specifically traditional drugs, the Internet has also been used to recruit new drug mules (preparation). Relational opportunities affect all script categories, and they are present in stages 0, 3, 4, and 5 of the criminal activity.

7. *Promotional opportunities*: the availability and the price of various types of drugs being sold online are advertised via the Internet (instrumental actualization). Moreover, in the case of synthetic drugs and NPSs, events in the physical world, such as rave parties are also advertised online (instrumental precondition). Promotional opportunities affect particularly stages 4 and 5, and the script categories "crime" and "lifestyle".
8. *Persuasive opportunities*: in the case of synthetic drugs and NPSs, the Internet is used to reassure (potential) buyers about the anonymity and the secrecy of the sale (instrumental actualization). Persuasive opportunities have been found in the final phases of the trafficking (stages 4 and 5) and they mainly affect the "crime" and "lifestyle" categories.
9. *Marketing and loyalty-building opportunities*: especially in the case of synthetic drugs and NPSs, the Internet is used as a retention tool for both new and old clients (doing/post condition). For instance, a website selling these products offered clients a membership with discounts if they were regular buyers. In the case of traditional "soft" drugs, it has been observed that traffickers cultivate the loyalty of users by appealing to their sense of belonging to a certain social community, for instance by using pro-legalization rhetoric.
10. *Countermeasure opportunities*: the Internet is used to disguise and conceal the trafficking. Specifically in the case of traditional drugs, the Internet is used throughout the trafficking chain to check out people with whom offenders have to interact, namely potential clients, so as to avoid being deceived by undercover law enforcement officers (precondition).

In the following sections, data are additionally analyzed and interpreted, and the main findings and trends are discussed.

## Discussion

### The impact of the Internet

From the script framework and particularly from the Stage column, it is evident that Internet usage can be found in all stages of the trafficking flow, especially in

**Table 2** The crime script for internet-mediated trafficking in synthetic drugs and NPSs

| Stage | Function | Script category | Action in which the internet has been used |
|---|---|---|---|
| 0 | Preparation | Crime Lifestyle | Learn about cyber-hotspots where to sell drugs (online newspapers) |
| 0 | Preparation | Crime Lifestyle | Learn about (offline) hotspots where to buy drugs (dedicated website) |
| 1 | Preparation | Crime | Buy chemicals (commercial websites, auction websites) |
| 0, 1 and 4 | Preparation | Crime | Buy technical lab equipment to manufacture drugs (commercial websites, auction websites) |
| 0–6 | Preparation | Crime Lifestyle Network | Interaction with members of the criminal network (email, Skype) |
| 3, 4, and 5 | Entry | Crime Lifestyle | Enter into contact with (potential) clients (online social networks, dedicated commercial websites and forums both in the surfing and in the deep web) |
| 0–4 | Precondition | Network Lifestyle | Maintenance of contacts with other members of the criminal network (email, Skype) |
| 2, 3, and 4 | Instrumental precondition | Lifestyle Network | Inform potential clients/middlemen on how to manufacture drugs (YouTube, dedicated forums) |
| 3 and 4 | Instrumental precondition | Crime | Get rid of national legal restrictions on specific drugs by locating the server elsewhere |
| 4 and 5 | Instrumental precondition | Lifestyle Network | Advertise offline social events (such as rave parties) where drugs can be found (online social networks, dedicated forums) |
| 4 | Instrumental initiation | Crime Lifestyle Network | Buy drugs online from international wholesalers in order to re-sell them as regional or local retailers (commercial websites, auction websites) |
| 4 and 5 | Instrumental actualization | Crime Lifestyle | Reassure clients about the anonymity and the secrecy of the sale (dedicated commercial website) |
| 4 and 5 | Instrumental actualization | Crime Lifestyle | Advertise availability/prices of drugs (online social networks, commercial websites, dedicated forums in the deep web) |
| 4 and 5 | Instrumental actualization | Crime Lifestyle | Arrange sales of the drug to final buyers (online social networks, email) |
| 5 | Instrumental actualization | Crime Lifestyle | Order the drug (online social networks, dedicated commercial websites, dedicated forums, email) |
| 3, 4, and 4 | Doing | Crime Lifestyle | Agreement to send the drugs via regular mail among supplier and middlemen (emails, online social networks, dedicated commercial websites and forums both in the surfing and in the deep web) |
| 3 and 4 | Doing | Crime | Conceal drug trafficking by advertising recreational drugs sold online under the guise of other items (commercial websites) |
| 4, 5, and 6 | Doing/ post condition | Crime Lifestyle Network | Customer loyalty strategies (online social networks, dedicated forums) |
| 4 and 5 | Post condition | Crime | Payment (prepaid cards that can be recharged online, Bitcoin) |
| 5 and 6 | Post condition | Lifestyle | Discussion with other drug users about the quality of the drug purchased (dedicated forums both in the surfing and the deep web) |

