The Formation and Development of Illicit Performance and Image Enhancing Drug Markets: Exploring Supply and Demand, and Control Policies in Belgium and the Netherlands

De Vorming en Ontwikkeling van Prestatie- en Uiterlijkbevorderende Drugsmarkten: een Onderzoek naar Vraag en Aanbod, en het Reguleringsbeleid van België en Nederland.
(met een samenvatting in het Nederlands)

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I declare that the thesis is my own work and has not previously been submitted for a degree at any other Universities. I have not used commercial doctoral advisory services and have not used any sources or aids other than those listed in the thesis.

Abstract

This research explores the understudied phenomenon of performance and image enhancing drug (PIED) markets by examining the structure and formation of the market for PIEDs in the Netherlands and Belgium. Furthermore, this study aims to understand and analyse the actors that operate in the PIED dealing environment. In particular bodybuilding is adopted as a case study. Finally, this thesis examines how the PIED control system and its application influence these respective markets.

Chapter one introduces the global PIED problem, the policy options currently available to deal with it, and its connection to anti-doping and sport. Chapter two begins by reviewing the literature on PIED use and its supply, and reflects on the anti-doping and PIED policies that seek to regulate this market. In chapter three the theoretical contours of this dissertation are developed. Chapter four describes the research methods which form the empirical bases of the findings chapters. Chapter five focuses on the general characteristics of PIED suppliers, and the ways in which the actions of PIED dealers are influenced by the market cultures in which they operate. Chapter six examines the importance of socio-cultural factors in the formation and development of PIED dealing networks within bodybuilding subcultures. Chapter seven analyses and describes the characteristics of the Belgian and Dutch PIED markets, and unravels the complex relationship between the two. Chapter eight explores the illegal production of steroids in the Netherlands and the flourishing Internet trade in Belgium. Chapter nine assesses the harms related to the production and distribution of PIEDs, and accounts for the effects that Belgian and Dutch PIED policies may have on this illicit market. Finally, in chapter ten, the main findings of this dissertation are summarized, future research endeavours are considered and policy implications are drawn from the analysis.

This thesis illustrates that social systems of rules and values, and in particular the embeddedness of culture, are important factors in our efforts to comprehend illicit PIED markets. Specifically, 'the beliefs, norms, 'tools', rules and behaviours appropriate to a cultural setting are key factors for understanding the structure of PIED markets and greater attention must be given to the role played by socio-cultural factors in influencing the market behaviour of criminal groups and individuals. Nevertheless, this thesis also demonstrates that it is imperative to examine the production, distribution and use of PIEDs, as embedded within a diverse combination of social, economic and cultural processes. Indeed, the structure and formation of illicit PIED markets are shaped by a variety of factors including the types of PIEDs dealt within them, the characteristics of the users, the social structures which sustain them, the cultural and economic context in which the markets exist, and market forces (e.g. technical innovations, drug policies).

Samenvatting (Dutch Summary)

Prestatie- en uiterlijkbevorderende middelen (PUBM), zoals anabolen en afslankpillen, worden in toenemende mate beschouwd als een gevaar voor de volksgezondheid. Een specifieke zorg van antidoping autoriteiten en overheidsinstanties is dat deze middelen met name worden verkregen via de semi-illegale markt, in plaats van via artsen of andere legale kanalen. Het is lastig om genuanceerd beleid op te stellen, omdat er tot nu toe beperkt wetenschappelijk onderzoek is gedaan naar de productie en distributie van PUBM; huidig onderzoek richt zich voornamelijk op het gebruik van dergelijke middelen. Voor het ontwerpen, implementeren en evalueren van politie-interventies, harm reduction-initiatieven en andere maatregelen is meer onderzoek naar de illegale handel en productie in PUBM dan ook noodzakelijk. Dit onderzoek exploreert hoe de semi-illegale PUBM-markt zich vormt en ontwikkelt in Nederland en België. Een ander belangrijk onderdeel van dit onderzoek is gericht op het begrijpen en analyseren van individuen die opereren in de PUBM-markt; de bodybuilding subcultuur is hiervoor als een casestudy gebruikt. Tot slot, exploreert deze studie hoe verschillende vormen van drugsbeleid en de toepassing hiervan van invloed zijn op de markt voor PUBM. Voor dit onderzoek is gebruik gemaakt van twee jaar durend veldwerk binnen de bodybuilding scene (bijv. bodybuilding competities), 47 semigestructureerde interviews met individuen die direct of indirect verbonden zijn met de markt voor PUBM-middelen (o.a. autoriteiten en handelaren), een inhoudsanalyse van 64 opsporingsonderzoeken en ander secundair materiaal (bijv. inbeslagname statistieken), en een analyse van tien anabolen-verkopende websites.

Hoofdstuk een is een introductie van het globaal PUBM-probleem, de verschillende beleidsopties die momenteel beschikbaar zijn voor het reguleren van deze semi-illegale markt en het verband met anti-doping en sport. Hoofdstuk twee is een review van de literatuur over het gebruik en de handel in PUBM, en biedt een nadere beschouwing van het huidige anti-doping- en PUBM-beleid in Nederland en België. In hoofdstuk drie wordt het theoretische kader van dit onderzoek ontwikkeld. Hoofdstuk vier beschrijft de onderzoeksmethoden die de empirische basis vormen voor de hoofdstukken die volgen. Hoofdstuk vijf richt zich op de algemene eigenschappen van PUBM-handelaren, en de manier waarop de acties van PUBM-dealers worden beïnvloedt door de marktcultuur waarin ze opereren. Hoofdstuk zes onderzoekt het belang van sociale en culturele factoren in de formatie en ontwikkeling van PUBM-handelsnetwerken binnen bodybuilding subculturen. Hoofdstuk zeven analyseert en beschrijft de eigenschappen van de Belgische en Nederlandse PUBM-markt, en onderzoekt de complexe relatie tussen de twee landen. Hoofdstuk acht onderzoekt de illegale productie van anabolen in Nederland en de florerende internethandel in België.

Hoofdstuk negen evalueert de individuele, economische en sociale schade gerelateerd aan de productie en handel van PUBM, en onderzoekt de effecten die het Belgische en Nederlandse beleid hebben op de PUBM-markt. Tot slot, in hoofdstuk tien, worden de hoofdbevindingen van dit onderzoek samengevat, worden mogelijkheden voor toekomstig onderzoek overwogen, en worden de (eventuele) implementaties van het PUBM-beleid besproken.

Het onderzoek toont aan dat we drugs en criminaliteit moeten zien binnen een drieledig kader van structuur, cultuur en agency, om te kunnen analyseren hoe de PUBM-markt zich in de tijd en binnen verschillende contexten ontwikkelt. Het is belangrijk te beseffen dat iedere factor binnen dit kader van enig belang is. De structuur en formatie van semi-illegale PUBM-markten worden beïnvloed door het type drugs dat wordt verhandeld, de eigenschappen van de gebruiker, de sociale structuren die deze markten ondersteunen, de culturele en economische context waarbinnen deze markten bestaan en andere 'markt invloeden' (bijv. drugsbeleid of technische uitvindingen). Al deze aspecten werken samen in het creëren, vormen, ontwikkelen en onderhouden van de semi-illegale PUBM-markt.

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List of Abbreviations

AAS	Anabolic-Androgenic Steroids
GH	Growth Hormone
HED	Human Enhancement Drug
NADO	National Anti-Doping Agency
PED	Performance Enhancing Drug
PIED	Performance and Image Enhancing Drug
UGL	Underground Laboratory
WADA	World Anti-Doping Agency

Chapter 1

Introduction

"*I know what steroids did for me. It made me superhuman*"
(Matt Herges, former Major League Baseball player)

The search for human enhancement has a long history. From the gods of Greek mythology to the superheroes of 20th century comic books, we are intrigued by the idea of transcending our biological limitations, to become better than our human bodies and genetics currently allow. Many of us strive to look better, become stronger and healthier, to be more intelligent, etc. Most individuals will try to enhance those functions by exercising, eating a balanced diet, drinking coffee, meditating, and so on. However, some take this a step further by consuming 'enhancement drugs'. Human enhancement drugs (HEDs) or 'life-style drugs' are pharmaceutical drugs which are used to improve the quality of life, to enhance human attributes or abilities, rather than alleviating or curing disease (Flower, 2004).

HEDs may be divided into six categories: muscle drugs (e.g. steroids), weight-loss drugs (e.g. 2,4-Dinitrophenol (DNP)), image enhancing drugs (e.g. Melanotan II), sexual enhancers (e.g. sildenafil), cognitive enhancers (e.g. methylphenidate), and mood and behaviour enhancers (e.g. diazepam)[1] (Evans-Brown et al., 2012). One specific area of interest within the spectrum of HEDs, are drugs that are more frequently associated with professional, amateur and recreational sport: the muscle enhancers, weight-loss drugs and image enhancing drugs. These three categories are commonly referred to as performance and image enhancing drugs (PIEDs) or better known in elite sport as 'doping substances'. Some consider the term "PIEDs" as just another word for lifestyle drugs or HEDs (e.g. see Corazza et al., 2014), however as PIEDs are strongly associated with sport and tend to include substances that improve sporting performance (e.g. EPO) and/or physical appearance (e.g. steroids), in this research they are considered a subset of HEDs.

The focus in this dissertation will be on PIEDs and not other types of HEDs (e.g. sexual enhancers). Indeed, it goes beyond the scope of this research to include all these different types of enhancers. Further, an important element of

[1] The different types of HEDs may be used for various enhancement purposes and are not necessarily used for one type of enhancement. For instance, Melanotan II is used for its tanning effects but is sometimes also used for its sexual properties.

this research is to examine the intertwinement of anti-doping and domestic policies. The main substances used in professional, amateur and recreational sports are muscle enhancers, weight-loss drugs and image enhancing drugs in an effort to enhance sporting performance or for cosmetic reasons, hence the name *performance* and *image* enhancing drugs. For this reason I have chosen to focus specifically on this segment of the illicit HED market. Furthermore, while there is a large variation in the types of PIEDs used, the most commonly used substances are anabolic androgenic steroids (AAS) (a.o. Koert and van Kleij, 1998, 2002; Evans-Brown et al., 2012). AAS are the oldest and largest type of HEDs that have been consumed since at least the late 1940s (Evans-Brown et al., 2012). However, the drug consumption of users is not just confined to AAS, as they often take a mix of PIEDs, in addition to stacking different types of steroids (Evans, 2004). These 'steroid-accessory' drugs are used for a variety of reasons. For instance, due to the side effects of AAS certain illegal substances are used to counteract these effects (e.g. Nolvadex)[2]. The main focus of this dissertation, therefore, will be on the supply of AAS, and the steroid-accessory drugs that go along with the use of AAS.

