Trends and Challenges in the Online Trade in Counterfeit Pharmaceuticals

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Abstract

There is consent that the Internet is a primary criminal market for counterfeit pharmaceuticals. So far, however, the online trade in counterfeit pharmaceuticals has been surprisingly under-investigated by criminologists. However, if this dangerous Internet-mediated trade has to be effectively controlled, considerably more knowledge on recent trends and changes in the organization of this criminal activity has to be built. This study contributes in this domain by looking at how the Internet is specifically used as a facilitator for the trade in counterfeits pharmaceuticals. Based on interviews and investigative cases analysed through a crime script, this study pinpoints the criminal opportunities made available by the specificities of the Internet, identifies what specific phases of the trafficking activity they facilitate, investigates how such opportunities are exploited by criminal actors, and offers updated insights on how actors involved in the online market in counterfeit pharmaceuticals behave.

DRAFT – FORTHCOMING ARTICLE

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Introduction

The commercialisation of the Internet during the 1990s has led to a silent consumer revolution. It is theoretically possible to buy all types of items online, including pharmaceuticals for human use. Despite the obvious benefits of being able to purchase medicine via the Internet, this e-commerce presents a major problem, given the massive presence of counterfeits available through the online market. According to the World Health Organization (WHO, 2006), up to 50% of pharmaceuticals sold online are counterfeits1. The criminal market in counterfeit pharmaceuticals regards both categories of medicines as they are generally distinguished by national regulatory agencies: “over the counter” (OTC) and “prescription only” (POM). While the former are sold directly to buyers without a medical prescription, the latter can be sold only with the approval of a healthcare professional (Gentilomo et al., 2006). These products are an extreme threat to health: even if incident trends are difficult to assess because of the very high untraceable numbers, estimates range from 100,000 to 700,000 deaths per year caused by counterfeits (Harris et al., 2009; Bate, 2012a). As stressed by Attaran et al. (2011: 2), the trade in counterfeit pharmaceuticals “ought to be considered a more serious transnational crime than is” (Attaran et al., 2011: 2). So far, however, the online trade in counterfeit pharmaceuticals has been surprisingly under-investigated by criminologists, and the (relatively rare)

1 In scientific debates and in different legal systems, there are various definitions of “counterfeit pharmaceuticals.” A common understanding can be identified in the broad definition offered by the World Health Organization (WHO), according to which “spurious/falsely-labelled/falsified/counterfeit (SFFC) medicines are medicines that are deliberately and fraudulently mislabelled with respect to identity and/or source” (WHO, 2012, emphasis added).
scholarly work that has addressed this issue mainly comes from other disciplines, such as pharmacy, medicine, or chemistry.

The online market in counterfeit pharmaceuticals: the state of the art

The value of the criminal market in counterfeit pharmaceuticals is estimated to be about 75 billion dollars per year (Jackson, 2009: 181; WHO, 2012), corresponding to approximately 10% of the global trade in medicines. Though counterfeiting pharmaceuticals is a pervasive and global problem, its extent varies depending on the area of the world; it has been claimed that there is a “North-South divide” (Cahoy, 2008). While in developing countries counterfeit medicines pose a dramatic problem for healthcare and roughly 30% of medicine consumed is supposed to be counterfeit (Dondorp et al., 2004; IMPACT, 2008), in developed countries estimates are far more optimistic: less than one percent of medicines is likely to be counterfeit (IMPACT, 2008). The Internet is thought to be the only way in which counterfeit medicines enter these markets, since the legal production and supply chains are essentially safe because of effective control policies set by national authorities (Bate, 2012a).

The complexity and the internationality of the online trade in counterfeit pharmaceuticals is seen as an indicator that this trafficking flow is run by organised criminal networks with a considerable degree of sophistication (Satchwell, 2004; Grabosky, 2007; Attaran et al., 2011; Interpol, 2012; IRACM, 2012). Moreover, the lack of adequate sentencing for this type of criminal activity makes it less risky for criminals than other comparable trafficking flows, such as the one in recreational drugs (Attaran et al., 2011).

The online trade in counterfeit medicines is generally related to the presence, since the 1990s, of online pharmacies—i.e., retail pharmacies that operate partially or exclusively over the Internet and that ship orders to customers by mail. In just little more than a decade, the number of these websites grew exponentially, and recent scholarly work and investigative reports are consistent in denouncing the presence of thousands of websites that sell counterfeit pharmaceuticals (Arruñada, 2004; Orizio et al., 2010). Three main types of online pharmacies can be identified: legal online pharmacies, fake online pharmacies, and illegal online pharmacies (Di Giorgio, 2011): legal online pharmacies respect the legal framework of the

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2 Most counterfeit medicines are manufactured in India and China, and then sold in the rest of the world, but “pockets of local production” are reported to exist also in other poorly regulated countries, such as Spain and Russia (Bate, 2012b: 7).
country where they are established; *fake online pharmacies* only seemingly sell medicine, while in reality they operate frauds and phishing activities; and *illegal online pharmacies* are the main system for selling counterfeit medicines in Western markets.