**Table 2** (continued)

| Stage | Function | Script category | Action in which the internet has been used |
|---|---|---|---|
| 1 and 5 | Post condition | Crime Lifestyle | Adapt the production of drugs depending on consumers' feedbacks (dedicated forums both in the surfing and in the deep web) |
| 6 | Post condition | Crime Network | Money laundering (online gambling) |

preparatory activities antecedent to the drug trafficking, as well as in stages where local retailers and final users come into play. With respect to traditional drugs, apparently the Internet has not meaningfully affected the opportunity structure in the initial stages of the trade (as it emerges from the Table 1, Stage column, which shows that only a few of the actions identified occur in Stage 2, at the beginning of the trafficking chain), suggesting that producers and middlemen in the countries of origin and importers operating at the international level generally rely on already established opportunity structures for their businesses.

In general terms, the Internet seems to have particularly boosted trafficking in synthetic drugs and NPSs; as explained by an interviewee, these "drugs that run on the edge of legality" are more trafficked via the Internet because "a person… reluctant to become a cocaine or heroin trafficker might be more willing to create a designer drug that isn't obviously illegal, so that they get to a comfort level… [that] doesn't take a lot of effort, doesn't need… tremendously sophisticated delivery systems that go from Colombia and Mexico to get here". The following two cases exemplify how the Internet can facilitate drug trafficking by allowing criminals to arrange most phases of the activity directly from the destination country. The use of managerial and organizational opportunities is here especially evident.

> *Case*. The defendant was involved in the illegal manufacturing of methamphetamine, which was sold in the local American marketplace. Via the Internet, he bought large amounts of precursors (such as muriatic acid) and other items that are commonly used to manufacture synthetic drugs (Judicial material, January 2007).

> *Case*. Offenders A and B are respectively mother and son, who ran a small (offline) shop in Italy selling, among other things, synthetic drugs and NPSs. They bought these substances online from the website of a firm legally located in Czech Republic but operating in Northern Italy. They were arrested in the course of a major law enforcement operation, which led to seizures of 1.5 million euros and a dozen arrests throughout the country. The firm selling NPSs online was manufacturing them by buying chemicals from China via the Internet. Drugs were sold under the guise of licit products, such as incense (Media news, January 2012).

## Exploiting legal loopholes

The last case highlights a specific problem regarding the massive commercialization of synthetic drugs and NPSs via the Internet: namely, that it is not easy to draw a line

between what is legal and what is not. Users themselves may not be aware that they have been involved in an illegal act, since many drugs are sold with the pretense of being legal products (persuasive opportunities). Furthermore, many controlled substances used for recreational purposes (and their precursors) may have a legitimate use, so it is sometimes difficult to determine whether a drug trade is happening or not.

*Case*. The defendant bought online a big quantity of GBL (γ-butyrolactone), a colorless oily liquid soluble in water, from a German website. GBL is a common solvent and reagent in chemistry, but it is also used as essential chemical for GHB (a "date rape" drug). The defendant claimed he used it as sexual disinhibitor for personal use, that he didn't know it was illegal to buy GBL in Italy, and that it was not possible to buy a lesser amount online (Media news, July 2011, interview material, and Parliamentary point of order C.4/13108, January 22, 2013 Italy).