Although PIEDs have often been approved for specific medical purposes (e.g. the use of steroids to treat low testosterone in men), these substances are increasingly being taken to satisfy non-medical or non-health-related goals (Flower, 2004). Indeed, the use of drugs for the purpose of non-medical human enhancement is a steadily growing phenomenon (Evans-Brown et al., 2012). Due to a growing awareness of non-athletic PIED use, and the supposed adverse health effects that go with it, these substances are now considered to pose a serious public health problem, instead of being simply a sport issue (Sagoe et al., 2014a). A particular concern is that the use of PIEDs by non-athletes occurs without medical supervision[3], and in amounts that greatly exceed recommended therapeutic doses (Larance et al., 2005).

Another issue, central to this research, is that the majority of PIEDs are not legally obtained through a physician, by means of a prescription, but instead are illegally purchased on the illicit market for PIEDs (e.g. Koert & van Kleij, 1998; Oldersma et al., 2002; Paoli & Donati, 2014). Some authors suggest that the illicit market for enhancement drugs rivals, if not exceeds, the use of the more traditional illegal drugs such as the cocaine and heroin markets (Compton & Volkow, 2006). In particular, sport officials and state authorities suggest that economically motivated individuals and dangerous groups are driving the illicit market for PIEDs, and specifically 'mafia-type' organized crime is considered to be the main culprit (Fincoeur et al., 2014). Sport officials, such as the World Anti-

[2] An example is that after using AAS the natural production of testosterone may be suppressed. For this reason substances are used that promote the recovery of the endogenous testosterone production.

[3] Most elite athletes who use PIEDs are medically supervised by physicians and therefore are less at risk than non-athletic users (Hoberman, 2002, 2014; D'Hont, 2007).

Doping Agency (WADA), argue that the influx of money into global sports over the past decade has attracted the criminal underworld and led to an explosion in the illicit trade of PIEDs, and a greater potential for match-fixing (The Guardian, 2013, February 15). For instance, law enforcement authorities estimate that around 25 percent of all PIEDs come from the black market (Play True, 2011, issue 1). These products lead back to the health concerns outlined above as they are, at times, manufactured in unsanitary conditions with ingredients of questionable origin and efficacy, and therefore threaten the health and even the lives of those tempted to use PIEDs (Play True, 2011, issue 1).

As a result of these doping concerns surrounding crime and public health, doping or PIEDs are no longer considered an issue confined within elite sporting boundaries, but rather have become a problem that permeates other areas of our society (e.g. use of steroids in high schools) (Howman, director-general WADA, 2014, May 6). The expansion of the doping threat to include the social body has been driven in large part by two complementary claims echoed in unison by the anti-doping movement, the media and policy makers around the world. The first claim is that the use of PIEDs is a threat to public health. The second, and more recent claim is that PIEDs are a criminal justice issue (Hoberman, 2012; Fincoeur et al., 2014). While some attention has been paid to the criminalization of users and athletes, the focus of the anti-doping movement and its proponents has tended to be on those who supply PIEDs. Subsequently, the anti-doping movement has called for greater coordination among law enforcement, and the establishments of legal frameworks at the domestic level aimed at the distribution of PIEDs. The political and legislative response to these health and organized crime claims has been overwhelming.

Supranational bodies such as the European Union (e.g. White Paper on Sport) and UNESCO (e.g. UNESCO Convention against Doping in Sport) have supported and advocated for the application of criminal law to anti-doping, and anti-doping officials have formed alliances with law enforcement agencies (e.g. Interpol). Further, numerous countries have begun to criminalize PIEDs and doping, and governments around the world are paying more attention to the doping phenomenon by committing more legal resources to the consumption and illegal distribution of PIEDs. For instance, Belgium and France have established specialized anti-doping police units (Fincoeur et al., 2014), while other countries such as Sweden and Denmark have implemented anti-doping initiatives apart from elite athletics and in the public arena (Christiansen, 2011). Indeed, police interrogation and information sharing between National Anti-Doping Organizations (NADOs) and legal authorities appear to play a central role in the future of anti-doping (Møller, 2014). This research aims to explore these claims and consider the policy developments that are occurring in response. This is particularly important as such claims of organized criminal networks and economically motivated actors, while driving anti-doping and social policies,

have yet to be empirically substantiated and, more importantly, contrary evidence exists (ACC, 2011; Fincoeur et al., 2014; Paoli & Donati, 2014).

While several studies have focused on the supply side of PIEDs (Koert & van Kleij, 1998; Oldersma et al., 2002; Donati, 2007; Maycock & Howat, 2007; Kraska et al., 2010; Paoli & Donati, 2014; Fincoeur et al., 2014), the topic has been generally ignored in criminology and other related disciplines (Paoli, 2012). Instead, most research tends to favour the consumption side of the phenomenon, in particular in relation to elite sport. In addition, several studies on PIED use mention the source users obtain their products from but do not explore this issue at greater length (e.g. see de Boer et al., 1996; Striegel et al., 2006). PIEDs in general are also neglected in comparison to the study of other illicit drugs (e.g. cannabis, MDMA) and specifically the phenomenon of new psychoactive substances (NPS) is shadowing it. Nevertheless, despite the lack of research and knowledge on the supply and consumption of PIEDs, zero-tolerance seems to dominate the current political debate in the fight against PIED use, and law enforcement strategies are increasingly being used against athletes and other non-medical users, and their suppliers (McNamee & Tarasti, 2011; Hoberman, 2012).

Understanding illicit drug markets is important for policy decisions as knowledge on the production and distribution of drugs may assist in designing and evaluating source country interventions, other law enforcement efforts, harm reduction initiatives and treatment (Ritter, 2006). It is, therefore, imperative to examine this illicit market and to explore the effects that current anti-doping and PIED policies may be having on the illicit market for PIEDs.

1.1 Research questions and objectives

The aim of this thesis is to explore the understudied phenomenon of illicit PIED dealing networks by examining how such networks form and develop within and between the Netherlands and Belgium. This research explores the social background, resources and cultures that drive these contemporary illicit markets, and aims to understand and analyse the actors that operate in the PIED dealing environment. Another key contribution of this study is to examine how the PIED control system and its application influence these respective markets. Belgium and the Netherlands provide the ideal types for exploring diverging anti-doping and PIED policies, and their effect on the illicit market of PIEDs. While Belgium adopts a prohibitionist and zero tolerance stance against PIEDs, emphasising enforcement measures, the Netherlands advances a pragmatic approach in which limited attention is given to health care and prevention. By juxtaposing these two countries one can examine the effects that these different approaches have on illicit PIED markets. In addition, a central focus of this study is the market for non-athletic PIED consumption and in particular bodybuilding is adopted as an exploratory case study. Bodybuilding was specifically chosen as

the use of PIEDs are a common component in these subcultures (e.g. see Monaghan, 2001; Liokaftos, 2012). Moreover, Dutch and Belgium bodybuilding are strongly intertwined making it an ideal case study for exploring how PIED dealing networks amongst bodybuilders form and develop within and between the Netherlands and Belgium.

The characteristics of an illicit drug market are often dependent on the type of drugs being sold. While illegal markets exist alongside one another, the methods of operation of PIED suppliers, for instance, may vary. In order to understand the PIED market it is essential to shed light on the nature of PIED dealing and on the characteristics of the individuals who are often attracted to it. In this sense, I want to know:

1. What are the fundamental characteristics of PIED suppliers, their modus operandi and motivations in the contemporary illicit PIED market?

Further, as PIED dealing takes place in an illicit market, there is a need to understand how these markets develop, are structured and function (Desroches, 2005). Therefore, the second aim of this research explores the structure and organization of illicit PIED markets and the networks that make these markets function. In other words:

2. How do PIED markets form and develop within and between Belgium and the Netherlands, and beyond?

The third and final aim of this research is to examine the effects of PIED policies on this market. Drug policies play an important role in shaping drug dealing networks and depending on the type(s) of strategy being employed (supply, demand and harm reduction) may have different outcomes and effects on the drug market. Thus, the third research question I consider is:

3. How do the Belgian and Dutch PIED control systems influence the characteristics and structures of the PIED market?

1.2 Chapter outline

The general aim of this study is to examine the nature of PIED dealing networks in the Netherlands and Belgium. To do so this dissertation is broken down into ten chapters. Chapter two begins by reviewing the literature on PIED use and its supply, and reflects on the anti-doping and PIED policies that seek to regulate this market, with specific attention to the situation in Belgium and the Netherlands. This overview contributes to our understanding of the 'PIED problem' and, importantly, offers an explanation as to why these two countries are ideal case studies for examining the illicit PIED market.

In the third chapter the theoretical contours of this dissertation are developed. Specifically, three theoretical orientations, 'the illegal enterprise perspective', 'the social network model', and 'the socio-cultural approach', will be explored in an effort to understand why people get involved in producing and dealing PIEDs and why PIED networks are structured in particular ways. This study proposes the merger of these seemingly different theoretical perspectives in order to understand how PIED markets form and develop over time in a variety of contexts.

Chapter four describes the data sources and methodology that forms the empirical bases for the findings chapters. This research relies on several multi-source qualitative research methods including: (a) a content analysis of policy reports and PIED dealing cases initiated by criminal justice agencies, and other secondary sources (e.g. news articles, seizure statistics); (b) ethnographic fieldwork conducted at bodybuilding sites (e.g. competitions, supplement shops) for a time-period of two years; (c) semi-structured interviews with law enforcement officers, bodybuilders (producers, dealers and/or users) and other stakeholders (e.g. physicians, lawyers, anti-doping officials); and (d) a website analysis of steroid-selling websites.

The fifth chapter focuses on the general characteristics of PIED suppliers (research question one). Particular attention is paid to the role of "professions" and "gender", as these two characteristics were found to be the most defining features of the Belgian and Dutch PIED market. More importantly, this chapter illustrates how the behaviour of PIED dealers is influenced by the market *culture* in which they operate. One needs to first consider the attributes that are unique to this illicit market in order to be able to understand PIED markets and the actors that operate in it. The charteristics described in this chapter form the base for the following chapters.

Following this line, chapter six examines the importance of socio-cultural factors in the formation and development of PIED dealing networks (research question one and two). Using bodybuilding as a case study, this chapter explores how PIED dealing networks may often be the product of social and cultural networks wherein the consumption and even sale of PIEDs is normalized and stems from the individuals' involvement in particular subcultures. This chapter suggests that the motives underlying PIED dealing in bodybuilding subcultures are complex and go well beyond pure economic rationale. In this chapter, I also develop a typology of PIED dealers which aims to account for multiple dealer types and motivations, and in particular the ways in which socio-cultural, economic, and market forces work together in the development, formation and sustainment of illicit PIED markets.

