

A script analysis of the distribution of counterfeit alcohol across two European jurisdictions

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Abstract This article presents a script analysis of the distribution of counterfeit alcohols across two European jurisdictions. Based on an analysis of case file data from a European regulator and interviews with investigators, the article deconstructs the organisation of the distribution of the alcohol across jurisdictions into five scenes (collection, logistics, delivery, disposal, proceeds/finance) and analyses the actual (or likely permutations of) behaviours within each scene. The analysis also identifies underlying and routine activities and processes connecting each scene at the intersections of licit and illicit markets and networks as we see the 'integration', 'incorporation', 'de-integration' and 'allocation' of the illicit product at various stages and under particular conditions. Furthermore, the article analyses the required resources, equipment and relations of the distribution in addition to examining the actors involved by utilising a social network analysis to link specific actors to specific roles in specific scenes. Likely deception points in the script are presented in order to inform the intervention and disruption strategies of the regulator. Our core argument is that in this case, distribution is most

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vulnerable where the illicit product is integrated into and then de-integrated out of the licit system and that increased capable guardianship is necessary at these critical points.

Keywords Crime scripts · Counterfeit goods · Routine activities · Capable guardianship · Network analysis

Introduction

When researching serious crimes, such as counterfeiting, it is critical to consider both how they are organised and the conditions that shape this organisation over time, rather than viewing them as being simply the activities of 'organised crime' gangs (Edwards and Levi 2008). Thinking in these terms allows us to consider both the localised nature of serious crimes and how such localised actions have global connectivity (see Hobbs 1998). This orientates our thinking towards understanding the activities of criminal enterprise as being more 'disorganised' than 'organised' with connections between different criminals being driven by what is required to commit the crime within particular contexts and under particular conditions rather than by the skills of an 'organised crime gang' (see Paoli 2002). It also allows the understanding to be focused on *how* crimes are organised rather than *who* organises them - this is more than a semantic distinction (Van Duyne 1995) - and provides the opportunity to use both a social network analysis to understand the connections between actors and a script analysis to understand the skills and resources required to successfully commit the crime.

This article presents an analysis of the organisation of the distribution of counterfeit alcohols across two adjacent European jurisdictions and considers the local and transnational conditions that shape this. The International Trademark Association (INTA) defines counterfeiting as 'the practice of manufacturing, importing/exporting, distributing, selling or otherwise dealing in goods, often of inferior quality, under a trademark that is identical to or substantially indistinguishable from a registered trademark, without the approval or oversight of the registered trademark owner'.¹ Wall and Large (2010) identify three types of counterfeiting: counterfeiting of safety critical goods (e.g. aircraft parts), counterfeiting of luxury goods (e.g. clothing) and copyright piracy (e.g. computer software). Alcohol may span two of these categories: the safety critical category, due to the potential harm that can be caused by counterfeit alcohol, especially to the consumer; and the luxury goods category as some alcohol brands have a luxury status attached to them (e.g. Scottish Whisky).

In the context of alcohol, several well-known and widely consumed brands, particularly vodka and wine, have been counterfeited and in recent years there have been seizures of such illicit alcohol products across European jurisdictions. This reflects world-wide seizure trends as indicated by Operation OPSON, a now annual joint initiative of EUROPOL and INTERPOL since 2011 that aims to identify and disrupt the networks of criminal enterprise involved in the trafficking of fake goods.² Operation

¹ http://www.inta.org/TrademarkBasics/FactSheets/Pages/Counterfeiting.aspx

² https://www.europol.europa.eu/content/largest-ever-seizures-fake-food-and-drink-interpol-europol-operation

OPSON V, that took place between November 2015 and February 2016, involved police, customs, national food regulatory bodies and partners from the private sector from across 57 countries, requiring checks to be undertaken at shops, markets, airports, seaports and industrial estates. This resulted in the largest ever seizures of fake food and drink.

Taking the UK as one example, as part of Operation Opson V, the 'authorities recovered nearly 10,000 litres of fake or adulterated alcohol including wine, whisky and vodka'.³ In the UK there have been several seizures of counterfeit alcohol and raids of filtration plants making fake brand-name vodkas. In 2011 five Lithuanian men died in an explosion when the still they were using to manufacture alcohol at an illegal distillery exploded while three lorry loads of counterfeit vodka, falsely labelled as Smirnoff, was also discovered.⁴ In December 2014 a raid in Derbyshire discovered 'more than 20,000 empty bottles ready for filling, hundreds of empty five-litre antifreeze containers which had been used to make the counterfeit alcohol, as well as a reverse osmosis unit used to remove the chemical's colour and smell' (Interpol 2015⁵). This raid also seized a large number of fake bottle tops, unauthorized brand-marked boxes and used labels. In March 2015 the investigation of a pub landlord in Consett, County Durham, for selling fake vodka that contained ingredients 'used to make antifreeze, disinfectant and fuel' was widely reported.⁶ In August 2015 it was reported that 130,000 l of counterfeit vodka was discovered in Widnes⁷ and since August 2015 there have been further prosecutions for the sale of counterfeit vodka where 'analysis showed the seized spirits were not genuine and were below the required alcoholic strength for vodka'.⁸ In December 2015 in County Louth, Ireland, a cross-border operation (UK/ Ireland) discovered a counterfeit vodka plant where over 4000 bottles of counterfeit vodka in addition to false labels and UK tax stamps were seized.9

Disrupting the organisation of the criminal enterprise of counterfeit alcohol is necessary to reduce the many associated health and fiscal harms. However, detection is difficult. For instance, McKee et al. state that many counterfeit alcohols 'are similar in composition to the products they imitate, and the major risk to health probably comes from excessive consumption of ethanol because of the cheap price. It is impossible to tell without testing, however, which of these products contain other potentially toxic contaminants' (McKee et al. 2012: 1). Counterfeit alcohols, particularly odourless spirits such as vodka that are also often used with mixers, are often consumed unbeknown to those who drink them. There are cases of the serious consequences of drinking counterfeit alcohol, however, it makes no 'business' sense for the counterfeiters to harm consumers, this can only be damaging to their enterprise. Relatedly, the supply and distribution of counterfeit alcohols is also shaped by the demand for cheap alcohol by consumers in markets where detection is less forthcoming. For instance,

⁶ http://www.chroniclelive.co.uk/news/north-east-news/consett-landlord-face-criminal-investigation-8864132

³ https://www.europol.europa.eu/content/largest-ever-seizures-fake-food-and-drink-interpol-europol-operation

⁴ http://www.bbc.co.uk/news/uk-14375153

⁵ https://www.europol.europa.eu/publications-documents/operation-opson-iv-case-stories

⁷ http://www.thegrocer.co.uk/buying-and-supplying/food-safety/hmrc-uncovers-130000-litres-of-counterfeit-

vodka-on-widnes-industrial-estate/522674.article

⁸ http://www.gazettelive.co.uk/news/teesside-news/fake-vodka-skippers-lane-firm-10428650

⁹ http://www.irishtimes.com/news/crime-and-law/over-4-000-bottles-of-counterfeit-vodka-seized-in-co-louth-1.2451907

seizure data indicate that counterfeit alcohol is often discovered in establishments associated with the night-time economy where consumers are possibly less discerning in their consumption. Educating potential victims around the risks of counterfeit alcohol and increasing awareness about the indicators of potential counterfeiting, such as suspiciously low prices, remains underdeveloped.