In any case, even when users are fully aware of the illegality of their purchase, their dissembling may hinder the work of law enforcement agencies (countermeasure opportunities).

*Case*. Defendant A controlled Curious Goods, LLC, a business based in the U.S. Defendant A was charged, together with other seven people, with conspiracy to distribute synthetic drugs. They were allegedly selling online a product called "Mr. Miyagi", infused with synthetic cannabinoids, for a turnover of about 5 million dollars in under a year. Although mislabeled as a potpourri, "Mr. Miyagi" was sold to be smoked, for the sole purpose of getting the consumer of the product "high" (Media news, October 2012).

In Internet-mediated drug trafficking, the desire to contact potential clients (relational and promotional opportunities) seems to prevail over the need to conceal the trafficking activity in cases where the drug trade is in "grey areas" (as with NPSs), or is perceived by a relatively large part of the population as not socially reprehensible (as with cannabis). Otherwise, as underlined by one interviewee, "traffickers try to stay as anonymous as they can; they are cautious in using the Internet because they know they could be tracked". When operating in grey areas, traffickers/entrepreneurs are bolder and play with legal loopholes, placing themselves at the edge of legality. Accordingly, they depend on informational opportunities to remain up-to-date with the legal situation.

*Case*. Through the websites of an Italian company (Semitalia Ldt.) based in Tuscany (such as www.semini.it and www.semini.biz, now obscured), it was possible to buy cannabis seeds. Seeds were delivered via ordinary mail to the buyer, together with instructions to cultivate the home-grown drug. During the seizure, 80,000 seeds were found in stock, as well as small amounts of cocaine and hashish. Four men between 26 and 33 years old were arrested, and another 21 were put under investigation because they had bought significant amounts of seeds (which could suggest they were acting as local retailers). The investigation highlighted that besides Semitalia Ldt. there were 62 cannabis cultivation-related grow-shops—i.e., retail stores that sold equipment and supplies to make it possible to grow plants indoors (Media news, 2010, 2011, and interview material).

In March 2011 two of those arrested, namely the entrepreneurs running Semitalia Ldt. were released because, according to the Court of Florence, selling cannabis seeds online is not a crime, even though the small-scale growing of cannabis is illegal in Italy.

Another way to play with legal loopholes is to take advantage of the differences in national regulations; in many observed cases, for instance, commercial websites were hosted within the Netherlands to escape jurisdictions with more stringent drug laws.

### Cyber-hotspots

In the Action column of the script framework, the modalities through which the Internet was used are identified. Cyber-hotspots are present in both surface and the deep web, and they serve different purposes: they are not only "convergence settings" (Felson 2006; Soudijn and Zegers 2012) where potential offenders can easily meet each other, but rather places where interactions among all actors involved in drug trafficking are facilitated (Author 2014), so they are therefore hubs for relational opportunities. Sellers and clients can easily "meet" online in the surface web on commercial or auction websites, or in dedicated forums and online social networks—particularly Facebook and its photo-sharing service Instagram. As exemplified by the following case, sellers and buyers often interact only via the Internet to conclude the deal (communicative opportunities). This is common especially for cases regarding NPSs.

> *Case*. Students and former students at Columbia University were involved in distributing controlled substances (NPSs and POMs) advertised online. Orders were sent to anonymous email accounts. The buyer then received an email reply confirming the sale and asking her/him to mail cash payment to a specified address. Upon the receipt of payment, the order was shipped to the buyer's address (Judicial material, November 2007).

By contrast, in cases concerning "hard" drugs, cyber-hotspots in the surface web are more frequently a mere extension of traditional hotspots: when operating on the open web to reach potential clients, offenders apparently prefer to avoid using the Internet to conclude the deal.

> *Case*. Illegal narcotics (including cocaine, heroin, and ecstasy) and POMs (mostly opioid painkillers) were advertised online as "study aids" or "pain relievers" on the popular commercial website Craigslist, but sales happened offline, usually in public places (such as street corners or stores) in Manhattan (Interview material).

In these cases, apart from creating new cyber-hotspots, Internet usage might be affecting traditional, offline hotspots. According to one American interviewee, the core of the distribution has moved from city centers to suburban areas: clients do not have to move to purchase drugs, but they can easily order them online and have them delivered at home by a drug courier.