The seventh chapter analyses and describes the characteristics of the Belgian and Dutch PIED markets, and unravels the complex relationship between the two (research question two). In particular, I examine the various ways in which PIEDs can be obtained, both legally (e.g. by physicians) and illegally (e.g.

underground laboratories, steroid-selling website), in their respective countries. Particular attention is paid to how PIED markets are structured in and between these countries, and the underlying mechanisms that influence the formation of these dealing networks.

In chapter eight the illegal production of PIEDs and the Internet trade is discussed in more detail (research question one, two and three). The first part of this chapter examines factors that contribute to the growing domestic production of AAS in the Netherlands. Particularly, this chapter looks at the various steps individuals must undertake to set up their own underground laboratory (UGL), and the issues that arise from illegally producing steroids. The second half focuses on the growing role of the Internet as a medium for Belgian users to order PIEDs, and for (Dutch) dealers to sell their products. Specifically, this section examines the attractions of ordering and selling over the Internet, and the problems that may arise from these PIED selling websites.

The ninth chapter assesses the harms related to the production and distribution of PIEDs, and what effects the different policies adopted in Belgium and the Netherlands may have on this illicit market (research question three). Specific attention is given to supply reduction efforts in regards to the illegal revenues and money laundering practices of this illicit market, the harms of the Internet trade, and the role of organized crime and its involvement in (elite) sport. In addition, the efforts by these countries to reduce the harms of PIED use will be discussed, and the ways in which anti-doping policies may impact (future) harm reduction strategies. Finally, in chapter ten, the main findings are summarized and policy implications are drawn from the analysis.

This research on PIED dealers in Belgium and the Netherlands is an attempt to shed light on the complex world of PIEDs. Anti-doping officials and state authorities and governments around the world are increasingly expressing their concern regarding the use of PIEDs outside of the realm of sport. However, in general, evidence for long-term adverse health effects is scarce and relatively few deaths are directly linked to PIEDs (Evans-Brown et al., 2012), and even less is known regarding the harms that come from the production and supply of PIEDs (Paoli, 2012). Belgian and Dutch officials admit that there is little information regarding this illicit market, making it difficult to regulate. However, in deciding how best to disrupt the illicit PIED trade, anti-doping officials and law enforcement agencies require a nuanced understanding of how these markets operate. In both Belgium and the Netherlands there is a need for evidence-based, non-judgmental, practical information that includes law enforcement, health care professionals, PIED users and its suppliers. There is a knowledge gap when it comes to PIEDs that deserves and requires our attention. This work is an attempt to explore the many different voices in the PIED market, to increase knowledge, and to come with a sensible solution for all parties involved.

Chapter 2

An analysis of the demand for PIEDs and PIED policies in Belgium and the Netherlands

This chapter provides a historical overview of the development of anti-doping and PIED policies, and reviews the extant literature on PIED use and supply in Belgium and the Netherlands. These two countries have a different stance regarding PIEDs and how to best regulate this illicit market. The Netherlands advances a rather pragmatic approach towards PIEDs, in which limited attention is given to prevention, education and minimising the potential harm of PIED use. In contrast, Belgium upholds a zero-tolerance policy towards PIEDs and has not applied harm reduction strategies in this area. Further, it is important to discuss the relationship between global anti-doping and domestic PIED policies. Indeed, there is this tendency to frame PIED use outside of sport (e.g. use of steroids in fitness centres), as an issue within sport (Kimergård, 2014a). Consequently, policy makers are calling for the same types of policy that are being used in anti-doping. Therefore, it is crucial to analyse the existing literature regarding doping and the measures that are taken to prevent the use of these substances.

The first section will provide a review of the trends and prevalence of non-medical PIED use in Belgium and the Netherlands. This will be followed by a detailed overview of the diverging PIED policies adopted in both countries, and its relation to anti-doping. In the final part, I will briefly outline the extent literature exploring the supply of PIEDs in Belgium and the Netherlands. As we will see, aside from a few publications in the Netherlands, the illicit PIED market has received marginal attention in the academic field.

2.1 The demand for PIEDs: trends and prevalence of non-medical PIED use

Users are important actors in the supply side of illicit PIED markets. Besides the growing demand for wanting to use these products, users often play a role in the distribution of PIEDs (e.g. users who sell PIEDs to support their own consumption). Subsequently, the supply and demand for PIEDs interplays and one cannot think about one without considering the other. For this reason, to have a nuanced understanding of the supply of PIEDs, it is important to also explore the demand-side of the illicit PIED market. While the major concern of

sport officials is predominately located within sport, in recent years it has been highlighted that the demand for PIEDs by elite athletes represents only a small portion of the market, particularly AAS, when compared to the consumption within the general population (a.o. Sagoe et al., 2014a; Christiansen, 2015). Subsequently, the use of PIEDs is rapidly becoming framed as a public health matter rather than simply a traditional sporting problem (O'Connor, 2012, September 22). It is believed that the spread of illicit AAS from elite sport into the general population took off around the 1980s due to an increasing Western cultural emphasis on male body image and muscularity (Kanayama et al., 2010). Moreover, it was at that time that competitive bodybuilding gained mainstream popularity and with it 'steroid handbooks' began to appear which included detailed information on how to obtain and use AAS (e.g. how to inject) (Kanayama et al., 2008). Still, others have connected this growing trend to the medicalization of society (Conrad, 2007), and the general 'culture of performance' which dominates many societies (Thualagant, 2012).

In a literature review, Sagoe et al. (2014a) found that 3.3% of the world's population (6.4% men/1.6% woman) have used steroids at least once in their life and concluded that AAS use is now a serious global health problem. The spread to the general population suggest that millions of individuals across the world are using PIEDs to increase and improve their physical strength and appearance, many of whom have no athletic ambitions. In particular, subgroups that engage in physical activities for lifestyle purposes or aesthetic reasons often show high prevalence of consumption levels (Monaghan, 2001). For example, people involved in weight training (e.g. fitness, powerlifting and bodybuilding) are found to commonly use PIEDs to increase muscle size, mass or power (o.a. Huizing, 1998; Monaghan, 2001; Backhouse et al., 2007; Pope, Kanayama & Hudson, 2011; Christiansen, 2015). Although it is true that for these groups the use of PIEDs is more commonplace, there are many other subgroups not related to sport or other physical activities that are also no stranger to PIED consumption or other types of human enhancement drugs (HEDs) (e.g. the use of 'smart drugs' by students) (Evans-Brown et al., 2012). These subgroups (e.g. police) will often identify themselves more with other practices (e.g. their occupation) rather than with sport or other forms of physical activity (e.g. someone can still train at a fitness centre or at home) (e.g. see Cohen et al., 2007).

Currently, we know very little about the characteristics of those who self-administer PIEDs for non-medical purposes, or the broader spectrum of HEDs in general (Evans-Brown et al., 2012). Most of what we do know has been derived from non-representative samples of users or case studies (Cohen et al., 2007). Studies tend to address the consumption of AAS in fitness centres and gymnasiums (hereafter, 'gyms') and focus on the perceptions of masculine bodies in the Western world while, for example, neglecting the fact that female users are more likely to use stimulants to lose weight (which are also on the

prohibited list of the WADA), as opposed to AAS to enhance their appearance (Detmar et al., 2003; Backhouse et al., 2007; Christiansen, 2011; Thualagant, 2012). PIEDs are an aggregate as they are a combination of various types of drugs. So while it may be argued that with particular PIEDs certain subgroups are addressed, the point is that discussions about the prevalence of PIED use predominately refer to the *usage of AAS by men who belong to a specific male-dominated environment*. It is necessary to be aware of this emphasis in the study of PIEDs when interpreting prevalence studies on PIEDs or other statistics in the Netherlands and Belgium.

2.2 Prevalence of recreational PIED use in the Netherlands and Belgium

In the Netherlands several studies have been conducted on the use of PIEDs outside of professional sport. Since 1997 the *Nationaal Prevalentie Instituut* (NPI) (National Prevalence Institute) has conducted quadrennial research on the prevalence of several substances, including PIEDs. While the consumption of PIEDs in general has not exceeded the global figure of three percent outlined above, a slightly increasing trend can be noted of people who ever have used PIEDs (12 years and up): from 1% (106,000) in 1997 to 1.6% (177,000) in 2009 (van Rooij, Schoenmakers & van de Mheen, 2011). However, this increase is not found to be statistically significant. It is also difficult to make a comparison as the number of participants per year differs substantially (1997: N=17,590; 2001: N= =2,312; 2005: N=4,516; 2009: N=5,769), and different methods have been adopted to collect these results. For instance, in 1997, 2001, 2005, and partly in 2009 the data was collected through the Computer Assisted Personal Interviewing (CAPI)[4] method. However, as this was not cost-effective other initiatives to collect data were implemented in 2001 and 2005 such as the Multi-Method (MM)[5] approach (see for more detail van Rooij et al., 2011). In addition, the prevalence rates of current users in the Netherlands range between 0.2% - 0.3% (approximately 30,000 to 40,000 users) (Abraham et al., 1999; Rodenburg et al., 2007; van Rooij et al., 2011). The overall prevalence of PIEDs by the general population appears to be quite low in the Netherlands, in particular when compared to other illicit drugs. For instance, in the 2011 NPI report the prevalence of people to have ever used 'hard drugs' (e.g. cocaine and ecstasy) in 2009 was 8.6%, and cannabis use was even higher with a prevalence of 25.7% (van Rooij et al., 2011).

However, when looking at studies that specifically target certain high-risk groups (e.g. gym visitors and bodybuilders) a much higher pattern of

[4] CAPI is a data collecting method in which the interviewer conducts a face-to-face interview at the respondents' home, and directly registers the answers via a computer.

[5] MM is an approach in which several methods are adopted to collect data. For instance, in the research of Rooij et al. (2011) additional methods such as the Computer-Assisted Self Interview (CASI) and Paper Assisted Personal Interviewing (PAPI) were implemented.

consumption can be noted (Vogels et al., 1994; de Boer et al., 1996; Huizing, 1998; Detmar et al., 2003; Palsma, 2007; Stubbe et al., 2009, 2013). For example, de Boer et al. (1996) explored the prevalence of AAS use among bodybuilders in the Netherlands. A total of 1,200 questionnaires were handed out, of which 291 (24%) were returned and completed. The following prevalence rates of those who ever used AAS was found: 37% recreational bodybuilders (45% men/ 12% women) and 77% competition bodybuilders (79% men/ 57% women). The total group average was 44% (52% men/ 17% women). In addition, Detmar et al. (2003) conducted a questionnaire among gym visitors and found that of the 190 participants 30% (34% men/ 18% women) have used PIEDs in their life, of which 12% were currently taking PIEDs. However, as the authors noted themselves this was most likely an over-estimation of the amount of users in gyms in the Netherlands. The reason being that gym visitors were mostly recruited through channels that were used by people who already showed interest in using PIEDs.