From analysis of the existing literature, it emerges that two main types of counterfeits medicine are sold via the Internet (Di Giorgio, 2011): (a) so-called “lifestyle drugs”—i.e., pharmaceuticals that are assumed voluntarily to improve appearance or certain aspects of personal life, for instance drugs for erectile dysfunction, obesity, and male pattern baldness; (b) opioid analgesics and psychotropic substances such as stimulants, antidepressants, and benzodiazepines (Forman et al., 2006; Raine et al., 2008), which could be misused also by drug addicts (Finley, 2009; Ghodse, 2010: 170). The literature also reports cases of psychopharmacological drugs and anti-HIV drugs (Gentilomo et al., 2006). A new trend has been identified in pharmaceuticals that are sold online as “natural products” or nutritional supplements to exploit their looser regulation (Senato della Repubblica, 2010).

**The contribution of the present study**

Even if there is an increasing interest in investigating the online trade in counterfeit pharmaceuticals, empirical research on this topic is still scarce and evidence provided is often anecdotal. If this dangerous Internet-mediated trade is to be effectively controlled, considerably more knowledge on recent trends and changes in the organisation of this criminal activity has to be gleaned. This study contributes to this domain by looking at how the Internet is used to facilitate the trade in counterfeits pharmaceuticals. In particular, it pinpoints the criminal opportunities made available by the specificities of the Internet, identifies exactly which phases of the trafficking activity they facilitate, investigates how such opportunities are exploited by

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3 The concept of “legality,” nonetheless, has to be considered in a relative sense, as the inherent transnational nature of the Internet means that an online legal pharmacy could be accessed by customers from a country where the sale is considered illegal. Indeed, a major problem with the online trade in pharmaceuticals is that legal frameworks addressing the online trade in counterfeit medicines vary substantially between countries, creating loopholes that can be easily exploited by criminal networks. Directive 2011/62/EU (amending former Directive 2001/83/EC) is the first legal act that explicitly addresses the online trade in medicines in the EU. It aims to harmonise Member State legislation in this field, as national laws on the online trade in medicines are currently extremely different, and in some countries the online sale is even banned *tout court*. Once implemented, Directive 2011/62 will allow Member States to sell both OTC drugs and POMs, or only OCT medicines, via the Internet, depending on their choice.

4 Usually illegal pharmacies rely on “mirror sites”—i.e., websites that are located in countries where the online commerce of pharmaceutical products is illegal, and that direct the user back to the head pharmacy, located where the product can be sold or the activity is less risky (Senato della Repubblica, 2010). It is difficult to distinguish illegal pharmacies from the legal ones. Nonetheless, several indicators have been identified to help buyers as well as law enforcement to pinpoint illegal websites (for instance, the possibility of buying POMs without medical prescription, the lack of physical mailing addresses and telephone numbers, and the presence of continuous reassurances concerning the anonymity of the transaction) (Gentilomo et al., 2006).
criminal actors, and provides updated insights on how actors involved in the online market in counterfeit pharmaceuticals behave. Finally, it offers a reflection on the main challenges that have to be met to respond to this criminal phenomenon.

Before proceeding with the analysis, one clarification must be made: when pharmaceuticals are sold via the Internet, the tendency is to consider them as counterfeit products, given the existing knowledge of the quality of medicine sold online and the fact that it is basically impossible to distinguish counterfeits without closer observation or chemical testing (which can be done only after purchasing). However, pharmaceuticals bought online could not be counterfeit stricto sensu. Moreover, when pharmaceuticals are sold online as doping products, the narrative generally tends to change: the focus is not on the counterfeiting problem anymore, but rather on the illegal usage of the product. To the author’s knowledge, no research has yet been done to specifically assess the extent to which doping pharmaceuticals sold online are counterfeits. However, since doping products sold via the Internet usually originate from the same counties, follow the same distribution routes, and are sold through the same channels as other pharmaceuticals, they will be considered alongside the online trade in POMs if not otherwise specified.