The situation is different if we consider the deep web, where hidden online platforms dedicated to drug trafficking exist. The notorious Silk Road has already attracted the attention of scholars (Barratt 2012; Christin 2012). The following case describes a similar but less well-known marketplace for drugs, the Farmer's Market, which could

be accessed through the TOR computer network. The Farmer's Market was taken down in April, 2012.

> *Case*. Eight people (described as "an organized criminal network, even if not in a traditional sense") were arrested in the U.S. because they were allegedly involved in running a drug market with a global reach in the deep web. Many more suspects were arrested in other countries via joint operations, including the alleged ringleader, a Dutch citizen. In only 2 years of activity, the online marketplace had a turnover of about 1 million dollars and processed around 5,000 orders. LSD, fentanyl, ecstasy, ketamine, and cannabis were some of the drugs for sale (Media news, April 2012, and interview material).

When a trade occurs in the deep web, thanks to the managerial and technical opportunities provided by the Internet, drugs are generally delivered via mail, without physical interactions among buyers and suppliers, who might even live at the antipodes.

As already underlined in the last EMCDDA report (2013), apart from places that allow the drug supply to meet the demand, there are forums in the deep web where clients discuss the quality of drugs sold by different traffickers (informational opportunities). For instance, as reported by an interviewee, in a recent case a synthetic drug commercialized online caused nausea as a side effect. By following a dedicated forum, offenders were able to discover in real-time this negative feedback, and consequently customize their drug production accordingly to better meet the consumers' needs. Therefore, cyber-hotspots serve also offenders in terms of managerial opportunities.

The role of the Internet as a convergence setting for users, however, is not limited to the deep web, especially as regards informational opportunities. From a simple Google search, several websites and forums can be identified offering platforms informing searchers of places both offline and online to buy drugs and their prices, as well as instruction in how to cultivate plant-based drugs and how to manufacture synthetic drugs. Furthermore, information about legislation and law enforcement's attitudes (for instance, whether to bribe or not, or to what extent restrictive legislation is enforced in a certain country) can be found. These cyber-hotspots are easy to find especially as concerns "soft" drugs such as cannabis, both at the global (for instance, www.icmag.com and www.seedbankreview.com) and local (www.enjoint.info) levels. Some of these websites, such as www.webehigh.org ("A travel guide to getting high"), are a sort of Wikipedia for drugs, since they are open for users to comment in order to update information.

The usage of different "levels" of the Internet for different types of drugs has important implications, especially relating to ease of interdiction. Internet-mediated drug trafficking represents a new challenge for law enforcement. Not only does contemporary law enforcement seem to lack the capacity to control much computer-related crime because of the vast online environment, but even when law enforcement identifies (potential) cyber-hotspots, technical difficulties in gaining investigative access to them may impede matters. Online investigators certainly have to know where to look, but in some cases they also need in-depth technological knowledge to uncover relevant information. Moreover, as reported by many interviewees, many legal (and ethical) implications are not clear yet, given that existing legislation in most cases does not yet consider specifically the status of online undercover operations and monitoring activities. Additional socio-legal research in this domain is surely needed.

## Additional findings

### *Law enforcement perception*

The perception of how extensive Internet usage for drug trafficking is differs depending on the nationality of the interviewee, as well as on her/his ranking in the law-enforcement hierarchy. Generally speaking, the closer the interviewee was the operational level, the more he/she recognized that Internet usage plays a major role in drug trafficking nowadays. While interviewees from countries with longer experience regarding online investigations were, for instance, absolutely certain about the use of commercial websites (such as Craigslist) to advertise drugs, colleagues from other countries suggested that certain advertisements were probably "frauds" because the criminal activity was "not concealed enough". The overall impression is that law enforcement operations dealing with drug trafficking via the Internet address only the tip of the iceberg. In most countries, no specific investigations regarding Internet-mediated drug trafficking are carried out. Some interviewees suggested that this is because large criminal organizations—which are the main targets of law enforcement—do not extensively use the Internet, and many law enforcement agencies lack the resources to tackle smaller groups in addition. Even when Internet investigations are on the law enforcement agenda, only recently have specialized investigative units started to operate: for instance, in Italy the eUnit of the Central Directorate for Anti-Drug Services was created in March 2012 and, at least for now, this unit is mainly used for monitoring the web. Specialized units are building experience as they go, which is reflected in how they approach their work; for example, an interviewee with experience in cross-border drug trafficking cases was confident in saying that English is used as the lingua franca in cross-border drug trafficking, but other interviewees admitted that in monitoring the Internet they generally only use their national languages.