Finally, the most recent research conducted by Stubbe et al. (2009, 2013) examined PIED use in the gym environment (age: 15 years and up) in the last year and found an overall prevalence rate of 8.2% (or 160,000 users). Stubbe et al. (2009, 2013) used two methods to estimate the prevalence of PIED use in the Netherlands. The first measure consisted of the conventional method and was used to compare the prevalence with earlier studies on recreational PIED use, which resulted in an overall prevalence of 0.4%. The second method, the Randomized Response Technique (RRT), was conducted to investigate whether there was an underestimation of the true prevalence caused by response errors due to social desirability, and resulted in an overall prevalence of 8.2%. However, a critical note, which also applies for the other studies, is that PIED *use* is a limited way of describing and measuring drug consumption and related problems. Use refers to experimentation or low frequency, typically irregular use of PIEDs, while abuse refers to regular and/or compulsive use of these substances. It is critical to draw a distinction between use and abuse of PIEDs when making statements about its harms and patterns of consumption.

PIEDs do not seem to be commonly used by the general population in the Netherlands and only when looking at certain subgroups can high consumption patterns be found. The majority of studies suggest that PIED users are overwhelmingly men who use AAS. The higher prevalence of this group is not unexpected as the target groups are taken from quite male-dominated environments (e.g. bodybuilding) and sometimes the questions used in the research are 'misleading'. For instance, in the 2005 NPI report the question concerning PIEDs is formulated as the following: "Have you ever used substances to enhance your sport performance or to obtain a muscular body?". Women may be less likely to answer this question with "yes" if they have different motivations to use PIEDs, such as losing weight. Indeed, the use of stimulants by women (and bodybuilders) to lose weight is becoming more common (Detmar et

al., 2003; Stubbe et al., 2009), yet questions exploring this phenomenon are often left out of research on PIED use. Therefore, if these substances and user groups were taken into account the prevalence of PIEDs would presumably be higher. Table 1 provides a concise overview of the prevalence studies conducted in the Netherlands (and Belgium).

Table 1

Overview of studies on the prevalence of PIED use in Belgium and the Netherlands

Country	Study	Target group	Lifetime prevalence	Current users
The Netherlands	Abraham et al. (1999)	General population	0.9%	0.5%
	Detmar et al. (2003)	Gym visitors	30%	12%
	De Boer et al. (1996)	Recreational and competition bodybuilders	44%	12%
	Palsma et al. (2007)	Gym visitors	-	0.3%
	Rooij et al. (2011)	General population	1.6%	0.2% - 0.3%
	Stubbe et al. (2009, 2013)	Gym visitors	0.4%/8.2%*	-
	Vogels et al. (1994)	Gym visitors	6.4%	-
Belgium	Delbeke et al (1995)	Competition bodybuilders	38% - 58%	-

* Two methods were adopted to estimate the prevalence of PIED use amongst gym visitors.

In contrast, in Belgium little research has been conducted in this area (see table 1). While in Belgium research is conducted on the prevalence of other illicit drugs, none estimates the non-medical use of PIEDs. Only one study can be found that specifically focuses on the use of doping amongst competition bodybuilders. Delbeke, Demet and Debackere (1995) examined the use of PIEDs in competition bodybuilding in Flanders between 1988-1993. Based on doping controls, the authors found that between 38% and 58% tested positive during this period. Furthermore, as no empirical or academic research exists in this area, anti-doping officials and other authorities use the results from the doping controls conducted in gyms as an indicator of recreational PIED use in Belgium. For

instance, the Flemish government[6] considered the 2015 statistics of the National Anti-Doping Authority (NADO) Flanders "alarming", which for gyms reached its ultimate high with almost 40% testing positive (De Standaard, 2014, February 2). Looking at the Flemish statistics, the percentage of positive tests in gyms remains relatively stable, ranging between 20 and 30%, except for the years 2007 (lower) and 2014 (higher). This would imply that around a quarter of tested Flemish gym visitors are likely to test positive (see table 2).

Table 2

Percentage of positive doping tests in Flemish Belgian gyms.

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of tests	20	10	-*	18	90	106	105	150	122
Percentage of positives	30%	10%	-	27.8%	26%	19.8%	29%	19.3%	37.7%

Source: www.dopinglijn.be

* No doping controls were conducted in gyms that year

The main type of PIED that fitness practitioners test positive for are AAS (e.g. 90% of positive tests were for steroids in 2013). By way of comparison, the French Community in Belgium performs little to no doping controls in gyms (see section 2.4). In 2004, ten doping controls were conducted in gyms, resulting in three positive cases (30%), and in 2007, 75 doping tests were conducted, which resulted in 17 positives (23%). Nevertheless, these findings are consistent with the Flemish figures.

However, as doping controls have not been conducted consistently, data is missing, and, most importantly, as specific groups *are targeted* based on indications of PIED use and/or trafficking, little can be said about consumption patterns of the general population. Therefore, these numbers highly over-estimate the general consumption of PIEDs in Belgium. Further, the figures say even less on the prevalence of PIED use in a fitness-related context due to the selection of test subjects. Indeed, male weight-trainers with a more muscular appearance are more likely to be subject to these controls (Mulrooney & van de Ven, 2015, January 21). Moreover, the type of gym that is targeted for research can be a highly influential factor. Consider a 'commercialised health and fitness centre' versus a 'hard-core bodybuilding gym'. The likelihood of finding PIED users will be much higher in the latter. This is not to suggest that no PIEDs are being used in commercialised gyms, but that it is likely to be less prevalent and these gyms are less likely to be targeted by authorities. As a result, the only

[6] See section 2.4 for more information on the four different communities in Belgium: the bilingual, Flemish, French and German-speaking Community.

conclusion that may be drawn from this data is that use is occurring in certain high-risk groups and that these groups are sometimes the targets of testing.

In conclusion, little research has been conducted on the prevalence of PIED use in both countries, in particular in Belgium, leaving us with limited knowledge on the use of PIEDs and whether this figure is evolving over time. While these studies provide valuable information on the prevalence of certain kinds of PIED misuse, especially AAS, and amongst certain populations, in particular sport groups, the risk exists that other vulnerable populations are overlooked (e.g. women using stimulants). Obtaining prevalence estimations is important in order to assess the impact of drug misuse on individuals and society, both on a national and local level, as well as to evaluate the level of response required (Uhl et al., 2015). As the review shows this issue is particularly critical in PIED and HED research as the methods to collect this data are inconsistent, all together different or are simply non-existent. Subsequently, relatively little is known regarding the problems PIEDs may pose to the individuals and/or society, and what kinds of prevention are required. In both Belgium and the Netherlands there is little 'hard' evidence about the prevalence and harms of PIED use.

2.3 The limits and consequences of drug control policies on drug markets

Several studies on illicit drug markets (o.a. May & Hough, 2001, 2004; Curtis & Wendel, 2007) show that law enforcement strategies may alter the character of drug markets, either for better or for worse, as the markets adapt to the new situation. Subsequently, these interventions can produce markedly different outcomes with regard to violence and crime (Curtis & Wendel, 2007). For instance, criminal groups and individuals may start to illegally manufacture their own AAS due to the stricter regulations on the pharmaceutical and medical sector, which ultimately decreases the quality of illicit market steroids (Llewellyn, 2012, June 29). While much is written on the negative effects of over-regulation on the drug market (e.g. see Costa, 2008), under-regulation may likewise produce harmful effects (e.g. see Rosenfield & Messner, 2013). This policy divergence is crucial to this work as Belgium advances a repressive approach to PIEDs (risking over-regulation), while in the Netherlands minimal efforts are taken regarding these illegal substances (risking under-regulation). However, let us first reflect on the existing literature regarding drug policies and their impact on criminal markets, before looking more closely at the Dutch and Belgian contexts.

Opponents of the international drug-control regime argue that supply-oriented policy interventions are not just ineffective but also produce unintended negative consequences (Greenfield & Paoli, 2012). Over-regulation may have the unintended consequence of creating opportunities for criminal groups to offer these illegal goods and services, as the demand often remains (Dorn & South, 1990; Braun et al., 2001; Caulkins & MacCoun, 2003; May &

Hough, 2004). Not only do these policies generate an underground economy but they may also affect these markets over time. For example, Dorn and South (1990) explain how the increasingly punitive British drug legislation against drug distributors did not seem to have any effect on restricting the distribution networks but instead may have contributed to the professionalization of the trade. Due to intensive policing, markets may adapt in order to increase functionality. Not only does prohibition influence the structure of illicit markets (May & Hough, 2001, 2004), but it also affects aspects such as price (Freeborn, 2009) and consumption (DeSimone & Farrelly, 2003).

Nevertheless, while it is quite accepted that over-regulation may negatively impact an illegal market, under-regulation can likewise produce harmful effects (e.g. see Decorte 2007, 2010; Palamar, 2011; Rosenfield & Messner, 2013). For example, Palamar (2011) conducted research on ephedrine regulation in the United States (US) and found that the under-regulation of this illegal drugs was more problematic than the substance itself[7]. As the author explains ephedrine misuse was not a visible problem, and surveys rarely, if ever, assessed for use, so statistical evidence of misuse was limited. Thus, "despite huge sales and easy availability," incidence of abuse was thought to be small (p.2). The Food and Drug Administration (FDA) required stronger scientific evidence in order to proceed with rulemaking. However, during this continued period of under-regulation, adverse effects reported by national poison centres increased 150-fold from 55 reports in 1993 to 8189 in 2002. Palamar (2011) concluded that stringent regulation of all ephedrine products is actually necessary to prevent misuse and to protect the public's health. Thus, the lack of certain (state) restrictions can influence the outcomes of market transactions and can change the framework in which these markets operate (Aspers, 2011).

However, as May and Hough (2004) explain, the transformation of illegal drug markets has not only been prompted by enforcement activity, but also through advances in technology. The authors examined the impact of low-level police officers on two British drug markets and found that while drug markets have been responsive to policing, their capacity to adapt has been greatly extended by the emergence of mobile phones. In their study it was clear that mobile phones facilitated the transition from open markets to closed ones. While mobile phones are well adopted in our current society, one of the more recent technological developments that likewise facilitate criminal activities is the Internet and the 'Darkweb' (van Hout & Bingham, 2013; van Buskirk et al., 2013). Indeed, the Internet is becoming a popular medium to purchase or sell PIEDs (de Hon & van Kleij, 2005; Kraska et al., 2010; Wassink et al., 2010) or other types of HEDs (Evans-Brown et al., 2012). For example, Kraska et al.