Methodology

In this study, script analysis—a way to organise information which allows to highlight the sequence of actions carried out for a determinate criminal activity to occur (Cornish, 1994; Hancock & Laycock, 2010)—was used to identify the structure of criminal opportunities supplied by the Internet for trade in counterfeit pharmaceuticals, and to allow a richer and deeper understanding of the dynamics of this criminal business. Data analysed within this script model have been gathered from case studies drawn from law enforcement operations identified through keyword searches in Italian and English media sources (the newspaper online archives of La Repubblica, Il Corriere della Sera, The New York Times, The Guardian, and The Telegraph), judicial databases (Dejure for Italian cases, Westlaw for US cases, and The Law Pages for UK cases), and during twelve semi-structured interviews with key informants carried out between mid-2012 and late 2013 for a total of fifteen hours. These informants include ten prosecutors and police officers dealing with controlled substances in the course of their duties (including special agents and senior officers at the DEA, the FBI, the Metropolitan Police Service, the Italian Central Directorate for Anti-drug services and the Postal and Communication Police), one expert in doping products who is a consultant for the World Anti-Doping
Agency WADA, and one expert in counterfeit pharmaceuticals at the Italian Medicines Agency AIFA). The interviewees were selected through non-probability sample methods, namely purposive and snowball sampling. The former method allowed a search for respondents that were knowledgeable about counterfeit pharmaceuticals, willing to talk, and with varied expertise; the latter permitted reliance on the initial element contacts to provide additional interviewees. The semi-structured interviews with key informants were particularly useful in integrating documentary data with rich and updated knowledge. A total of 30 cases investigated in Italy, the UK, and the US from 2006 to 2013 were selected (out of 78) through convenience sampling for the analysis, meaning that cases were selected on the basis of the possibility of obtaining good quality information to build scripts out of them, rather than chosen randomly from all possible relevant cases. The data-sampling strategy allows only limited generalisability; however, it made it possible to select cases with information sufficient for the descriptive research presented in this article and detailed enough for the script analysis (see, for instance, Brayley et al., 2011; Chiu et al., 2011; Author, 2013). Italy, the UK, and the US were considered not only because of linguistic accessibility and the possibility of carrying out interviews there, but also to include in the study both countries that allow online pharmacies (the UK and the US) and one country, Italy, that prohibits the online sale of pharmaceuticals (even if the situation is soon going to change because of Directive 2011/62/EU, see endnote iv).