The seizure data collated through Operation OPSON provide the only available insight into extent and scope but these data probably provide only relatively conservative estimations of the full extent of the problem. Furthermore, fragmented domestic regulation, for example in the UK, where responsibility lies with multiple authorities with competing agendas such as the Food Standards Agency (food safety), trading standards (intellectual property rights), and HMRC (tax and duty evasion), and restricted access to data sharing software¹⁰ (e.g. Memex for national intelligence) creates problems for accessing comparable data across various localities. The lack of reliable and valid secondary, comparable data presents difficulties for deductively identifying trends and regularities in the production and distribution of counterfeit alcohol and this reinforces the suitability of focusing, more inductively, on the organisation and 'scripts' of particular cases with a view to establishing the necessary and contingent dimensions of such behaviours.

This article presents a 'script' analysis of a counterfeit alcohol distribution network across two European jurisdictions. We first present the 'script analysis' framework, briefly discussing its emergence as a tool for systematising knowledge on the procedural aspects of criminal behaviours and demonstrating its utility for informing the enforcement response of responsible regulators. Second, we present the methodology and data sources. Third, based on an analysis of case file data from a European regulator and interviews with investigators, we go on to deconstruct the organisation of the distribution of the alcohol across jurisdictions into five scenes ('collection', 'logistics', 'delivery', 'disposal', 'proceeds/finance') and analyse the actual (or likely permutations of) behaviours within each scene. The analysis also identifies underlying and routine activities and processes connecting each scene at the intersections of licit and illicit markets and networks as we see the 'integration', 'incorporation', 'deintegration' and 'allocation' of the illicit product at various stages and under particular conditions. At this point, we also analyse the required resources, equipment and relations of the distribution in addition to examining the actors involved by utilising a social network analysis to link specific actors to specific roles in specific scenes. Deception points in the script are presented in order to inform the intervention and disruption strategies of the regulator.

Our core argument is that in this case distribution provides a means of understanding how the supply of counterfeit alcohol is organised so as to make it available into a number of different selling locations. In this case the distribution was organised utilising the legitimate business practices of logistics. For the criminals there was an element of risk, that the consignment might be discovered – as in this case it was, however, there was also an element of protection using the cover that legitimate business provided. In order to maximise the use of business practices as a cover the consignment needed to be integrated as a legitimate product into the logistics chain at

¹⁰ There are 12 types of database that hold intelligence on food incidents and the data available in these is not always compatible for comparative analysis (see NAO 2013: 23).

the beginning of its distribution journey and de-integrated at the end of journey, that is taken back into the ownership of the criminal enterprise. The integration and deintegration are two critical risk points and it is our contention that increased capable guardianship is necessary at these critical points.

Script analysis: Deconstructing the crime commission process

The counterfeiting of alcohol, including its production and distribution, is inherently a form of 'market-based', 'enterprise' crime (see Naylor 2003; see also Albanese 2012, Edwards and Gill 2002) that usually requires reliance upon or integration into licit markets and legitimate business environments (e.g. pubs, supermarkets, logistics companies). In terms of markets, like illicit drugs, actors involved in counterfeiting have multilateral relations of exchange and transactions with others such as producers, distributors, retailers and money managers on the supply side and willing buyers and consumers on the demand side (see Naylor 2003: 85). Illicit alcohol is offered for sale where there is a pool of potential consumers. Buyers and consumers most likely believe they are purchasing a licit product, although they may be aware of or suspect its illicit origin (e.g. if it is unusually cheap). There are inherent trading relationships where transactions occur within 'dirty' or 'grey' markets (Edwards and Gill 2002: 204). The actors involved may be wholly illegitimate, criminal actors or groups, but actors that have legitimate business roles in the licit marketplace, either to provide an appearance of legitimacy to conceal illicit enterprise or because they are unwitting facilitators of the counterfeiting, can also be involved. In the analogous area of food fraud it has been argued that such behaviours are better understood as endogenous phenomena within the legitimate food system, rather than being perpetrated by wholly external actors, and this orientates our thinking to consider the blurred legitimacy of implicated actors (Lord et al. forthcoming). In any case, central to such market transactions and contexts, and our focus here, is the distribution of such illicit alcohol and understanding how these behaviours are organised is vital for the control response.

To understand the organisation of the distribution of illicit alcohol consideration of the interplay between the remote distal causes and conducive conditions, situational opportunities and routine activities, and the networks of relationships, whether preexisting or more ephemeral, that exist and enable offenders to cooperate and conspire, is essential (see Edwards and Levi 2008: 363). Central to this is an analysis of the crime commission process and it is here that 'crime script analysis' is a successful approach to developing analytical and prevention-focused thinking to disrupt the behaviours of organised criminals (Levi and Maguire 2004: 429). It is an analytical framework that enables 'a careful and comprehensive analysis of the nature of the problem to be addressed, including developing a clear understanding of the various crime scenes, actors and their resources' (Levi and Maguire 2004: 457).