[7] Interestingly, the sport movement had an important impact on the criminalization of ephedrine. See Palamar (2011) for more information.

(2010) explain how their informant was able to establish himself as a PIED supplier due to the large international underground communication system found on the Internet that provided him with the technical and product knowledge to construct an apartment-based illegal lab. While the authors do not explore this in-depth, they do note that for future research it is important to study the extent to which the Internet-based marketplace impacts the nature of PIED dealing. As such, it is crucial to understand the influence of both technology and law enforcement on PIED markets and their operations.

2.4 Regulating PIED markets: anti-doping and national policies in Belgium and the Netherlands

Belgium and the Netherlands are ideal countries for studying different anti-doping and PIED policies, and their impact on the illicit market of PIEDs. While Belgium adopts a prohibitionist and tough stance against PIEDs, emphasizing enforcement measures, the Netherlands advances a more 'pragmatic approach' in which some attention is given to health care and prevention. This difference is not surprising considering the historical origins of the creation, development and implementation of drug policies in these countries. Indeed, the Netherlands has a long history of adopting and implementing harm reduction strategies towards illegal drugs (e.g. see Downes, 1988; Leuw, 1991; Chatwin, 2011), while Belgium has had a more repressive approach in dealing with drug problems (e.g. see Decorte, 2007, 2014). In the following section the origins and evolution of anti-doping regulations and PIED policies in Belgium and the Netherlands, and differences between the two, will be outlined.

2.4.1 The pragmatic approach of the Netherlands

In light of the cycling incidents that occurred in the 1960s (e.g. the death of Danish cyclist Knud Jensen [8]), the Dutch government ordered the *Gezondheidsraad* (Health Council) to investigate the extent and gravity of doping in sport in the Netherlands (Gezondheidsraad, 2010). The council concluded that doping was non-existent in the Netherlands with the exception of cycling and possibly some other high-level athletes. Despite this reassuring conclusion, the Association of Sport Medicine pushed for a re-examination of doping use in sport in 1966. The final report concluded that better anti-doping education was needed, that clearer rules had to be defined, and that prevention programmes and doping controls were necessary to respond to doping (Wimersma-Greidanus, Stoele & Hartgens, 2000). Moreover, in the 1980s research

[8] Anti-doping authorities and other officials related the death of Danish cyclist Knud Jensen at the Olympic Games in 1960 to his doping use. However, Møller (2005) has thoroughly investigated the circumstances surrounding the death of the cyclist and concluded that no direct evidence exists which proves that PIEDs are responsible for his passing. The cyclist most likely died of heat exhaustion.

established that AAS were used on a large scale in gyms, and that the illicit market for these substances was quite lucrative. Yet at this time, the government did not take action, as it did not consider PIEDs a great risk to public health (Wimersma-Greidanus et al., 2000).

In 1987 the report "Sport Medical Supervision and Sport Health" appeared, providing suggestions on how to handle the increasing doping problem in sport[9]. One of these recommendations was that an independent forum or institution should be created which would be responsible for all doping-related problems. As a result the *Nederlands Centrum voor Dopingvraagstukken* (NeCeDo) (Dutch Centre for Doping Affairs) was created in 1989. Nevertheless, it was not until 1995 when the Netherlands ratified the Anti-Doping Convention of the Council of Europe that doping in sport received greater attention. From this point on, the government compelled national sport federations to pursue an active anti-doping policy and demanded that anti-doping regulations be implemented (de Hon & Hartgens, 2000). In that same year, the Association of Sports Medicine created guidelines for physicians confronted with doping-related issues prompting physicians to embrace a negative attitude towards PIEDs and to discourage consumption. Physicians were also prohibited from prescribing such products for doping goals. Furthermore, as doping controls became an obligatory part of anti-doping, the federation *Doping Controle Nederland* (DoCoNed) (Doping Control Netherlands) was created in 1999. In 2006 the NeCeDo and DoCoNed were combined to become what is now known as the *Dopingautoriteit* (the Dutch NADO).

In the mid 1990s, a short-term prevention project was set up to investigate the health needs of non-medical PIED users outside of elite sport. Users could go to the *Gemeentelijke Gezondheidsdienst* (GGD) (Municipal Health Service) for personal medical questions and a medical examination (Anti-Doping Denmark et al., 2012). The main goal of this project was to create a protocol for physicians on how to best handle recreational PIED use. A follow-up project was set up to fine-tune these guidelines[10], however, after these pilot projects came to an end, there were no longer specialised medical facilities available for non-medical PIED users. In the early 2000s, however, the government began to take action due to the growing evidence of recreational PIED use (o.a. Vogels et al., 1994; Huizing, 1998) and, more importantly, the establishment of the growing Dutch market for PIEDs (Koert & van Kleij, 1998; Oldersma et al., 2002). Consequently, the law

[9] In the late 1980s and early 1990s several Dutch and Belgian (and French) cyclists died which fuelled the anti-doping debate in both countries. Anti-doping officials and other authorities suggested these cyclists allegedly died because of erythropoietin (EPO) abuse. However, López (2014) looked into several of these cases and found that the EPO link was a myth.

[10] These guidelines stipulated the establishment of extensive case history, physical examination and laboratory tests.

was amended in 2001 in order to more effectively combat the illicit PIED trade and the involvement of criminal organisations[11] (Snippe et al., 2005).

Prior to the legislation, PIEDs were only regulated by the *Wet op de Geneesmiddelenvoorziening* (WOG) (Dutch provision of Medicine Act), however it now became part of the *Wet op de Economische delicten* (WED) (Economic Offences Act)[12]. The main difference being that unauthorised possession (with an intent to sell), production, import and distribution of medicines were now regarded as an economic offence. As a result of this amendment, punishment was increased and authorities were given more investigative powers (e.g. surveillance teams, wire taps). Specifically, sanctions increased from a maximum of six months of imprisonment and/or a €4,540 fine to a maximum of six years of imprisonment and/or a €78,000 fine. Moreover, while in the past only the *Inspectie voor de Gezondheidzorg* (IGZ) (Health Care Inspectorate) - the authority who controls for the quality of medical products - and the police were concerned with these issues, the *Economische Controle Dienst van de Fiscale Inlichtingen- en Opsporingsdienst* (FIOD-ECD) (Economic Surveillance Department of the Inland Revenue Intelligence and Investigations Department) - the authority who investigates economic and tax crimes – now also became mandated to deal with offences related to PIEDs. However, while the effectiveness of dealing with this type of crime has expanded, in general the supply of PIEDs still receives very little priority amongst law enforcement agencies (Snippe et al., 2005).

More recently, a Dutch Member of the House of Representatives has advocated for the introduction of doping controls in gyms (Anti-Doping Denmark et al., 2012). In 2009 that Member submitted a motion in the Netherlands in favour of considering the introduction of an accreditation mark for gyms and the possibility of carrying out doping controls. However, the Secretary of State at the Ministry of Public Health, Welfare and Sport at the time was not in favour of doping controls in gyms. She argued that doping controls are a serious infringement of individual privacy and found the substance policy of the Dutch Government to be sufficient (Anti-Doping Denmark et al., 2012). While the Netherlands does not enforce a testing regime outside elite sport, a 'doping paragraph' was created for gyms in 2009 to control for recreational PIED use. Gyms are required to give a clear sign (e.g. poster) that they do not condone PIED use and must actively discourage its use. In addition, when customers sign a contract to become a gym member, they agree to the terms not to use PIEDs and may face consequences when they do use (e.g. access may be denied to gym). However, this legislation has in practice never been enforced and no active policy seems to exist (KRO, 2013, February 28). Furthermore, an educational campaign called "*Eigen Kracht*" (True Strength) was created and implemented in

[11] By amending the law the Dutch government would fulfil its responsibilities of ratifying the Convention of the Council of Europe.

[12] Some other laws apply such as the Opium Law (some PIEDs (e.g. cocaine) are considered drugs), but in general the WOG and WED cover for PIEDs.

2008-2009 in an effort to reduce the health risks and harms of recreational PIED use. The main target groups are non-users and potential users who can obtain information on PIEDs through campaign material in the gyms, on the website and in the book "*Op Eigen Kracht*" (True Strength Only). Initially there was also a Doping Hot Line but this has been discontinued as of January 2012.

While there are some plans to implement preventative measures in the near future, currently little attention is given to minimising the health risks of users (Anti-Doping Denmark et al., 2012). In addition, the Dutch NADO is quite active in giving workshops, lectures and other presentations to inform health care services on issues arising from PIEDs and how best to handle them. Moreover, they attempt to put 'fitness doping' higher on the priority list. For example, the Dutch NADO recently published the report "Strategies for Stopping Steroids" [13] in collaboration with other NADOs and health care services. The report provided an overview of the current status of the use of PIEDs in gyms, and strategies to stop the spread of AAS and other PIEDs. Furthermore, in 2010 harm reduction efforts were reintroduced with the opening of a 'steroid clinic'. The clinic focuses on investigating and treating the symptoms of (former) users. However, no PIEDs are prescribed for non-medical reasons, ongoing users are not provided with systematic guidance on the use of PIEDs, and no individual recommendations are given to ongoing users of PIEDs who do not have existing health problems (Anti-Doping Denmark et al., 2012). Moreover, a Doping Law is currently being drafted which is primarily aimed at facilitating better cooperation between investigative services (e.g. custom service, police) and the Dutch NADO (*Sport & Strategie*, 2014 October 10).