The scripting model used for this study has already been used by Author (2014 a, b) to study Internet-mediated wildlife trafficking and trafficking in recreational drugs (see also Author, 2013 for further methodological details). It juxtaposes the sequence of specific actions and functions of the criminal activity as first identified by Cornish (1994) (preparation, entry, precondition, instrumental precondition, instrumental initiation, instrumental actualisation, doing, post condition, and exit) to the main stages of the trade in counterfeit pharmaceuticals, as identified by the existing literature (Finlay, 2011: 9) and from the interviews carried out, so as to better assess to what extent the Internet is having an impact on this criminal activity and at which stages this impact is stronger. Five stages were identified: preparatory activities antecedent to the trade in counterfeit pharmaceutical (Stage 0); production of pharmaceutical products (Stage 1); intermediate passage through transit networks (wholesalers and other importers operating at the international level) (Stage 2); intermediate passage through local retailers (Stage 3); distribution of the pharmaceutical product to the final user (Stage 4); activities that are directly consequential or subsequent to the trafficking activity (Stage 5). Table 1 presents the framework utilised.
<table>
<thead>
<tr>
<th>STAGE</th>
<th>FUNCTION</th>
<th>SCRIPT CATEGORY</th>
<th>ACTION IN WHICH THE INTERNET HAS BEEN USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 and 1</td>
<td>Preparation</td>
<td>Crime</td>
<td>Buy technical lab equipments to prepare pharmaceuticals (commercial websites, auction websites)</td>
</tr>
<tr>
<td>1, 3, and 4</td>
<td>Preparation</td>
<td>Crime</td>
<td>Obtain active ingredients and excipients (commercial websites, auction websites)</td>
</tr>
<tr>
<td>2, 3, and 4</td>
<td>Entry</td>
<td>Crime Lifestyle</td>
<td>Individual contact with potential clients (email spam)</td>
</tr>
<tr>
<td>2, 3, and 4</td>
<td>Entry</td>
<td>Crime Lifestyle Network</td>
<td>Interaction with potential clients (auction websites, dedicated commercial websites, dedicated forums, dedicated online magazines, online social networks)</td>
</tr>
<tr>
<td>3</td>
<td>Entry</td>
<td>Crime</td>
<td>Obtain unpackaged pharmaceuticals</td>
</tr>
<tr>
<td>0</td>
<td>Precondition</td>
<td>Lifestyle</td>
<td>Obtain information on how to treat a particular disease or condition (by users)</td>
</tr>
<tr>
<td>4</td>
<td>Instrumental precondition</td>
<td>Crime Lifestyle</td>
<td>Get rid of national legal restrictions concerning specific pharmaceutical products (e.g., emergency contraceptive pills)</td>
</tr>
<tr>
<td>4</td>
<td>Instrumental precondition</td>
<td>Crime Lifestyle</td>
<td>Obtain information about clients and their health conditions</td>
</tr>
<tr>
<td>3</td>
<td>Instrumental initiation</td>
<td>Crime Lifestyle Network</td>
<td>Buy pharmaceuticals from international wholesalers in order to re-sell them as local retailers (commercial websites, auction websites)</td>
</tr>
<tr>
<td>2, 3, and 4</td>
<td>Instrumental actualization</td>
<td>Crime Lifestyle</td>
<td>Advertise pharmaceutical products (online pharmacies, commercial websites, auction websites, dedicated blogs and forums, dedicated online magazines, online social networks)</td>
</tr>
<tr>
<td>2, 3, and 4</td>
<td>Instrumental actualization</td>
<td>Crime Lifestyle</td>
<td>Advertise online pharmacies (dedicated blogs and forums, dedicated online magazines)</td>
</tr>
<tr>
<td>4</td>
<td>Instrumental actualization</td>
<td>Crime Lifestyle</td>
<td>Reassure clients about the safety and the legality of the sale (online pharmacies, dedicated forums)</td>
</tr>
<tr>
<td>4</td>
<td>Instrumental actualization</td>
<td>Crime Lifestyle</td>
<td>Reassure clients about the quality of the pharmaceutical product (online pharmacies, dedicated forums)</td>
</tr>
<tr>
<td>3 and 4</td>
<td>Doing</td>
<td>Crime</td>
<td>Sell of the pharmaceutical product (auction websites, dedicated forums)</td>
</tr>
<tr>
<td>3 and 4</td>
<td>Doing</td>
<td>Crime</td>
<td>Automated sell of the pharmaceutical product (order form on online pharmacies)</td>
</tr>
<tr>
<td>3 ,4, and 5</td>
<td>Doing/post condition</td>
<td>Crime Lifestyle Network</td>
<td>Customer loyalty strategies (online social networks, dedicated forums)</td>
</tr>
<tr>
<td>4</td>
<td>Post condition</td>
<td>Crime</td>
<td>Payment (prepaid cards that can be recharged online)</td>
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</tbody>
</table>
Results and discussion

Through the crime script framework, it was possible to classify different types of criminal opportunities made available by the Internet. The following subsections will (1) list the opportunities identified, (2) discuss the impact of these criminal opportunities with regard to both the criminal activity and the criminal networks or individuals involved, and (3) discuss some existing and potential approaches to countering the online trade in counterfeit pharmaceuticals.

The Internet as a facilitator: classifying criminal opportunities

Through the crime script conceptual framework, it has been possible to identify five main types of criminal opportunities provided by the Internet for the trade in counterfeit pharmaceuticals. A certain degree of overlap may exist between the different categories identified and, depending on the analytical needs, more fine-grained or coarse-grained classifications are possible (Author, 2014a). Nonetheless, such a framework helps to guide interpretation of how the Internet is impacting the online trade in counterfeit pharmaceuticals, particularly through underlining that the Internet is not just an enhanced communication tool among actors involved in illegal businesses. Indeed, over the last decade, the Internet seems to have deeply transformed the criminal market in counterfeit pharmaceuticals in a much more meaningful way, as it has done for other counterfeits (Treadwell, 2012).

1. Communicative opportunities: communication is facilitated among offenders and (potential) clients. Communicative opportunities affect the “crime” and ”lifestyle” categories and are mainly present in Stage 4, which regards the distribution of the pharmaceutical product to the final user (entry, instrumental precondition, instrumental actualisation, and doing). Communication generally occurs, for instance, via email spam and online pharmacies, so that in most cases it is unidirectional from the seller to the buyer.

2. Managerial opportunities: the management of the trade is made more efficient in the final stages of the trafficking chain (3 and 4) thanks to the automated sale of pharmaceutical products (doing). Managerial opportunities generally affect the script category “crime.”

3. Organisational and relational opportunities: the use of the Internet can modify the organisational layers of criminal networks, since it allows newcomers to interject themselves in the trafficking chain as local or even international retailers (preparation, entry, and instrumental initiation). The Internet can thus affect the external interactions of criminal networks, facilitating relationships among offenders as well as their contacts.
with (potential) clients. Organisational and relational opportunities mainly affect the stages of the trafficking involved in production and the interactions among international traders and local retailers. These opportunities affect all script categories.