Script analysis was first developed by Cornish (1994: 160 emphasis in original) as 'a way of generating, organizing and systematizing knowledge about the *procedural aspects* and *procedural requirements* of crime commission. It has the potential to provide more appropriately crime-specific accounts of crime commission, and to extend this analysis to all the stages of the crime-commission sequence'. The analysis can involve general 'universal scripts' to more specific 'tracks' within the general

script. Cornish (1994: 157) suggests 'the apparent simplicity of criminal behavior may be a function of its routinized production, which serves to conceal important features of its organization, sequencing and acquisition'. This idea can be integrated with the script concept whereby the script is known as an "event" schema, since it organizes our knowledge about how to understand and enact commonplace behavioral processes or routines' (Cornish 1994: 158). Thus,

'scripts can be divided up into scenes involving smaller units of action, or plans required to achieve major sub-goals. Indeed, the term "scene," in everyday parlance, suggests episode, location, background, and plan of action all at the same time. Scripts also have roles associated with them; require props, such as setting "furniture" and facilitators; and take place in a variety of specified locations' (Cornish 1994: 159)

Scripts therefore provide a way of understanding the logistical steps (not necessarily linear or sequential, allowing for flexibility and actor innovation) that take place across different scenes. Within each 'scene', different permutations of the 'facets' that make up the different ways the behaviours can be accomplished can be found. Underpinning the script approach is an assumption of rational choice for understanding offending behaviours and decisions that can be prevented by intervening with the situations within which they take place (Clarke and Cornish 1985). Thus, the logic behind the approach is that criminality is understood as rational, goal-oriented and purposive behaviour and that by understanding the procedural aspects of these behaviours, suitable intervention mechanisms can be mapped onto their scripts. However, by focusing on the specifics and mechanics of the crime commission process, the approach does not fully inform an understanding of wider market drivers and social conditions (e.g. supply and demand including consumer preferences, market competition) or the heterogeneity of offender motivations (e.g. whether financially motivated at an individual level or structurally shaped by business pressures). Similarly, the approach does not sufficiently illuminate the organisational and institutional pressures and factors that shape offending behaviours by actors in the course of their occupations over time, though we can begin to understand why certain choices might be made under differing conditions.

That said, the script analysis approach has been persuasively applied to a range of criminal enterprise such as: drug manufacturing in clandestine laboratories (Chiu et al. 2011), the online stolen data market (Hutchings and Holt 2015), human trafficking for sexual exploitation (Savona et al. 2013), infiltration by the Mafia of the public construction industry (Savona 2010), the switching of Vehicle Identification Numbers from wrecked to stolen vehicles (Tremblay et al. 2001), illegal waste activity (Thompson and Chainey 2011) and in conjunction with social network analysis in relation to stolen-vehicle exportation operations (Morselli and Roy 2008). The increasing use of this approach in relation to serious and complex organised crime reflects the simple yet effective way through which the complete sequence of actions and decisions before, during and after a crime and across all stages of crime commission can be identified, thereby giving a fuller range of possible intervention points that has clear crime reduction and disruption potential for law enforcement and regulatory authorities.

Methodology and data sources

The research emerged out of discussions with a European regulator responsible for food safety, food fraud and food crime. The regulator had been investigating a number of related cross-border cases involving the distribution of counterfeit vodkas and wines. The regulator provided access to extensive and detailed investigation case files and permitted interviews with those investigators involved in pursuing the cases. These discussions with the regulators involved obtaining information on the nature and organisation of the distribution activities and the network connections, backgrounds and histories of the actors involved in the enterprise. Over the six-month period we met with the regulators 11 times but also had a form of open communication using the telephone and via email for further correspondence. Approximately 150 documents were included in these files, which took many forms: offender profiles, intelligence reports, email exchanges with cooperating authorities, consignment and delivery data, communications with logistics firms, communications with brands/manufacturers, photographic evidence from the locations of the behaviours, press releases, media reports, website and social media adverts, and seizure data. The research was funded by the University of Manchester Research Institute and took place over a nine-month period from January 2016 to September 2016.

This research was guided by the following questions: how we can better understand the distribution of illicit alcohol from one jurisdiction to a bordering one by applying the 'script' approach? Which processes and behaviours must involved actors undertake to accomplish the distribution? Which roles do specific actors play at different stages of the distribution? To address these questions, the script analysis method was undertaken simultaneously to a social network analysis. The data were coded into Excel files to show the actors in the network (including people, organisations, locations and resources), relationships between actors (existence and type of relationship), location of actors, and the 'scene(s)' to which the actor belonged. The coded data were then imported into UCINET and a multi-node, multi-link network analysis (Carley 2003) was carried out. This article foregrounds the script analysis but also incorporates elements of the network analysis. The case data provided/used related to a series of subsequent and connected investigations by the regulator and associated bodies into the distribution of counterfeit Dale's and Viin vodka across the two jurisdictions. These cases have been given the names, 'North case', 'Delivery Ltd. case' and 'Rural case', and are summarised in the following section.

Case studies¹¹

North case

In September 2013, 26 pallets containing over 17,000 l of counterfeit Dale's Vodka was seized at North Port (see Fig. 1). The consignment was being transported from a storage facility located in jurisdiction A by a haulage company, Haulage Co., based close to the storage facility. The storage facility, owned by Patrick, offers a range of services

¹¹ All names of individuals, brands, and organisations are fictional for anonymising the real actors and locations.

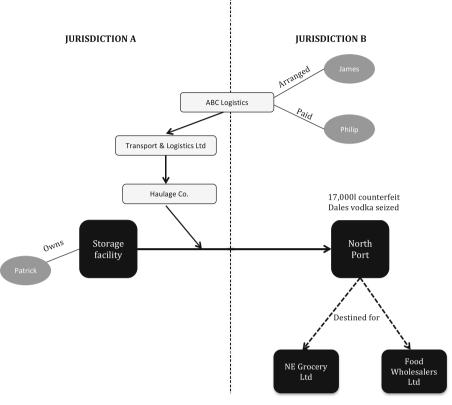


Fig. 1 North case

including commercial storage space, and allows collection and delivery to this space. The destination of the seized consignment was two companies in the North area: NE Grocery Ltd. (10 pallets) and Food Wholesalers Ltd. (16 pallets). Haulage Co. had subcontracted the delivery of these pallets from an haulier based in jurisdiction A (Transport and Logistics Ltd), which, in turn, had sub-contracted the delivery from ABC Logistics, a logistics and freight forwarding company with bases in both jurisdictions. The arrangements for the collection and delivery of the pallets were made by James, who provided an address in a major city in North and described the consignment as cases of Pellegrino bottled water. Payment was made by another individual, Phillip, based in the North area, who paid £1200 to ABC Logistics. Philip has also been implicated in a seizure of counterfeit vodka in nearby town to the seizure at North Port.