### *Criminal actors involved*

So far, this analysis has focused on the impact of the Internet on how criminal acts are carried out. The Script Category column of the script framework, however, shows that the crime is only one of the parallel processes taking place in complex criminal activities, together with the criminal lifestyle and participation in criminal networks. By including these aspects in the analysis, it is possible to describe how the use of the Internet changes the relationships among the actors involved in Internet-mediated drug trafficking.

Different types of criminal groups are traditionally involved in drug trafficking. This criminal activity, however, generally occurs in the context of organized crime (Kenney 2007; Calderoni 2012; Kostelnik and Skarbek 2013). When it comes to Internet-mediated drug trafficking, as suggested by a couple of interviewees, a major distinction can be drawn a between organized criminal networks and other types of offenders running this criminal activity ("sophisticated" and "unsophisticated" networks, in the words of another interviewee). In a context in which the full potential for different types of criminal groups to exploit new technologies is yet to be fully understood (for an explorative analysis see Choo 2008 and Lavorgna and Sergi 2014) and the consequences for legislation and policing are still unclear, this diversification might have

implications on how key criminal actors are targeted by law enforcement. Depending on agenda setting and resource allocation, for instance, law enforcement might put different effort into tackling offenders carrying out comparable activities but with a different degree of organization, disregarding the fact that because of the new crime opportunities provided by the Internet, loosely-organized groups and even individuals can be as efficient as traditional organized groups (Lavorgna and Sergi 2014: 26).

Organized criminal networks are professionally involved in drug trafficking. They particularly exploit communicative opportunities provided by the Internet, for instance by using Internet phone services such as Skype and online chat. These services not only allow them to easily maintain constant contacts with other members of the network based in other countries, but also reduce the risk of being wiretapped. When the Internet is used for communication, extra security measures are often adopted (countermeasure opportunities). For instance, an interviewee reported of a case where the defendants used Skype to communicate among themselves by showing each other pieces of paper with information (container numbers, checking accounts, and so on). Indeed, if intercepting Skype calls is technically very complicated because of its peer-to-peer architecture, tapping video calls is even more difficult. Also coded messages are used in order to avoid leaving traces:

> *Case*. A 27-year-old man under house arrest in Northern Italy ran a highly sophisticated criminal network based in Sicily, trafficking in hashish and cocaine. He used Facebook chat in order to avoid controls and wiretappings. As an extra security measure, he used culinary metaphors as coded messages (e.g., "How much pasta have you prepared for lunch?") (Media news, June 2011).

Another trick commonly employed is the use of email drafts (using a common email account and communicating by saving emails as draft online rather than sending them), which increases the difficulty in tracing the traffickers.

> *Case*. A criminal network of at least 20 people trafficked huge quantities of cocaine and hashish from South America to Italy via the Netherlands and Spain. The network was described as a sort of "joint venture between the 'ndrangheta and Cosa Nostra". Offenders used email drafts for their communications (Judicial material, November 2005).

With respect to drug distribution, long-running organized groups—such as traditional mafias—do not generally use the Internet. According to some interviewees, one explanation is that these groups are often ruled by older criminal generations, who are not yet used to the Internet. In the trade-off between anonymity and efficiency, they choose the former: for instance, cash is preferred to online payments because it is less traceable. Furthermore, they already have widespread and consolidated distribution channels to rely on. When specific "technical" problems have to be solved, these criminal networks rely on Internet-savvy members of the group or on the specific expertise of non-members (such as hackers). For instance, in an investigative case, a mafia-style criminal network was building up its own gambling website in order to launder money generated by drug trafficking (interview material). However, this rarely happens . In the following case, the criminal group relies on non-members to carry out

a specific task involving Internet usage; in order to verify the non-member partner's trustworthiness, a meeting was organized offline to discuss the details of the illegal operation.