4. **Promotional, marketing, persuasive, and loyalty-building opportunities**: both pharmaceutical products and the cyber-hotspots where they are sold are advertised via the Internet (instrumental actualisation). Furthermore, the Internet is also used as a retention tool for both new and old clients (doing/post condition) and to reassure (potential) buyers about the reliability and the legality of the trade, and the quality of the pharmaceuticals sold (instrumental actualisation). There criminal opportunities have been found in the final phases of the trafficking (stages 3, 4, and 5) and they particularly affect the script categories “crime” and “lifestyle.”

5. **Informational and targeting opportunities**: the Internet provides access to useful information for both clients and offenders. Informational opportunities may hide a severe danger for certain buyers, who could be encouraged to rely on self-medication (precondition). Regarding offenders, the Internet allows them to obtain information about clients and their health condition (instrumental precondition). In this way, therefore, customers can be profiled and online advertisements be tailored to their specific habits and needs. Furthermore, offenders can easily reach specific social groups online in order to increase their chances of concluding the sale.

While communicative and managerial opportunities mainly refer to the criminal act *per se*—for instance, by allowing offenders to easily and promptly adjust the trafficking activity to meet changes in demand—the other criminal opportunities identified have a broader scope and mainly concern relationships among all actors involved in the criminal activity, both offenders and clients, and their lifestyles. Therefore, not only has the Internet facilitated communication and enhanced efficiency, but it has also changed the internal organisation of criminal networks, affected the way in which they build new business ties with criminal peers and (potential) clients, and served as a resource to observe clients’ attitudes and spending habits in order to promote certain counterfeit pharmaceuticals. **Promotional, marketing, persuasive, and loyalty-building opportunities** seem particularly useful in a relatively new criminal activity which suffers from the lack of stable and harmonised legislation, so that sometimes clients are not fully aware that they are pursuing items sold illegally. Furthermore, the products trafficked might be assumed over a long period of time and it is in the interests of sellers to attract and retain old and new clients. In particular, when clients
become habitual, the Internet is used as a powerful tool to make clients feel part of the same social group. The use of so-called “social engineering”—i.e., the capacity offenders have to “persuade potential victims with emotional appeals such as excitement or fear or establish interpersonal relationships or create a feeling of trust and commitment” (Kshetri, 2010:10)—to commit cybercrimes has already been underlined (Kshetri, 2010; Glenny, 2011). From the findings of this research, it is possible to conclude that social engineering is a common tool also in many Internet-mediated trafficking activities, such as the online trade in counterfeit pharmaceuticals.

On the modus operandi and new identifiable trends

From the Stage column in the script framework it emerged that the Internet more significantly affects the phases of the trafficking chain where clients are involved, while it is almost irrelevant in the initial phases of production. This may be explained by the fact that in the countries where the pharmaceutical is produced, this criminal activity is still mainly run by criminal networks with a certain degree of sophistication that already have a convenient opportunity structure to rely on. For them, the primary reason to go online is to enter into contacts with potential clients and to globally increase their reach. Many investigations show the impressive transnationality of the online trade in counterfeit pharmaceuticals, as exemplified by the following case.

Case. Counterfeit POMs were sold in Italy by an online pharmacy (www.eurodrugs.eu, now obscured). The pharmacy pretended to have a physical address in the UK. The criminal network, headed by an Indian national, was in fact based in Switzerland, while the servers were in Canada and in the US. The supply chain management operated through drop-shippers—i.e., people in charge of storing items ready to be delivered—strategically placed in different European countries to avoid customs inspections (for instance, shipments to Italy were sent from Germany), while online financial operations were run in Eastern Europe (Interview material).

Until a few years ago, initial interactions with clients occurred through email spam or via online pharmacies, most of which operated on a very large scale. The following case provides a typical example of an illegal online pharmacy.
Case. Defendants A and B owned Pharmacom International Corporation, a company operating the online pharmacy www.buymeds.com (now obscured) and eighteen other affiliated websites, all systematically advertised online. In order to purchase POMs (mainly pain relief substances), potential customers had to log onto one of the websites, compile a short health history questionnaire, and provide credit card information. No medical records were required. Pharmacom was in contact with doctors that approved orders perfunctorily (Judicial material from the US District Court in Iowa, 576 F.Supp.2d 1000, July 2008).