Delivery Ltd. case

Seven months later, in April 2014, 1000 bottles of counterfeit Dale's Vodka were seized from Food Wholesalers Ltd., a company owned by Paul (and previously owned by his father, Alan) (see Fig. 2). The following day, in the same area, 120 bottles were seized from John, as he was unloading them from his car into another vehicle outside his house. The content of these bottles was found to be industrial alcohol diluted (1:3) with

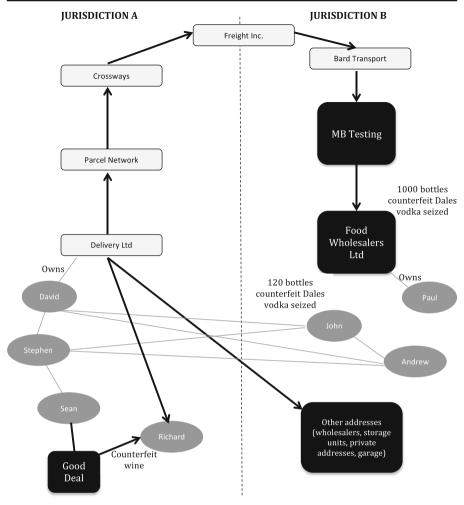


Fig. 2 Delivery Ltd. case

water. The bottles that were seized from Food Wholesalers Ltd. had the same identification numbers embossed in the base, and the same counterfeit caps and labels, as the bottles from the North seizure in September 2013. The bottles seized from John's car had a slightly different identification number, but as with the others, were confirmed as being numbers not previously used for legitimate Dale's Vodka bottles. John stated that he had bought the counterfeit vodka online, and that he had planned to sell the bottles to friends for a few pounds profit on each. However, local authorities involved in investigating the case had reason to believe that the bottles found in John's car did actually come from the consignment seized at Food Wholesalers Ltd.

The counterfeit vodka had been sent to Food Wholesalers Ltd. by David, the owner of Delivery Ltd., a courier firm based in Jurisdiction A. The two pallets containing the boxes of vodka were addressed to MB Testing, an MOT testing centre close to the location of Food Wholesalers Ltd. However, when the delivery arrived at MB Testing, a mechanic there told the driver to take it to Food Wholesalers Ltd. David sent the counterfeit vodka to Food Wholesalers Ltd. (by way of MB Testing) through Parcel Network. Parcel Network had been delivering two pallets to the MB Testing address on a reasonably regular basis since October 2013 until the seizure at Food Wholesalers Ltd. in April 2014; it is believed that all these consignments contained counterfeit alcohol. The two pallets that were seized at Food Wholesalers Ltd. had been dropped off at the Parcel Network office by Delivery Ltd., for onward delivery. This may have been done by David himself, or one of his employees, as Delivery Ltd. has a fleet of couriers who use their own vans.

Parcel Network represents a network of several individual jurisdiction Abased transport companies. One of these companies, Crossways, which specialises in transport and logistics between jurisdiction A and B, transported the consignment destined for Food Wholesalers Ltd. from the Parcel Network office to a transport hub in the Central area of the jurisdiction B. Its onward transportation to its final destination was arranged by Freight Inc., an international freight network, whose network members include Crossways and Bard Transport. Bard Transport took the pallets of counterfeit vodka to MB Testing, and then on to Food Wholesalers Ltd. at the request of the MB Testing employee. Parcel Network does not require its customers to advise it of the contents of their consignments, and the pallets of counterfeit vodka boxes were completely wrapped in black plastic.

David, the owner of Delivery Ltd., has also sent a number of deliveries via Parcel Network to other addresses in various parts of jurisdiction B, including a fruit and vegetable wholesalers, café, storage units, wine and beer wholesalers, a garage, and private addresses. It has not been confirmed that these consignments involved counterfeit alcohol.

Rural case

Also in April 2014, 20 cases of counterfeit Dale's and Viin vodka were seized in a van on a motorway in the south of jurisdiction A. The markings on these bottles matched those in the North Case and Food Wholesales Ltd. seizures. Therefore, it appears that all three seizures relate to the same source of counterfeit vodka. There are a number of evident links between the three cases. Firstly, Food Wholesalers Ltd. is a delivery destination for both the North and Delivery Ltd. cases. There are links between the bottles, caps and labels in all three cases, indicating they come from the same source. There are also personal links: one of Philip's employees is friends with John on Facebook, and John is friends on Facebook with Stephen and Sean (see below).

The deliveries arranged by David through Parcel Network began in October 2014, with the first consignment sent to MB Testing at the beginning of that month. This is just after the seizure at North Port and, therefore, suggests that the mode of distribution between the jurisdictions was changed as a result of that seizure. There were no further related deliveries to jurisdiction B arranged by David through Parcel Network subsequent to the seizure at Food Wholesalers Ltd. Distribution to jurisdiction B may have been stopped at this point, or another alternative mode of distribution commenced.

Further links and seizures

There is reason to believe that two brothers from jurisdiction A, Stephen and Sean, the latter involved in the supply of illicit alcohol in jurisdiction A, are involved in the distribution network, as Stephen is linked via social network sites to David, John, and John's brother, Andrew. In July 2014, 142 cases of counterfeit wine were seized from an address in South City in jurisdiction A. They had been bought from Sean by an individual buyer (Richard) via an advert on the Good Deal website¹²; the buyer had previously bought wine from Sean in May 2014. Both orders were sent to Richard by David (owner of Delivery Ltd) via Parcel Network. The buyer met Sean in a local hotel to pay for the wine he had ordered, where he was also offered vodka by Sean.

Scripts, scenes and processes: Organising the distribution of counterfeit alcohol

In this analysis, we focus on the specific 'track' of distribution. Within this 'track', there are various 'facets' (i.e. permutations of ways of accomplishing the enterprise) but the case files permit our analysis to identify with some certainty which specific behaviours took place. To facilitate the distribution of the counterfeit alcohol it is imperative that there is a network of supply to ensure the flow of the illicit product. One of the problems for those trading in counterfeit alcohol is to 'place', undetected, this illicit product in the legal market so that the counterfeit alcohol gains legitimacy as the 'genuine' product. During the analysis of the case file data relating to the above cases, we identified five key scenes: collection, logistics, delivery, disposal, proceeds/finance. Connecting each scene are underlying processes related to the criminal enterprise: integration, incorporation, de-integration, allocation. These scenes and processes are visualized in Fig. 3 and elaborated below.