In conclusion, while the Netherlands incorporates a more pragmatic approach focusing on the preserving the individual's health (e.g. steroid clinic), in general little effort is undertaken to regulate the illicit PIED market on all fronts. Subsequently, this may result in under-regulation, as PIED suppliers are able to more efficiently exploit the demand for PIEDs. By pursuing this policy the Netherlands risks actually endangering public health (e.g. the poor quality of illicit market drugs) and attracting more (dangerous) criminal groups and individuals to the drug market (e.g. growing number of people producing their own drugs) (e.g. see Decorte 2007, 2010; Palamar, 2011; Rosenfield & Messner, 2013)

2.4.2 The Belgian zero-tolerance approach

In response to the aforementioned doping-related-deaths in cycling, Belgium passed legislation in 1965 that criminalized the use of doping in sport. This legislation made Belgium one of the first European countries ever to criminalise the use of doping substances in elite sports (Mazanov & McDermott, 2011). In

[13] In this report more details can be found on what the Dutch NADO does in relation to the use of PIEDs in the gym environment.

theory athletes could risk imprisonment ranging from eight days to three months and/or a maximum fine of fifty Euros. However, in practice, anti-doping remained largely symbolic and severe punishment of this kind has rarely been enforced (Fincoeur et al., 2014). Furthermore, an Anti-Doping Commission was created in 1966 with a mandate to advise on doping-related issues (Belgian Senate, 1965, February 2). In addition, Belgium has been an important actor on the international anti-doping scene. For example, in 1967 the International Olympic Committee (IOC) established the Medical Commission to control PIED use in the Games of which Belgian Prince Alexandre De Merode was appointed chairman, a position held until his death in 2003. Moreover, in 1973 the Doping Control Laboratory (DoCoLab)[14] was established in Ghent, which is the only anti-doping laboratory in the Benelux region accredited by the IOC and later by the WADA. Belgium was also quick to realise that PIEDs are not solely an issue of elite sport but that a growing illicit market exists for recreational PIED users as well. Since the 1970s, recreational PIED use has increasingly received more attention. In 1974 PIEDs became criminalised within the limits set by the Belgian drug laws[15]. Sanctions for possession, production, import and/or trafficking can range from one month to five years imprisonment and/or a fine from €18,000 to €600,000. In practise, the Public Prosecution Service only prosecutes someone for possession if they suspect that the AAS or other PIEDs are not just for personal use but also are being trafficked. However, occasionally "a simple user is prosecuted and receives a criminal sanction" (NADO Flanders, personal communication, 2014, April 9). In addition, a difference with the Netherlands is that one of the Belgian NADOs can take disciplinary actions against recreational athletes (e.g. people who train in a gym) for using or possessing PIEDs. Thus, in Belgium the possession of PIEDs is punishable both as a crime in criminal court and as a disciplinary offence in a sports organization.

Prior to 1970 all PIED legislation in Belgium was national but after the first Belgian state reform three cultural communities were established; the Flemish-, French- and German-speaking Communities. These communities assumed responsibility for all cultural matters (including sport) and, in 1980, personal matters (including preventive health care). Additionally, in 1989 the Joint Community Commission (bilingual) was created which is responsible for Brussels Community matters (see picture 1). It was not until the mid-1980s that the legislative competence for preventive health care included the fight against doping. Thus, in total four NADOs[16] needed to be established in Belgium. The

[14] DoCoLab is one of the foremost international anti-doping laboratories for the analysis of doping tests.

[15] While other laws apply as well, such as the 1964 Medicine Law, the drug law is the main regulatory framework to criminalise PIEDs.

[16] The term "NADO" is a specific term that comes from the World Anti-Doping Code (WADC). Thus, the four anti-doping bodies in Belgium were not officially considered a NADO until they adopted and implemented the WADC. The NADO Flanders adopted the WADC in 2007 (implemented in 2008), the French Community of Belgium NADO in 2011 (implemented in

Flemish- and French-speaking anti-doping Commissions were created in 1985, the German-speaking anti-doping Commission in 2006, and the one in Brussels in 2007. As a result the Belgian Anti-Doping Commission has been deactivated since 1979. Instead the separate communities now have their own NADOs. Since the Flemish and French part form the two largest communities in Belgium, and as the NADO Flanders and the French Community of Belgium NADO are the largest and most active anti-doping bodies, only these two NADOs will be discussed in more detail.

Map indicating the communities, regions and provinces of Belgium.

Picture 1 The four different communities in Belgium: the bilingual, Flemish, French and German-speaking Community.

One of the first actions the Flemish Community undertook was to move away from the early criminalization measures concerning doping in sport, to more disciplinary measures by adopting the doping decree "Medically Responsible Exercising" in 1991 (Ervyn, 2007). Later on, the French Community did the same by adopting the "the Promotion of Health in Sports Practises, Doping Prohibition and Prevention" decree in 2001. While this decree is different from the Flemish Community, it is largely based on the "Medically Responsible Exercising" decree and follows the same guidelines. By adopting the decrees, human doping violations within sport now have to be dealt with by the disciplinary commission on doping of the athlete's federation. Nevertheless, anti-doping violations are still punishable as a crime under the countries drug laws and, therefore, an athlete or recreational trainer may still face dual punishment for the same doping offence. Despite its rarity this dual punishment has happened in the past (e.g. cyclist Johan Museeuw).

2012), and the other two anti-doping bodies (Joint Community Commission and Ministerium der Deutschsprachigen Gemeinschaft Belgiens) adopted the WADC in 2012 (implemented in 2012).

One important difference however is that the Flemish Community has implemented doping controls at bodybuilding competitions and gyms since 1991, while the French Community introduced doping tests at bodybuilding competitions, and to a limited extent at gyms, in 2003. In the Netherlands no doping controls are implemented outside of elite sport, neither at bodybuilding competitions nor in gyms. The controls in gyms follow the international standards for testing and sanctioning of athletes, as laid out in the WADC. Thus, a Belgian citizen training at a gym (or bodybuilding competition) may be subject to the list of banned substances and the associated sanctions of the WADC. For instance, when tested positive a recreational trainer is, for a first offence, banned for two years from every gym and any other form of organised sport (e.g. local football) in Belgium and, additionally, receives an average fine of 1000-2000 Euros[17]. However, this testing scheme in gyms is mostly enforced in the Flemish part of Belgium. People who are tested in gyms in the French Community, and who test positive, are rarely charged and prosecuted. Unlike the Flemish Community, the French Community did not establish a special disciplinary commission for non-elite athletes, but leaves the club or federation in charge of sanctioning fitness trainers who test positive. However, in the case of fitness there either is no federation or the club does not undertake any (legal) actions to prosecute doping violations.

In addition, Belgian officials became concerned with the 'doping networks' surrounding athletes: in particular physicians and (competition) bodybuilders were considered to be the main issue (Flemish Parliament, 1999, April 19). The problem was that physicians who were over-prescribing were going undetected, and even when such misuse was suspected, their prescription behaviour was neither investigated nor punished. Moreover, bodybuilders went to foreign pharmacies (e.g. Spain and Greece) or a local physician to obtain PIEDs for their own consumption and/or to resell them in Belgium (Flemish Parliament, 1999, April 19). In response, politicians, sport officials and investigative services called for stricter measures to effectively handle these PIED dealing networks[18]. To coordinate anti-doping matters more efficiently, partnerships were forged between governmental bodies and sport federations. Following a Flemish Parliament Resolution on 5 May 1999, the Flemish Community increased its fight against doping in sport and signed a cooperation protocol in 2000 with the Public Prosecutors of the Flemish Court of Appeals, in order to strengthen the fight against doping in general, and PIEDs in particular. In practice, this led to an improved exchange of doping related information and an increase in the number

[17] These fines can go up to 25.000 Euros.

[18] What accelerated this process is the 1998 "Festina scandal" as it revealed that two Belgian team members were closely involved in supplying and administering doping to athletes: physician Eric Rijckaeart and sports physiotherapist Willy Voet.

of doping controls in gyms[19]. For example, NADO Flanders cooperates with the police to identify and test members of fitness centres where steroid use is purported to be rampant. On the basis of a protocol between NADO Flanders and the Flemish Chief Public Prosecutors, NADO Flanders also receives reports from the judicial and customs authorities about AAS, PIED users and importers. Likewise, the French Community signed the cooperation protocol "the Memorandum of Cooperation in the Fight against Doping" with the Public Prosecutors in 2008. Similar to the Flemish Community, this led to a better cooperation with law enforcement (Hormonencel, 2011).

Moreover, PIED violations outside elite sport began to receive heightened attention from the government after the murder of a government livestock inspector in 1995 who was investigating the illegal injection of growth hormones (GH)[20] in animals by farmers. The investigation of his murder revealed a large trafficking ring for growth hormone within the livestock industry. Other PIED scandals in the livestock industry followed suit, with some veterinarians suggesting that in Belgium 70 to 90 percent of the livestock were treated with hormones (De Graaf, 1995, March 4). In response to this revelation the Belgian government set up the *Federaal Agentschap voor de Veiligheid van de Voedselketen* (FAVV) (Federal Agency for the Safety of the Food Chain) and created the Multidisciplinary Hormonencel (henceforth, Hormonencel). The initial focus of the Hormonencel was to control for the use of hormones in the livestock scene. However, several investigations uncovered that these dealing networks often overlapped with the market for human PIED use. Therefore, human PIED violations have been officially included in the task description of this agency since 2003.

Lastly, beginning in 1991 Flemish Belgium has regularly adopted prevention campaigns (e.g. leaflets, flyers, videos, DVDs) that address doping in general[21] and, since 2012, health and sport ethics in a broader sense. For example, the main message of the campaign "*Ik sport slim*" ("I train smart") is that your body is sacred and you need to take care of it. Implicitly this contains an anti-doping message, as using PIEDs would be considered unhealthy behaviour and would not be considered "a smart thing to do" (NADO Flanders, personal communication, 2014, July 20). The French Community of Belgium NADOs' main mode of prevention since 2003 is through printed, electronic or online materials (e.g. leaflets, newsletters, videos). Commercial organisations

[19] Doping controls in gyms were sporadic before the 1990s and are conducted more regularly since the cooperation agreement in 2001.

[20] Growth hormone (GH), also known as somatotropin or somatropin, are given to animals, such as cattle, in order to make them gain weight faster, and, therefore, manufacture meat products for consumers at a quicker rate.

[21] Commercial organisations involved in recreational sport (e.g. gyms) play a part in the prevention of doping. For example, the *Vlaamse Fitness Organisatie* (DFO) (Flemish Federation of Fitness centres) is willing to fight doping in its member clubs, but not all gyms are part of this. Those who are not a member are usually less opposed to doping.

involved in recreational sport (e.g. gyms) do not currently play a part in the prevention of doping. However, the French Community of Belgium NADO is planning to grant 'quality labels' to gyms. The idea is that gyms can 'lose' their quality or 'drug-free' label depending on the results of the doping controls. The goal is to encourage gyms to take initiatives in order to prevent PIED use. Moreover, since 2013 the NADO for Flanders has been encouraging (sports) physicians to sign a charter stating that they agree to fight doping in sports by 'all means'. Finally, a recent development is that several politicians, on the advice of the Hormonencel, are proposing that PIED suppliers should receive a heightened sentence under aggravating circumstances similar to illicit drug violations (e.g. selling to a minor, resulting in death) (De Vel, 2013, May 24).