As explained by an expert interviewee, online pharmacies underwent major transformation in the last few years, and three main phases can be identified: initially, the pharmaceutical sector suffered from poor control against crime, so that most offenders merely used online pharmacies resembling the original ones (which were allowed in countries such as the UK and the US) to sell counterfeits or to defraud customers via phishing activities. As Internet users started to become more informed, some offenders moved to new online pharmacies—presented as alternatives to the legal and notorious ones—where it was allegedly possible to buy generic pharmaceuticals directly from producers, without going through “Big Pharma” companies. Lately, according to the interviewee, some offenders hide the fact that the products sold are illegal by pretending that they are dietary supplements instead (which are regulated in a different, more lenient way).

However, regardless of the degree of concealment of the criminal market, online pharmacies remain the major cyber-hotspots for pharmaceuticals, even though currently they are no longer the only ones; especially with regard to doping products and lifestyle drugs, dedicated forums, social media, and online magazines are increasingly playing a bigger role in selling and advertisement.

Because of the primary need to reach a large number of potential clients, illegal and illicit trades in pharmaceuticals are carried out in the surface web (reachable by conventional search engines). The interviewees recalled only one Australian investigation of counterfeit medicines sold in the deep web (the hidden part of the web, inaccessible to conventional search engines, which can be reached, for instance, by using special software such as Tor) together with hard drugs. However, it might be that the absence of other similar cases results from the fact that online investigation of traditional trafficking activities is not yet a commonly used tool for law enforcement (Gilmour, 2014; Author, forthcoming), rather than from a real

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5 Phishing is an online scam that allows offenders to obtain financial or other confidential information from Internet users.
absence of this criminal activity in hidden parts of the deep web. Indeed, more recent investigations such as the ones regarding Silk Road (the notorious online underground marketplace taken down by the FBI on October 2013) have shown that, together with recreational drugs, highly-abused pharmaceutical medications were also sold in the deep web. Furthermore, as underlined by an expert on trafficking in doping products, many pharmaceuticals, and especially doping products, are often sold in conjunction with traditional and synthetic drugs to balance or enhance their effects⁶, so that it is not unlikely that there may be resemblances and connections also in their online markets (see, among others, the pioneering study of Schneider, 2003), including those in the deep web (Barratt, 2012).

Another change that can be observed in the criminal market is that some clients are assuming a new role, acting as traders themselves: in some recent investigations, pharmaceuticals are bought online in order to be re-sold. This fact has been confirmed by one of the interviewees, who stressed that while the typical package intercepted by law enforcement a few years ago used to contain about 20-30 tablets, now bigger packages of 150-200 tablets apiece are commonly intercepted. The entry of these new criminal actors—usually involved in smaller-scale or specialised trades but with dangerous potential—can be identified as a new trend.

The same interviewee also noted that certain online pharmacies indicate that in case of big orders, they will send pharmaceuticals divided in smaller shipments to escape law enforcement attention. Indeed, as reported by three different interviewees, so many packages are intercepted that when they contain quantities for personal use the tendency to ignore them. Therefore, entering the online market in counterfeit pharmaceuticals and doping products does not entail many risks for potential offenders.

In most cases, people who purchase pharmaceuticals to re-sell them act as local retailers offline. This is especially true as concerns two categories of pharmaceuticals: some lifestyle drugs such as the ones for erectile dysfunction—then sold in sex shops—and doping products—sold in gyms and other sport centres to both professional and amateurs. Rather than fostering the elimination of organisational layers (Author, 2014a), as regards the trafficking in counterfeit pharmaceuticals the Internet has added a new layer, especially when the market offers the possibility for segmentation—i.e., targeting subsets of clients who have

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⁶ Doping pharmaceuticals cannot be assumed uninterruptedly: a break of 1-2 weeks is needed every 2-3 weeks. When their assumption is interrupted, a “rebound effect” usually happens: the body tries to bring itself back into balance by pulling in the opposite direction of the drug, so that doped people may experience, for instance, strong depression. Cocaine and synthetic drugs (they are all “performance drugs”) are often used to restore the excitement. Another problem is that anxiolytic or sedative pharmaceuticals (such as barbiturates) could be needed to allow sleep when doping drugs is used. In many online pharmacies, the sale of sedative and doping products is often paired.
common needs and that can be reached though specific touch-points.

Case. Erythropoietin (EPO) (a blood doping drug that increases athletic performance and delays fatigue by artificially raising an athlete’s red blood cell count) and anabolic steroids (a class of hormones used to maximise muscle growth) were bought online in order to be re-sold in gyms and cycling societies in the Milan hinterland. A total of 102 persons were investigated and eight arrested. Pharmaceuticals were bought on dedicated commercial websites based in the US (such as www.massandpower.com and www.originalanabolics.com, now obscured) (Media news, September 2011, and interview material).