We made a number of assumptions. First, prior to distribution, it was assumed that the illicit alcohol had been manufactured, bottled and labeled to give it the appearance of an authentic product. Second, at the production stage, we also assumed that the illicit alcohol had been pre-packaged for transportation i.e. shrink-wrapped and physically concealed making observation of the contents not possible without interference. Third, ahead of distribution, the illicit alcohol could have been stored at either a legitimate or illegitimate location. Legitimacy here refers to whether the storage premises are part of, or a standalone, legal and commercial enterprise that is formally accessible to a wide range of businesses or lawful actors. Legitimacy may be contested or blurred in that actors who are part of a criminal enterprise may, unknown to a legitimate business location, conceal illicit products behind it. Fourth, we assumed the illicit alcohol consignment is maintained as one consignment until 'scene 3' where it is broken down into multiple consignments (see below).

¹² This is an anonymised name for a legitimate website in order to maintain confidentiality.

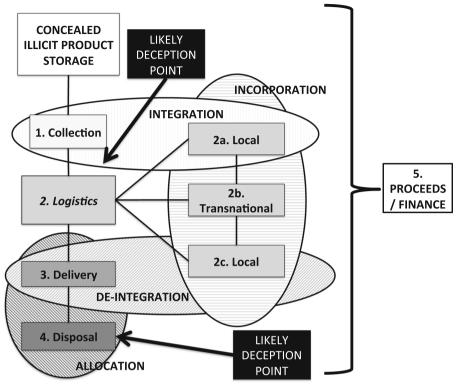


Fig. 3 The distribution script - scenes and processes

Scene 1: Collection

In the North case Philip (jurisdiction B) paid ABC Logistics, a legitimate logistic company with bases in both jurisdictions, to collect and transport the product from the storage point owned by Patrick to two final destinations in North: NE Grocery Ltd. (10 pallets) and Food Wholesalers Ltd. (16 pallets), which are both legitimate firms. In the Delivery Ltd. case David is contracted to collect and transport the product from the storage point to the local delivery hub ahead of transnational transportation (Parcel Network-Crossways-Freight Inc.-Bard Transport). All the transport and logistics firms are again legitimate commercial enterprises. As the seizure in the North case precedes those of the Delivery Ltd. case, we consider Patrick and David as the actors in charge of collection (with Patrick key as the owner of the storage facility), and therefore belonging to two facets of the same scene. Official paperwork is provided to the subsequent logistics company making the consignment look as an otherwise legitimate transaction/contract. Once the consignment has been taken on by the logistics company, a process of integration into a legitimate logistics chain has occurred, as the illicit product is no longer under the direct control of the criminal enterprise. At this point, a first-stage deception has occurred as the legitimate logistics company is the victim of dishonesty and/or misrepresentation. This point of deception represents a vulnerable transaction as those involved in the enterprise no longer possess direct control over the illicit product and the risks of detection increase. Situational intervention at this transactional stage presents a plausible approach to increasing the risks inherent in the criminal enterprise.

Scene 2: Logistics

The second scene of the distribution script involves the transportation of the illicit product through three primary phases: 2a. Local logistics (i.e. the movement of product from the courier delivery point domestically to the port or point at which the product begins the cross-jurisdictional logistical path); 2b. Transnational logistics of the product across borders; 2c. Local logistics in the target jurisdiction as the product moves via logistics depots before delivery to designated receiver. In the North case ABC Logistics sub-contracted the delivery to Transport and Logistics Ltd., which in turn subcontracted it to Haulage Co., both Jurisdiction A based legitimate logistic companies. Haulage Co. is therefore the company that collected the goods from Patrick's storage point. In the Delivery Ltd. case David is contracted to collect and transport the product from the storage point to the local delivery hub ahead of transnational transportation (Parcel Network-Crossways-Freight Inc.-Bard Transport). All the transport and logistics firms are again legitimate commercial enterprises. As the seizure in the North case precedes those of the Delivery Ltd. case, we consider ABC Logistics - Transport and Logistics Ltd. - Haulage Co. and Parcel Network - Crossways - Freight Inc. - Bard Transport - Delivery Ltd. as two facets of the logistics scene.

The contracted and subcontracted companies are unwitting facilitators of the movement of the illicit product. These businesses appear to be utilised to conceal the movement of the illicit alcohol due to their subcontracting practices that layer and distance the product from the source, these business practices are part of normal logistics operations and simply reflect routine procedures. The incorporation of the illicit product into commercial enterprise and markets means that the illicit product's transportation is parasitical on normal business practice. The criminal actors at the point of origin could have opted to smuggle the illicit product across borders and thus avoided any form of integration or incorporation into legitimate business until the point of sale via licensed retailers. The legitimate business structures offer one of the optimal methods of transporting illicit alcohol between the two jurisdictions. There is an abuse/misuse of legitimate business by criminal enterprise and this illustrates a clear interdependency between illicit and licit networks and criminal enterprise in this case.

Scene 3: Delivery

The third scene of the script involves the de-integration of the illicit alcohol back into the control of the criminal enterprise. At this point we see the re-connection of the criminal network through the illicit product. In the North case the delivery was made to NE Grocery Ltd. and Food Wholesalers Ltd. owned by Paul. In the Delivery Ltd. case deliveries were made in the first instance to MB Testing, where they were diverted to Food Wholesalers Ltd.; other deliveries were made by David to addresses in various parts of jurisdiction B, including a fruit and vegetable wholesalers, café, storage units, wine and beer wholesalers, a garage, and private addresses. It has not been confirmed that these consignments involved counterfeit alcohol. We assume that these locations represent alternative facets of the same delivery scene, and that the actors receiving the product must be 'trusted accomplices', although the investigation case only provides information about Paul, owner of Food Wholesalers Ltd. An obvious law enforcement intervention point is as the illicit product moves from the legitimate logistics networks back into the control of the criminal enterprise. Intervention at this point could increase the difficulty to de-integrate the product undetected.

Scene 4: Disposal

The fourth scene of the script is the distribution of the illicit product to multiple consumer outlets. At this point we see a second stage of deception as the buying outlets, but more likely the consumers of alcohol in licensed premises, are the victims of deception and misrepresentation. It may be reasonable to argue that some form of concerted ignorance or wilful blindness occurs as vendors, purveyors and consumers seek to buy cheap alcohol. The numerous geographical locations, individuals and online markets involved in disposal, as evidenced in the cases, are all alternative facets of the disposal scene. This second stage of deception presents a further intervention point. If awareness can be raised amongst consumers and purveyors of the illicit alcohol, in relation to the harms of counterfeit products, they may be less inclined to buy/sell products that have likely been counterfeited and this can in turn reduce the rewards associated with the product and criminal enterprise.