In conclusion, Belgium has adopted a punitive, enforcement-led approach to PIEDs, and has not implemented interventions that seek to reduce the potential harms of PIED use. By enforcing such a repressive approach Belgium risks over-regulation which may have negative consequences for the health and wellbeing of its PIED-using population. For instance, one study found that 1.5% of the users in the UK who inject AAS and other muscle drugs had HIV (Hope et al., 2013). However, the literature indicates that intensified supply control measures could exacerbate the spread of HIV among drug users by driving this population even further underground and, therefore, reducing opportunities to adjust behaviour associated with the spread of blood-born viruses (Wodak & McLeod, 2008). A repressive approach towards PIEDs could, therefore, worsen the risks and harms associated with these substances instead of preventing it.

As described above, Belgium and the Netherlands employ a mixture of policies, rules and regulations in response to PIEDs. To make the difference in policy strategies (supply, harm and demand reduction) of the respective countries more clear, table 3 provides a concise overview. The main differences between both approaches may be summarized as the following; (1) Belgium is mostly reliant on law enforcement efforts (supply reduction), while in the Netherlands some attention is given to demand and harm reduction strategies. (2) In Belgium NADOs and investigative units work together in the fight against doping, while in the Netherlands this is strictly separated, albeit likely to change soon. (3) Belgium criminalizes the use of doping in sport, while the Netherlands does not. Finally, (4) Belgium implements anti-doping regulations, measures and sanctions on a recreational level (low-level competition, fitness and bodybuilding), while in the Netherlands this strategy is not pursued.

2.5 The supply of PIEDs: an under-studied phenomenon

The illicit supply of PIEDs has received little scientific attention when compared to the literature on the use of these illegal substances. In total eight studies can be identified that specifically focus on the illicit PIED market (Koert & van Kleij, 1998; Oldersma et al., 2002; Donati, 2007; Maycock & Howat, 2007; Kraska et al.,

2010; Llewellyn, 2010; Fincoeur et al., 2014; Paoli & Donati, 2014). The most extensive study currently being that of Paoli and Donati (2014) who investigated the Italian PIED market. Moreover, some studies that focus on the use of PIEDs occasionally reveal information about where these substances are obtained (e.g. Striegel et al., 2006; Brissonneau, 2007). However, aside from naming the type of source (e.g. physicians, the Internet) they often do not contain in-depth information on PIED producing and dealing activities.

Table 3

An overview of the supply, demand and harm reduction strategies that Belgium and the Netherlands have employed in relation to doping and PIEDs.

Type of Strategy	Belgium	Netherlands
Supply Reduction	- Creation Doping Law (1965) - Adoption PIEDs in drug law (1974) - Adoption Doping Decree (Fl. Community: 1991/Fr. Community 2001) - Creation of Hormonencel to target animal (1997) and human PIED violations (2003)	- Adoption PIEDs in WED (2001) - Drafting Doping Law (currently being drafted)
Demand Reduction	- Doping prevention campaigns (Fl. Community: 1991/Fr. Community: 2003) - Doping controls in bodybuilding and gyms (Fl. Community: 1991/Fr. Community: 2003) - Implementation general sport education programs (Fl. Community: 2012) - Creation of 'quality label' in gyms (currently being implemented) (Fr. Community: 2013)	- Short-term prevention projects (in the 1990s) - Implementation educational campaign True Strength with focuses on recreational PIED use (around 2008) - Creation doping paragraph for gyms (2009)
Harm Reduction	n.a.	- Opening AAS clinic (2010)

The Netherlands is actually one of the main countries that has conducted scientific research in this area (Koert & van Kleij, 1998; Oldersma et al., 2002; Snippe et al., 2005). Koert and van Kleij (1998) were the first to study the illicit market of PIEDs in the Netherlands. In fact, their research, and the report "Investigation Violations WOG" (1990), was one the main reasons for amending

the Dutch law in 2001; to more effectively combat the illicit PIED trade and the involvement of criminal organizations (see also section 2.4) (Snippe et al., 2005). The main source of information used for Koert and van Kleij (1998) existed of interviews (e.g. authorities, dealers, users). According to the authors, on an annual base around 70 to 90 million Euro worth of PIEDs is illegally supplied in the Netherlands, of which 60 to 70 percent is counterfeit. Koert and van Kleij (1998) divided the PIED dealers who operate in the Netherlands into three categories: 'big-time', 'second-tier' and 'small-scale' dealers. The 'big-time' dealers can be divided into two smaller categories 'organizations' and 'solo operators'. Although 'big-time dealers' sell directly to users, they mostly supply to other dealers and are seen as the primary port of entry through which PIEDs end up on the Dutch market (Koert & van Kleij, 2002). The second-tier dealers sell PIEDs at their gym, or work as a 'house dealer' in one or more gyms, while small-scale dealers tend to be users themselves, who deal to support the cost of their own use or who sell PIEDs they have left over to friends and acquaintances. Furthermore, the authors found that the supply of PIEDs mainly took place in gyms, and that the Internet played a small but growing role.

The authors go on to explain that until the late 1980s the main source of PIEDs in Dutch dealing networks was the pharmaceutical industry. However, the illicit PIED market underwent radical changes at the end of the 1990s. Specifically, the market share of illegal producers in the illicit market for PIEDs has risen dramatically since the mid 1980s. These dealers either cut substances obtained from the pharmaceutical industry, or produce active ingredients independently. At the time of their research, most of these illegal producers, referred to as 'underground labs' (UGLs)[22], were located in countries with rudimentary legislation concerning the pharmaceutical industry (e.g. Thailand, Nigeria and India). However, there were some signs which indicated that some illegal production of PIEDs was occurring in the Netherlands. Finally, in their report some indications were found for the involvement of criminal organizations in this illicit market. Oldersma et al. (2002) conducted a follow-up study and found that no significant changes had taken place since 1998. Nonetheless, there were some signs that organised crime was gaining some control over the PIED market. This suspicion was mostly based on one particular case in 2000 in which a criminal organization distributed PIEDs on a large scale (Snippe et al., 2005). The research of Oldersma et al. (2002) similarly relied on interviews (mostly authorities). However, the knowledge regarding PIED dealers, and the nature and quality of the substances was predominantly limited to one employee of one of the law investigation services, or the information was based on the earlier report of Koert and van Kleij (Snippe et al., 2005).

[22] UGLs consist of unlicensed illegal manufactures that make products specifically for the sale of the illicit market.

Furthermore, two Dutch studies were found that did not directly focus on the supply of PIEDs, but which did provide some information on this illicit market. The first study is that of Snippe et al. (2005) who investigated whether law enforcement agencies could effectively combat the trade after the amendment of the law in 2001 in the Netherlands (see also section 2.4). Within the framework of this research, interviews were held with representatives of the organisations involved (e.g. IGZ), and criminal cases before and after the amendment of the Act were analysed and compared. The last method was rather challenging as the familiarity with PIED cases amongst the police and the Public Prosecution Service was, and still is slight, due to the low priority given to the trade in PIEDs (e.g. difficult to find records of PIED supply). Like the previous two studies, Snippe et al. (2005) established that PIEDs are mainly imported from abroad into the Netherlands, and found some evidence for the involvement of criminal organizations (four of the twenty cases). In these cases involving criminal organisations, PIEDs were supplied on a rather large scale and the trade was highly organized. For example, fictional companies were created to legally import PIEDs. Snippe et al. (2005) further found that the desired effect of the amendment of the Act had been achieved, however, the extent to which it has affected the size of the production and trade of PIEDs remains unknown. The other study is that of de Hon and van Kleij (2005) who investigated the quality of PIEDs by analysing 336 products derived from the illicit market. Besides observing that the quality of illicit market PIEDs is poor, they mention that a split has occurred in the level of dealers. On the one hand there are the "traditional dealers" who have a stake in the sport who combine the selling of PIEDs with advice on training and diets. On the other hand there is the rise of "new dealers" who are only interested in making profit, are barely connected to sport whatsoever, and combine their trade with other illegal activities.

In Belgium no scientific research has been conducted into PIED dealing networks. However, currently there is a study being conducted by Bertrand Fincoeur (2013a, 2013b) who is exploring the supply of PIEDs in Belgian and French cycling. The aim of his project is to develop a model of the supply of PIEDs on the basis of which the effectiveness of anti-doping policies can be evaluated and enhanced and that can be applied, with some modifications, to other sports and countries. Despite that the academic literature is limited in this area, the Hormonencel since 2003 began to compile and publish annual reports on the dealing of hormones in the livestock industry and the supply of PIEDs for human consumption. The latest report they have issued is the 2013 Annual Report. In these reports the Hormonencel discusses the general situation (e.g. law enforcement strategies); the problems they encounter (e.g. steroids and domestic violence); consumption patterns; the organisation, manning and operation of the criminal groups and individuals involved, and the verdicts and sentences passed down. These reports have been analysed for this study (see chapter 4).

It has become evident from the literature review that little research exists concerning the production and supply of PIEDs. When looking specifically at the Dutch and Belgian situation, the Netherlands is actually one of the few countries that has investigated this criminal market. In contrast, in Belgium, no research has been conducted in this area. Despite the lack of research on the supply side of the market, the Hormonencel has systematically investigated these illegal activities, therefore, providing a substantial database for this research to draw on. The reverse is true for the Netherlands, as law enforcement agencies give little priority to this market, resulting in a scant criminal justice database (e.g. see Snippe et al., 2005). Moreover, while some studies have been conducted in the Netherlands, this information is quite out-dated (e.g. the role of the Internet), some methodological issues are evident (e.g. knowledge mostly based on one expert), and no research exists on the effects of policy on this criminal market. Therefore, there is a need for further research to fill in the gap and to enhance our understanding of illicit PIED markets in these countries.

2.6 Conclusion: 'what is next?'

The review presented in this chapter indicates that the demand for PIEDs, both inside and outside elite sport, has been addressed in numerous studies. However, while there is quite a substantial body of empirical research surrounding PIED use in the Netherlands, no scientific studies are conducted in this area in Belgium. Nonetheless, the review of the literature suggests that a demand for PIEDs exists in both countries, in particular within the gym scene, however, no consensus exists on its extent and what harms PIEDs pose to individuals or society (e.g. the amount of PIED-related deaths). Thus, even in this relatively well-studied field some important topics for enquiry remain open to question. Yet, the amount of literature available on the demand of PIEDs can be considered sizable when compared to the supply side of this market, as research is virtually non-existent in this area. Almost all the studies regarding the supply of PIEDs stem from the Netherlands, while none exist in Belgium, indicating that our understanding of PIED markets is fragmented and incomplete. There is a need to fill this gap and to expand our knowledge on the supply of PIEDs and to understand the dynamical influence law enforcement and technology has on this illicit market and its operation. This information is particularly important as it may be used to learn more about the effectiveness of drug policies intended to reduce PIED supply, its use and the associated harms. Further, knowledge on illicit drug markets can assist in designing and evaluating source country interventions, interdiction and other law enforcement efforts, and may assist in designing and evaluating harm reduction, treatment and law enforcement interventions (Ritter, 2005: 1). The next chapter will draw on concepts developed in relation to other illicit drug markets in an effort to develop a theoretical framework for understanding PIED markets.