Case. Fourteen people (sports trainers and body builders) were arrested in Italy and charged with conspiracy after they sold doping pharmaceuticals and, in particular, anabolic steroids for almost one year. These products were bought via the Internet in Eastern Europe and re-sold in a shop dedicated to nutritional supplements for athletes in Northern Italy. They had 60 clients for a turnover of about 300,000 euros. One of the offenders had the specific role of using the Internet to cultivate customers’ loyalties by keeping in contact with them through emails and Facebook (Media news, May and September 2012, and interview material).

From the latter example it is possible to observe how the Internet can be used as a powerful retention tool: indeed, as emerges also from other cases, offenders selling certain types of pharmaceuticals—maliciously or not—target specific types of consumers that are inherently more prone to trust them. In this case, for instance, both sellers and buyers belong to the same social group (i.e., athletes), and are likely to share the same system of values and beliefs. Also in the case of pharmaceuticals, it is possible to say that the Internet fostered niche markets (Author, 2014a), even if, in this case, these markets are high-demand, mainstream ones.

In some recent investigations, however, people who buy pharmaceuticals via the Internet remain in the online market as retailers: in this way, individuals or small groups (often just two people) can start a (potentially) large-scale criminal market by interjecting themselves in the trafficking chain. Usually, as illustrated by the following two examples, offenders step into the market without intervening in the production stage, only in the packaging or even merely in the marketing.
Case. A couple (facilitated by crooked pharmacists and doctors) was illegally importing anorexiantks, such as sibutramine and phendimetrazine (mostly POMs). These pharmaceuticals were sold online via a dedicated website, which was heavily advertised in a forum thread on health and wellness on a popular Italian website dedicated to women. Three persons were arrested and 30 were investigated (Media news, May and September 2012, and interview material).

Case. A man set up a website to sell pharmaceuticals for erectile dysfunction (POM in most countries, included Italy). Medicine was bought from India at 40 cents each and delivered via regular mail throughout Italy for 7 euros each (Media news, February 2011).

One of the interviewees told of a recent investigation where a young man bought active ingredients and excipients from an international auction website in order to produce the tablets himself, which were then sold online. In another case, people trading counterfeit medicines “improvised,” making themselves into producers:

Case. A couple without any type of medical preparation was selling homemade medicines and dietary supplements (included one allegedly imported from the US) to miraculously cure several types of diseases—from cancer to depression. Some of the ingredients used were long expired. They set up an online pharmacy (www.naturafabene.it, now obscured) (Media news, May 2013, and interview material).

It is interesting to note how also in this case offenders were targeting their victims by looking for specific categories—i.e., people interested in natural and alternative treatments. Even the name they chose for their website (“nature is healthy”) makes this clear. It is safe to say that the Internet has maintained its core role in facilitating contact with potential clients, but this role is no longer limited to online pharmacies and spam. Targeted clients are reached also though different marketing strategies: rather than “shooting in the dark” by means of generic advertisements, case analysis has revealed how offenders (both wholesalers and retailers) solicit clients by appealing to their sense of belonging to certain social groups (as in the case of “natural”

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7 A very similar case was found in the UK (June 2009). In both cases, offenders were middle-age men without any type of medical expertise (respectively, an architect and a bankrupt businessmen already convicted in the past for selling steroids).
products, lifestyle drugs, and doping).

Apart from attention to targeting specific social groups, concrete efforts are also made to obtain the trust of clients online.

*Case.* An online pharmacy selling different types of OTC drugs and POMs displayed a Swiss number as a call centre to provide medical advice. However, calls were answered by the six men (four Italians and two French men) running the criminal activity from a storehouse in Northern Italy. In the law enforcement operation, pharmaceuticals worth three million euros were seized (Media news, June 2010, and interview material).

In other cases, the method of gaining the clients’ trust was to post enthusiastic comments by fake clients in online pharmacies and dedicated forums. However, criminal networks are careful not to overdo, lest they make law enforcement suspicious:

*Case.* Defendant A used to work for an online pharmacy specialising in diet and sleeping pills. Over the two years of the conspiracy (from May 2002 to May 2004), the pharmacy satisfied about 123,000 requests. Defendant A explained that the Internet company used to reject one to three orders daily to make it appear that the pharmacy was practicing legitimately (Judicial material from the US District Court in Florida, 2007 WL 2915856 (S.D.Fla.), October 2007).