Scene 5: Proceeds / finances of crime

This fifth scene is not necessarily the last scene but more likely occurs at various stages, particularly in scenes 1 and 4. Those implicated (criminal) actors will need to conceal and maintain control of proceeds (cash or electronic) and launder into usable assets or reinvest. Sales transactions are likely to be cash which creates difficulties for monitoring and detection. However, given the reliance on legitimate business structures, the proceeds of crime at some stage must be hidden as an otherwise legitimate business transaction (e.g. purchase of water) creating obstacles to 'following the money'. Some profits may need concealing and laundering but this can be done legitimately e.g. via dividends/wages to employees of fake companies. If using illegitimate buyers, proceeds are likely to be cash/product and may need to be laundered. In the North case Philip is the only actor associated with payments, while in the Delivery Ltd. case Andrew, Sean and Stephen are all involved in finance. These actors are therefore considered alternative facets of the same scene. The money component of the enterprise represents an area suitable for situational intervention. For instance, the profits and assets of the criminal enterprise can be confiscated in an attempt to remove associated rewards while those third party actors (e.g. accountants, lawyers, and so on) that may wittingly, unwittingly, or incompetently facilitate the laundering of the proceeds can also be targeted to increase risks and difficulties associated with the distribution.

Actors and markets

Within the scenes of the distribution script there are many different types of actors. Some are linked to the distribution network, buying the illicit alcohol occasionally and when necessary, and others are integrated into the supply and distribution networks. These actors exist within blurred boundaries of legitimacy and knowingness where they may occupy seemingly legitimate business roles but also know of the criminal enterprise or be entirely legitimate and unknowing of the enterprise. Analysing these actors and their market locations with binary concepts (i.e. legitimate or not, knowing or not) is problematic. Instead, thinking linearly in terms of spectrums of legitimacy and knowingness provides a more useful conceptualization of where these actors can be found. Figure 4 visualises these spectrums and places the scenes according to the legitimacy and knowingness of the primary actors involved.

The ellipses in Fig. 4 reflect the primary actors involved in each scene of the distribution network in terms of their primary location within legitimate markets and as legitimate actors, and the extent to which they know of the criminal enterprise. The horizontal spectrum encapsulates the notion that binary distinctions between legitimate and illegitimate markets and actors are analytically problematic. Instead, market actors may be located at various points between being entirely legitimate or entirely illegitimate as their roles incorporate multiple behaviours, relations and processes. For instance, 'collection' actors such as David may routinely be involved in otherwise licit market transactions yet may occasionally or persistently also take on contracts where there is knowledge of an illicit product. However, the primary actors in the left hand side of the spectrum appear to have legitimate occupational roles within the market, whereas those on the right hand side operate outside of legitimate markets, instead transacting within the context of illegitimate markets, there is overlap evident in some scenes.

The vertical spectrum illustrates whether actors involved in the distribution knew or not that they were involved in the distribution of the illicit alcohol. As above, we view this as a blurred, linear spectrum as while involved actors may be fully aware or entirely oblivious to the enterprise, some actors are likely to fall within a 'grey' area. For instance, those logistics actors involved in distribution may suspect criminality but

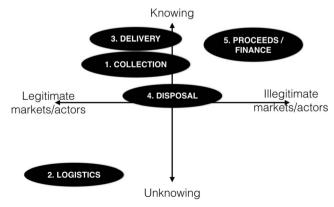


Fig. 4 Legitimacy and knowingness of distribution actors

concertedly ignore this to maintain their business turnover. Similarly, retailers buying cheap alcohol may question the low cost but may prefer to 'turn a blind eye', particularly if the product is not likely to be detected or cause harm. Such 'grey' areas present challenges for law enforcement authorities, making it difficult to prove when a higher level of complicity was involved. They also raise questions about levels of competence and the due diligence of these actors, in terms of scrutinising the products they transport or buy/sell.¹³

In terms of markets, the distribution and exchange of counterfeit alcohol usually occurs within legal markets, within illegal markets, or involve an intersection of both. In distinguishing illegal markets per se from illicit enterprise within legal markets, it can be argued in the former 'both sides must know that the trade involves a contravention of law' (Beckert and Wehinger 2013: 7). In the cases analysed there is evidence of transactions where buyer and seller knew of the illicit product and also where buyers were unaware, thinking they were purchasing genuine alcohol. That said, while singular transactions may involve deception, the cases analysed all demonstrated a clear integration of the illicit product within the legal market. A key argument here is that legitimate markets provide opportunities for concealment and abuse of criminal enterprise. Beckert and Wehinger (2013: 9) argue that markets in counterfeit goods are distinct as 'the exchange does not necessarily constitute a distinct market in itself' although separate illegal markets may exist if both transacting parties are aware of the counterfeited nature of the product. It is clear that 'an understanding of different market structures is a necessary precursor to explaining how different traders apprehend the constraints and opportunities provided in these markets and thus why certain markets contract whilst others expand' (Edwards and Gill 2002:219). This is recognised at the EU-level where it is argued that '[a]s is the case for legitimate businesses, distribution is a critical issue for the operations of the counterfeiters, who use and abuse weaknesses in infrastructure and supply chains to cover their tracks and make detection more difficult' (Europol/OHIM 2015: 5).

Networks, roles and routine activities

The 'business behaviour' of counterfeiters is of particular interest. As Edwards and Gill (2002: 218) note,

'entrepreneurs are often driven by routine and habitual preferences, prejudice and emotional attachments etc. (c.f. Bourdieu 1990), by virtue of which they seek to invest their resources and conduct their business with other traders. Indeed the very failure to adopt rational, utility-maximising, approaches to the calculation of the risks, effort and rewards associated with particular enterprises is often the reason for their collapse. If this is the case with licit enterprise it is likely to be even more so where illicit trade is concerned'.

Related to the script analysis approach is routine activities theory (Clarke 1997). As recognised in the above quote, the production and distribution of counterfeited alcohol

¹³ Some actors may use incompetence as a useful rationalisation should they be implicated in the enterprise.

by actors operating within legitimate markets are most likely to utilise their otherwise routine daily business practices to facilitate the criminal enterprise. As the cases demonstrate, the distribution of counterfeit alcohol involves motivated offenders, some of who are legitimate actors in the market undertaking fraudulent activities that are hidden within their otherwise legitimate routine behaviours and daily business practices (see also Benson and Simpson 2015), in an attempt to squeeze residual profit from exceedingly tight margins. For example, the small retail outlet licensed to sell wines and spirits but unable to compete with the larger retailers who can purchase in large quantities and sell at a cheaper price, or the bar owner competing in a night-time economy that thrives on cheap alcohol deals, attempting to squeeze a little more from already tight margins. The key issue is that these offenders have a bona fide position within the market. This makes their fraudulent behaviour more difficult to predict and detect as their financial and commercial transactions are, for the most part, legal and non-criminal. Counterfeit alcoholic spirit provides opportunities at the level of the market where profit margins are tight, so there is a motivated offender, an opportunity for the offence plus a lack of capable guardianship (Cohen and Felson 1979). However, understanding the heterogeneity of motivations can be difficult, and 'a key challenge for developing our understanding of illicit enterprise is to pursue a more qualitative interpretation of the actual decision-making processes engaged in by illicit traders' (Edwards and Gill 2002:218).