> *Case*. A criminal network linked to Camorra trafficked cocaine between the Naples hinterland, Northern Italy, and Spain. For money laundering purposes, high-level members of the network had contacts with a broker and legal consultant with hi-tech expertise based in London. This broker basically operated a sophisticated online banking fraud by proposing false investments to his/her wealthy clients. In one of the wiretappings, the broker affirmed that he was part of "a virtual network committed to carrying out these types of illicit operations" (Interview material and investigative material, 2010).

More recently-organized criminal networks, generally run by younger people, use the Internet to make drug trafficking more efficient and less risky (managerial opportunities), or even to broaden their networks of relationships (relational opportunities). These structured criminal groups, who rely on criminal opportunities offered by the Internet beyond communication, are generally middle-level criminal networks, who thusly manage both international trades and local distribution.

> *Case*. A structured organization, with stable contacts in various European countries, bought synthetic drugs (particularly synthetic cannabinoidis) and NPSs from the Netherlands and Eastern Europe. Drugs were successively re-sold online in several countries after an intermediate passage in Romania to disguise the trafficking chain (Judicial material, April 2011).

> *Case*. A 29 years old man with links to the 'ndrangheta ran a criminal network based in the Milan hinterland, composed of about 40 people (Italians and South Americans). They were trafficking cocaine imported from South America, for a turnover of more than 200,000 euros per year. Besides using traditional trafficking modalities (cocaine ovules and postal packages), the criminal network relied on Internet advertisements to recruit couriers, with messages such as: "we are looking for young men between 22 and 35 years old to travel to South America (Argentina, Peru, Bolivia, and Ecuador) in order to transport cultural goods, jewelry, and alpaca clothing". Most respondents were students, who were able to earn up to 2,000 euros per month (Media news, September 2012).

Apart from sophisticated and organized criminal networks, other types of offenders run drug trafficking—or at least some of its stages—via the Internet. In many of the cases observed, very loose gangs (up to 8–10 people) or even individuals used the Internet to set up their own drug marketplaces of local distribution. Regarding synthetic drugs and NPSs, in more than half of the cases the trafficking was carried out in a professional or semi-professional way by loose groups of full-timers for whom drug trafficking became the main source of income, as well as by people legitimately involved in legal activities who decided to increase their profits by amateurishly embracing the new criminal opportunities provided by the Internet.

*Case*. Defendants A and B, legally selling cleaning products via the Internet, were involved in a large-scale trafficking in Buteneidol (BD), a controlled substance whose chemical structure is substantially similar to the one of a forbidden one (gamma-hydroxybutynic acid or GHB), which is used to "get high", as a growth hormone, and to facilitate sexual assault. However, BD is also used as industrial solvent. Defendants A and B sold BD over the Internet under the guise of a cleaning product. The Internet was broadly used for all stages of the trafficking activity. Communications with clients generally occurred by email. However, from interceptions it appears that, when discussing the legality of the sale with clients, the defendants preferred to discuss things verbally (by phone) (Judicial material, July 2003).

*Case*. 21 people aged from 22 to 63 years old were arrested because they were selling illegal narcotics and POMs by posting advertisements on the popular commercial website Craigslist. Most of the arrested had legitimate occupations, including a student, a teacher's aide, a human resource professional, a celebrity photographer, and a dotcom entrepreneur. However, some of the arrested had no identifiable source of legitimate income (Interview material).

Organizational and informational opportunities seem to have the biggest role in such operations. For drug traders operating online, it is easier and less risky to get in touch with potential customers without having to meet them in person (communicative and relational opportunities). Offenders can take full advantage of the anonymity allowed by the Internet so that their online reputation is unrelated to the one they have in the physical world.