**Countering the online trade in counterfeit pharmaceuticals**

The online trade in counterfeit pharmaceuticals is a continuously evolving criminal activity, responsive to transformations in the market economy and in law enforcement action. It is likely, for instance, that in times of economic crisis the Internet will be increasingly used to buy common pharmaceuticals, which might lead to new developments in this criminal market. What can be done to counter, or at least contain, the ever-changing and increasingly meaningful online trade in counterfeit pharmaceuticals?

Even as the Internet provides a new structure of criminal opportunities for offenders, it also affects criminals’ vulnerabilities. In particular, the Internet is changing the dynamics of social and institutional control. It has already been claimed that security in the Internet age will increasingly depend on international cooperation among a wide range of institutions, as well as on victims’ self-help, market forces, and
A number of initiatives have already been taken to prevent and counter the online trade in counterfeit medicines at both the national and international levels by public and private stakeholders. Some measures have been taken to raise consumers’ awareness by helping them to distinguish between legal and illegal online pharmacies, such as the Verified Internet Pharmacy Practice Sites (VIPPS) program (a hyperlink seal to be displayed on the online pharmacy’s webpage if it complies with certain standards) established by the US National Association of Boards of Pharmacies (NABP) in 1999. Also pharmaceutical companies may play a pivotal role in tackling the criminal trade in pharmaceuticals: for instance Pfizer, one of the world’s largest companies, in May 2013 took the unusual step of selling its famous erectile dysfunction drug (Viagra) directly from its website in order to counter its illegal sale online. A challenging but fundamental task, however, remains: that of monitoring online pharmacies. The main service in this field is currently provided by LegitScript, a private actor tracking online pharmacies and dangerous health products. As concerns law enforcement, the role of Interpol has to be mentioned: it coordinates Operation Pangea—i.e., an annual week of action that brings together law enforcement, regulatory agencies, and private stakeholders from several countries to target online trade in counterfeit pharmaceuticals. However, given the enormity of the environment to be controlled, these top-down measures are necessarily limited. Therefore, it is likely, and desirable, that also informal social controls will assume more responsibility in countering this dangerous online trade. In this sense, collective responses of users and e-patrol groups might become essential. Raising the awareness of potential consumers is the first step.

Conclusion

The use of the Internet has certainly affected the organisation of the trade in counterfeit medicines, making it a profitable and large-scale criminal business that deserves more attention from criminologists, since this is a topic with meaningful implications for both the health of buyers and their confidence in e-commerce. In particular, recent changes in the way in which the Internet is commonly employed by average users have boosted specific changes in this criminal market.

This article provides an updated description of a cutting-edge issue in criminological research, and consequent insights for general policy approaches. It points to changes in the cyber-hotspots (mis)used by

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offenders, and notes the use of social engineering techniques and other modus operandi by criminal actors to reach potential clients. Even more importantly, this contribution challenges the conventional belief that organised crime is the only relevant actor in this domain by pointing out the presence of new criminal actors, especially individuals and loose criminal networks that efficiently exploit the new structure of criminal opportunities provided by the Internet. From a methodological point of view, by applying an innovative crime script model in an area where it has not yet been used, this contribution shows the possibilities offered by this approach for investigating the transformative impact of the Internet.

Before concluding, it has to be remarked that script analysis is generally used as the starting point for situational crime prevention, the criminological approach aiming at decreasing the opportunities for crime by intervening in its immediate environment (Clarke, 1992/1997). Indeed, in order to identify potential points of intervention in the offender's decision-making process, situational crime prevention teaches us to think about a crime by breaking it up into the sequential phases of its commission. While the script model used in this study was very useful as an analytical tool to organise data and to interpret them systematically in order to provide a detailed description of the current situation, it has purposely not been used for situational crime prevention. Script analysis is very crime-specific and it has proved particularly helpful in identifying key points for intervention for simpler forms of crime; when applied to more complex transnational activities, such as the online trade in counterfeit pharmaceuticals is, it has served as a valid framework to examine criminal opportunities, but its role in identifying proper preventive measures was proved to be limited (Moreto and Clarke, 2013). In order to use a script model to identify possibilities for intervention in further research, it would be necessary to narrow down the level of analysis so to prepare a sort of “second-level” script for each of the Internet-vulnerable phases in the trafficking chain identified in the proposed “first-level” script. Pinpointing the system of opportunities criminals exploit in the Internet is just a preliminary step. It is hoped that this contribution will encourage other researchers to further study how Internet usage is changing the characteristics of crime: only by understanding how the Internet is misused for criminal activities will it be possible both to adequately tackle criminal activities in a new battlefield, and to prevent them by targeting offenders where it is more efficient.