Within these routine behaviours, we can also seek to understand how offenders cooperate and adapt in realising their enterprise (see Felson 2006). To better understand these dynamics, that is, the roles and interactions of the primary and secondary actors across the distribution network in these cases, we can integrate a social network analysis. A social network analysis approach complements the script analysis by providing the analytical tools to understand how these actors are embedded in the structure of distributing counterfeit alcohol, some occupying central positions, while others being more peripheral. For instance, it can be argued that 'the network is a fundamental feature in crime scripts and that placing a greater focus on it will help identify intervention points across various crime-commission processes' (Morselli and Roy 2008: 75). Further detail on the network analytical approach in this research is provided by Bellotti et al. (in preparation). Social network analysis adds to the script analysis as it links the distribution network to the supply network, but also allows us to distinguish between the licit and the illicit aspects of the whole process, and to understand the risks and advantages associated with the integration and deintegration of illicit goods into licit procedures. We do not have space here to analyse all roles within the network, but to demonstrate the utility of integrating script analysis with social network analysis (in line with Morselli and Roy 2008) we briefly present an analysis of how we can understand which nodes in the distribution script are central to connecting the various scenes.

Brokering across essential 'scenes'

In legitimate business operations brokers play significant roles in ensuring that networks are innovative, creative and integrated (Morselli and Roy 2008) and this logic applies also to the organisation of criminal enterprise that operates with business-like strategies. By calculating betweenness centrality (Freeman 1979) and brokerage relations (Gould and Fernandez 1989) we can gain an understanding of which actors are most central to connecting actors and nodes across the network and how integral they are at 'brokering' actor relations across scenes.

The social network analysis indicated that in the above cases, actors involved in scene 5 'proceeds/finance' scored highest, implying activities related to the financial proceeds of the enterprise and the monies used for payment of contracts are essential for the organisation of the distribution network. This implies that focusing on the 'money component' provides a route for intervention and disruption. Additionally, actors (and geographical/business locations) within scene 4 'disposal' also scored highly. This suggests storage locations for, and 'sellers' of, the counterfeit alcohol, are also central to the functioning of the enterprise. Philip, Sean and Food Wholesalers Ltd. scored highest in terms of their centrality to the functioning of the distribution network and for the brokerage roles they play. Other central actors are David (in scene 1 'collection') and John (in scene 4 'disposal').

According to Gould and Fernandez (1989), there are five types of brokerage role whereby actors may assume positions in the network as 1. coordinators, 2. consultants, 3. gatekeepers, 4. representatives, and 5. liaison.¹⁴ Our analysis indicated that David is the actor with the highest number of brokerage positions and he has an essential role in connecting the distribution network. For instance, David is in charge of connecting scene 3 'delivery' with all other scenes except for scene 2 'logistics'. Scene 2 is more or less independent from the others, given the fact it is outsourced to legal local and international transport networks and therefore concealed beyond the façade of legitimate business. Philip does not occupy many brokerage roles compared to David, but he liaises between all scenes including logistics (he is the only actor that connects logistics with other scenes). His profile indicates an important managerial role that oversees all aspects of the criminal enterprise. John has a similar profile to Philip, acting as liaison, although he occupies overall fewer brokerage positions. He appears to be the second most important actor in the organization. Interestingly, our data do not report on any personal tie between Philip and other members of the organization. This could be due to the lack of available information, which hides the connections between those potentially in charge of the criminal enterprise, but could also be an intentional covert strategy, to keep Philip detached from other key members and therefore insulated from investigations by the regulator. Finally, Sean's position indicates that his role concentrates mostly on disposal and proceeds: together with the fact that he is also the person with the highest betweeness centrality score, we believe he is also a very important actor in the network, especially in regards of the financial aspects of the crime. However, in the interviews with regulators the role of Sean was not a focal point as he was perceived as a more distant figure due to what could be seen as his tangential position in the investigation. Social network analysis suggests that Sean is a more important and central figure than the investigation narrative of the regulators reveals.

¹⁴ In a situation where A sends a tie to B who sends a tie to C and there are no ties between A and C, the five possible brokerage roles of B are: Coordinator - A, B and C belong to the same group; Itinerant broker (consultant) - A and C belong to the same group, while B belongs to a different one; Gatekeeper - A and B belong to the same group, while C belongs to a different one; Representative - B and C belong to the same group, while A belongs to a different one; Liason - all the actors belong to different groups.

Guardianship and situational intervention

Networks are central to illicit enterprise and to function well they need some level of 'secrecy' in order to keep elements of actions and behaviours hidden from specific type of audiences (e.g. regulators). Secrecy facilitates network resilience that is determined by the level of vulnerability (e.g. reliance on one main actor), elasticity (e.g. ability to replace actors or reestablish the network after disruption) and adaptivity (e.g. modify to changing circumstances) (Bouchard 2007). Networks are also more effective if they have access not only to actors and ties, but also to resources, and if these actors, ties and resources are multiple (Krebs 2002); and, if they are embedded in overt and legitimate networks (Gimenez-Salinas Framis 2013). The distribution network shows a good level of *elasticity*, as it seems that once the North route was disrupted, the Delivery Ltd. route was put in place to restore the connection between the jurisdictions. The multiplication of the delivery facets also seems to indicate a good level of *adaptivity*, which also relies on multiple actors, resources and locations. More difficult is to discuss the level of *vulnerability*, as the covertness of the network does not allow observing the full consequences of disrupting the North Port route. The fact that we could identify several brokers in strategic positions from which they can easily manage and monitor the whole criminal process suggests a healthy level of *resilience* of the network, which seems capable of surviving on-going investigations.

In line with the script analysis framework, it is our contention that situational measures can be developed to intervene with and disrupt such criminal enterprise and this aids the activities of responsible regulators, making them more capable guardians. For example, if there was an increase in the need for transparency of transport consignments at the point of collection and delivery this would increase the need for due diligence by transport companies to ensure that they are transporting what is stated on the manifest. This would by necessity increase the level of guardianship and make the use of legitimate logistic networks more problematic for the criminal enterprise. Other strategic interventions such as stricter licensing regulation may be one way to remove the pressure to sell cheap alcohol.