Because of new criminal opportunities in the online realm, the cost of entering the criminal market for recreational drugs is fairly low. Newcomers operate especially in the NPSs market; in this way, they do not have to compete directly with criminal groups already established in trafficking traditional drugs. As explained by an interviewee, "if you try to take over a route for cocaine or heroin delivery, you are going to get killed, or you are going to be pushed back. But you can create your own new market over the Internet and in a semi-anonymous fashion".

With regard to "soft" drugs, synthetic drugs, and NPSs, some investigations concerned teenagers selling small quantities of drugs to people related to their circles of friends and schoolmates via online social networks such as Facebook (Media news, November 2003, March 2010, and September 2010; interview material.). An important innovation in drug trafficking can indeed be attributed to young "psychonauts"—i.e., people who take drugs themselves—entering the market as small-scale traders; they have basically added an organizational layer to the trafficking chain by acting as local retailers for their (extended) circles (organizational opportunities). Even if most of these psychonauts seem to be involved in small-scale trades, a couple of interviewees underlined that in some recent cases the quantities purchased imply that some transactions are directed towards retailers operating on a larger scale (from business-to-consumer to business-to-business).

At the same time, however, some organizational layers that were necessary in the initial stages of the activity appear to be no longer necessary; for instance, as some of the analyzed cases suggest, precursor chemicals can be bought online anonymously

from Chinese factories and shipped to the destination country, so that criminal networks dealing with synthetic drugs might no longer need a man on the spot there.

## Conclusions

Script analysis is generally used as the starting point for situational crime prevention, a crime control approach that, after having identified criminal opportunities, tries to reduce crime by modifying the decisions that precede its commission (Clarke 2008). This study stops a step before that, looking instead for specific criminal opportunities and trying to identify behavioral patterns. However, it offers a detailed description of the current situation, thus providing the starting point for further research on this issue and updated insights for policy approaches.

The proposed study has shown what types of criminal opportunities the Internet offers for drug trafficking and how these opportunities affect its organization; as shown by Author (2014, with regard to [other criminal activity, details to be added after peer review]), the Internet is not merely used as a communication tool but has affected the criminal market in recreational drugs in a much more extensive way by making it a hybrid market which combines the traditional social and economic opportunity structures with the new one provided by the Internet. Not only has the Internet opened the way for new criminal actors, but it also has re-configured relations among suppliers, intermediaries, and buyers.

This study has also shown the critical importance of individuals and loose criminal networks when it comes to Internet-mediated drug trafficking. In an increasingly Internet-dependent society, it might be opportune and well-timed for criminologists to reconsider taking (often) for granted the transnational organized crime narrative when addressing business-like criminal activities. Otherwise, they risk failing to consider actors in the criminal process who might be just as efficient and harmful.

Finally, it has to be noted that existing accessible data on the modus operandi of offenders running Internet-mediated drug trafficking are scarce and they might show only a partial angle; online investigations are not always used as a common tool against this trafficking activity, and most investigations in this domain are extremely recent and therefore barely accessible to scholars. By looking at experiences that are comparable, even if outside the scope of a specific law enforcement agency, it might be possible to gain further insight into how offenders behave online. The present study is indeed part of a broader research on the role of the Internet in different trafficking activities; by observing through the same lens—i.e., the script framework—different trafficking activities, it has been possible to note certain similarities and convergences, particularly with regard to the online trade in counterfeit pharmaceuticals (for instance, as concerns how possible clients are approached and certain cyber hotspots are used). Indeed, as underlined by von Lampe (2012), comparing phenomena across different contexts (defined, for instance, by the type of crime) may allow one to go beyond mere description, by identifying possible patterns, and gaining deeper theoretical insights. Therefore, by investigating different Internet-mediated trafficking activities and in particular by looking at the online criminal market in counterfeit pharmaceuticals, it might be possible to positively direct law enforcement attention to trafficking in recreational drugs, thereby overcoming some “blind spots” resulting from data

deficiencies for drug trafficking. A hypothesis-based approach to crime prevention has also been encouraged in academia (Ekblom 2010: 71), which could have great utility in "predicting" how certain offenders would be likely to behave, thus allowing law enforcement to be more proactive.

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