Conclusion

This article has presented a crime script analysis of three overlapping cases of the distribution of counterfeit alcohol across two bordering jurisdictions. By deconstructing the commissioning of the distribution into five scenes and detailing the behaviours within each scene, we have identified how central network actors undertake key processes and how these actors are connected across the criminal enterprise. Supplementing script analysis with social network analysis enables an understanding of which actors and scenes are integral to the enterprise and this permits the development of suitable intervention measures. By introducing capable guardianship at critical points, it is our contention that such entrepreneurial criminality can be disrupted. While the findings in this article are specific to the cases analysed, the extension of the analytical approach to further cases can inform understandings of commonalities and differences across distribution networks in the context of counterfeit alcohol (and other illicit products). This can in turn provide regulators with more preventative and disruption focused mechanisms to supplement current reactive responses to enforcement.

Compliance with ethical standards

Conflict of interests Nicholas Lord declares that he has no conflict of interest. Jon Spencer declares that he has no conflict of interest. Elisa Bellotti declares that she has no conflict of interest. Katie Benson declares that she has no conflict of interest.

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Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

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References

Albanese J (2012) Deciphering the linkages between organized crime and transnational crime. J Int Aff 66(1): 1–18

Beckert J, Wehinger F (2013) In the shadow: illegal markets and economic sociology. Soc Econ Rev 11:5–30 Benson M, Simpson S (2015) Understanding white-collar crime. Routledge, London

Bouchard M (2007) On the resilience of illegal drug markets. Global Crime 8(4):325-344

Bourdieu P (1990) The Logic of Practice, Cambridge, Polity Press

- Carley KM (2003) Dynamic network analysis. In: Breiger R, Carley K, Pattison P (eds) Dynamic social network modelling and analysis: workshop summary and papers. The National Academies Press, Washington
- Chiu YN, Leclerc B, Townsley M (2011) Crime script analysis of drug manufacturing in clandestine laboratories: implications for prevention. Br J Criminol 51:355–374

Clarke R (ed) (1997) Situational crime prevention: successful case studies. Harrow and Heston, Guilderland

- Clarke RV, Cornish DB (1985) Modeling offenders' decisions: a framework for research and policy. Crime and Justice 6:147–185
- Cohen LE, Felson M (1979) Social change and crime rate trends: a routine activity approach. Am Sociol Rev 44:588–605
- Cornish DB (1994) The procedural analysis of offending and its relevance for situational prevention. Crime Prevention Studies:152–196

Edwards A, Gill P (2002) Crime as enterprise. Crime Law Soc Chang 37:203-223

- Edwards A, Levi M (2008) Researching the organization of serious crimes. Criminol Crim Just 8(4):363–388 Europol/OHIM (2015) 2015 Situation report on counterfeiting in the European Union, Europol/Office for Harmonisation in the Internal Market (OHIM)
- Felson M (2006) The ecosystem for organized crime. Helsinki, European Institute for Crime Prevention and Control Freeman LC (1979) Centrality in social networks: conceptual clarification. Soc Networks 1:215–239

Gimenez-Salinas Framis A (2013) Illegal networks or criminal organizations: power, roles and facilitators in four cocaine trafficking structures. In: Morselli C (ed) Crime and networks. Routledge, New York

- Gould RV, Fernandez RM (1989) Structures of mediation: a formal approach to brokerage in transaction networks. Sociol Methodol 19:89–126
- Hobbs D (1998) Going down the glocal: the local context of organised crime. The Howard J Crime Justice 37(4):407–422

Hutchings A, Holt TJ (2015) A crime script analysis of the online stolen data market. Br J Criminol 55:596-614

Interpol/Europol (2015) Operation Opson IV - Case Stories, Europol. Available at: https://www.europol. europa.eu/publications-documents/operation-opson-iv-case-stories

- Krebs V.E. (2002) Uncloaking terrorist networks. First Monday 7(4), April. Available at: http://pear.accc.uic. edu/ojs/index.php/fm/article/view/941/863
- Levi M, Maguire M (2004) Reducing and preventing organised crime: an evidence based approach. Crime Law Soc Chang 41:397–469
- Lord, N., Flores Elizondo, C. and Spencer, J. (forthcoming) The dynamics of food fraud: the interactions between criminal opportunity and market (Dys)functionality in legitimate business. Criminol Crim Just
- McKee M, Adany R, Leon DA (2012) Illegally produced alcohol. BMJ 344:e1146 Available at: http://www.bmj.com/content/344/bmj.e1146?variant=long&hwshib2=authn%3A1468595679 %3A20160714%253Aec61b1f8-ffbc-4591-a950-7fb31b24e164%3A0%3A0%3A0%3AE1Rpfp7 ehXaSSEQ0QpRu1w%3D%3D

Morselli C, Roy J (2008) Brokerage qualifications in ringing operations. Criminology 46:71-98

National Audit Office (2013) Food safety and authenticity in the processed meat supply chain, the food standards agency, department for environment, food & rural affairs, department of health. Available at: https://www.nao.org.uk/wp-content/uploads/2014/10/10255-001-Food-safety-and-authenticity.pdf

Naylor RT (2003) Towards a general theory of profit-driven crimes. Br J Criminol 43:81–101

Paoli L (2002) The paradoxes of organised crime. Crime Law Soc Chang 37(1):51-97

Savona E (2010) Infiltration of the public construction industry by the Italian organized crime. In: Bullock K, Clarke RV, Tilley N (eds) Situational prevention of organized crimes. Willan Publishing, Cullompton

- Savona E, Giommoni L, Mancuso M (2013) Human trafficking for sexual exploitation in Italy. In: Leclerc B, Wortley R (eds) Cognition and crime: offender decision making and script analyses. Routledge, London
- Thompson L, Chainey S (2011) Profiling illegal waste activity: using crime scripts as a data collection and analytical strategy. Eur J Crim Policy Res 17:179–201
- Tremblay P, Talon B, Hurley D (2001) Body switching and related adaptations in the resale of stolen vehicles. Script elaborations and aggregate crime learning curves. Br J Criminol 41:561–569

Van Duyne P (1995) The phantom and threat of organized crime. Crime Law Soc Chang 24(4):341–377 Wall D, Large J (2010) Jailhouse frock. Br J Criminol 50:1094–1116