Chapter 3

Theoretical perspectives on illicit drug markets: economic action, networks and cultures

As the PIED market is an illicit and clandestine trade with corresponding barriers to reliable research, it is useful to incorporate theoretical concepts that have been applied to other illicit drug markets (e.g. the production and dealing of cannabis). Until now, the doping or PIED market has predominantly been discussed as being controlled by 'mafia-type' organized crime. Organized crime is often conceptualised as criminal groups that attempt to regulate and control (whether it be with violence or corruption, or a combination of both) the production and distribution of a given commodity or service unlawfully (Varese, 2010). Mafia groups (e.g. Cosa Nostra or Yakuza), specifically, are a *type of organized crime group* whose core activity exists of 'offering protection' (contract enforcement) (o.a. Gambetta, 1993; Chu, 2000; Hill, 2003; Varese, 2001, 2010). However, this conventional view is a narrow and restrictive lens through which to view the operation of illicit drug markets (Paoli & Fijnaut, 2004). Alternatively, many scholars have shown that every illicit drug market is different, with its own particular characteristics (Ritter, 2005). As Potter (2009: 51) explains, drug markets "vary in relation to time, to place, to culture, and by the types of drugs being distributed, amongst other factors". Furthermore, drug markets constitute different levels from production to retail, in which a variety of individuals and groups are involved who produce and deal drugs for different reasons (e.g. profit, to help out friends). Therefore, drawing on the extant literature and leading theoretical concepts this chapter will describe the operation of drug markets and how various individuals and criminal groups function within these illicit markets.

This chapter seeks to understand why individuals became involved in dealing PIEDs (e.g. economic or cultural reasons) and what factors influence the structure and formation of this illicit market (e.g. policy, technical innovations). The research documented here represents merely a sample of the literature, chosen to reflect the diversity of disciplinary approaches within the field of illicit drug markets. Specifically, three theoretical orientations will be unpacked in more detail in this chapter: 'the illegal enterprise perspective, 'the social network model', and 'the socio-cultural approach'. While the first two perspectives have a

long history in illicit drug (and organized crime) research (e.g. see Ritter, 2005; Kleemans, 2014), the latter is a more recent development in the academic debate concerning the drug market literature (e.g. see Sandberg, 2012a). All three theoretical frameworks will be challenged, and instead of opting for one perspective or another, I seek to provide a more nuanced explanation of PIED dealing by addressing the multiple motivations and the diversity of different criminal groups and individuals involved in the PIED market.

3.1 Being a 'business man': dealing PIEDs as a market opportunity

The illegal enterprise perspective has held a dominant position in the academic debate surrounding illicit drug markets (e.g. see Ritter, 2005; Kleemans, 2014). Here, the dealing of illegal goods and services are described in the context of 'markets' (demand and supply). Economics, then, can inform both the supply-side aspects of the illicit drug market (market structure, pricing practices, profits, importation and distribution systems) and demand side (consumption, prices paid, price elasticity and cross-price elasticity of demand) (Ritter, 2006: 456). This model focuses on economic relationships over personal relationships (in contrast to the social network model and the socio-cultural approach), and economic considerations therefore form the basis for the formation and success of drug dealing networks.

In this sense, criminal groups and activities, such as drug trafficking, are considered to be a result of illegal market dynamics (Van Duyne, 1997). However, the PIED market differs from most illicit drug markets, as it is an illicit market that centres around a commodity that is not illegal per se. The legal status of PIEDs varies considerably depending on the context. For instance, certain types of PIEDs (e.g. steroids) may be legally obtained through a physician, or depending on the country, the use and supply of these products may be legal. For these reasons Paoli and Donati (2014) refer to the PIED market as a semi-illegal market. However, considering that the sale of PIEDs remains an illegal activity outside the boundaries of a specific legal context (e.g. prescription) here I will simply refer to the PIED market as an illicit market.

In addition to this, the entrepreneurial approach stresses the importance of examining the similarities between legal and illegal activities. While this theory has evolved over the course of time, the central point remains: criminals are rational entrepreneurs who operate in the same manner as legitimate businesses, the only difference being that they deal in illegal goods and services (a.o. Smith, 1975; 1985; Rueter, 1985; Adler, 1993; van Duyne, 1996; Haller, 1997; Gottschalk, 2009). Indeed, there is often a thin line between legal activities and illegal activities when it comes to PIEDs. For example, in operation Gear Grinder, an investigation into the Mexican supply of AAS to the United States (US), the pharmaceutical companies involved were all legitimately registered in Mexico, and manufactured their products under the oversight of the Mexican

government. The process only became an illegal activity when the company began to smuggle their products to the US. This example illustrates that a legal business can carry out both legal and illegal activities.

Furthermore, a fundamental tenet of this approach is that criminal markets are viewed as an ordinary economy in which rational actors engage in illegal practices for financial gains (Jacques, Allen & Wright, 2013, Jacques & Wright, 2014). While economic actions are understood in relation to market structures, a central feature of this perspective is that actors possess the cognitive ability to reflect rationally on their position in a particular market and act to exploit this position (Aspers, 2011). For example, Jacques and Wright (2011) discuss the mechanisms of informal control, including retaliation, avoidance, negotiation and tolerance, which drug dealers use to regulate conflicts. Unlike law-abiding citizens, criminals have little formal means (e.g. file a lawsuit) of extracting justice from victimizers (e.g. robbers) and of settling market-based conflicts (e.g. over territory), and instead resort to these informal controls. Retaliation, for example, has on the one hand a retributive and deterrent effect, while on the other hand, a reputation for retaliation may scare away buyers, which would reduce the rate of trade. Jacques and Wright (2011) argue that these different forms of informal control, and their effect on the rate and price of drugs, are the product of both rationality and opportunity.

According to this model then, drug suppliers are regarded as criminal entrepreneurs, driven by the high demand for their products, whose actions are rationally calculated upon the 'maximization of profits'. There are some indications to suggest that PIED suppliers are likewise market driven. For example, Paoli and Donati (2014) found that the main and often sole motive for engaging in the supply of PIEDs in Italy is personal profit. Like any other successful entrepreneur that deals in goods and services, these PIED suppliers have identified a niche in the marketplace. However, several studies have shown that the motivations and actions to sell illegal goods are not as purely rational as often thought (a.o. Levitt & Venkatesh, 2000; Caulkins & MacCoun, 2003; Allum & Sands, 2004; Sandberg, 2012a). For example, Kraska et al. (2010) indicate that PIED suppliers frequently start as users themselves and slowly expand their business in order to compete in weight-training sports and/or to provide a 'community service' (e.g. helping out others who share the same goal). The suppliers in this example are not solely influenced by economic forces (e.g. securing profits) but are also influenced by their socio-cultural background. This point will be discussed in more detail in section 3.3.

Furthermore, as Kleemans (2014: 4) notes, the rationality assumptions of economic theory sometimes drive scholars in the direction of overemphasizing the individualistic characteristics of illegal entrepreneurs. Considering the article of Jacques and Wright (2011) on informal control mentioned above, Alex Stevens critically notes that the authors overlook the fact that these drug dealers have no way of predicting in advance what the utility effects of particular informal

control strategies will be (personal communication, 2015, April 13). Alternatively, Stevens suggests that dealers use cultural scripts to decide their courses of action. This does not involve the explicit calculation of pleasures and pains, but of learning the appropriate actions to apply in certain situations from talking and interacting with their peers within a particular socio-cultural setting.

While an approach centred on the economic rationality has the advantage of emphasizing the choice that individuals make to traffic drugs, it falls short in explaining the choices themselves. Indeed, the motivations of drug suppliers, economic or otherwise are no doubt important, however, we must also examine the interpersonal networks and the social and cultural settings in which these choices are situated and therefore structured. Let us expand on this idea by first looking at the importance of social capital and the embeddedness of actors in webs of social relations in facilitating drug dealing activities.

3.2 PIED dealing and 'criminal networks': social relationships at the root of economic action

The social network (SN) approach has been used largely as a way to explore the structure of organized criminal groups, where the traditional view of hierarchal and centrally controlled networks has been replaced by the idea of 'criminal networks' (Easton & Karaivanov, 2009). Criminal networks can be defined as "sets of actors that are connected by ties which in some way or other support the commission of illegal acts" (von Lampe & Johansen, 2006: 167). In particular, the SN approach seeks to account for groups of criminal individuals and the sets of links that connect them. The links may represent a wide variety of social connections: communication channels, friendships, family, criminal or business relationships and so on (Easton & Karaivanov, 2009). These connections may be bidirectional or unidirectional and can reflect a measure of the intensity of the relationship or simply its presence (Easton & Karaivanov, 2009). Most importantly, these links, those people with whom individuals interact on a regular basis, and even some with whom individuals interact only sporadically, influence beliefs, decisions and behaviours.

However, the role of networks is distinct in that it stands in contrast to approaches which emphasize simple association (Easton & Karaivanov, 2009). Rather, it seeks to analyse the main socio-structural components of drug markets, considering both risk reducing and opportunity expanding methods of increasing personal capacity (Morselli, 2005: 23). Central to this model are the social dynamics of criminal networks, which are viewed as cooperative relationships that provide access to profitable criminal opportunities (Morselli, 2005; Kleemans & de Poot, 2008). Indeed, social relationships, whether pre-existing (e.g. friendship, family) or developed over time through criminal cooperation, are essential as they support and promote trust (Carrington, 2011). For example, Maycock and Howat's (2007) research on steroid using subgroups

found that social capital facilitated the operation of AAS distribution networks. The subcultural norms and social trust that existed in these networks allowed suppliers to sell steroids and other muscle drugs to others with a reduced risk of detection, thereby supporting the idea that social relations are essential for building trust and creating criminal opportunities.

Importantly, the SN perspective does not only look at the quantity of contacts and the density of networks, but also the quality of contacts and the strategic positioning of certain individuals between parts of networks (Kleemans, 2014). Here, the focus is not solely on one activity or market, or how individuals and groups are structured therein, but includes the relational positioning of actors within criminal networks and amongst criminal subgroups. As Morselli (2005: 37) explains:

> *"The social network represents the foundation from which outlaw partnerships, criminal ventures, and criminal enterprise extend and continue. Relational positioning within this interest-based exchange network of potential co-participants should therefore be the focus of analysis. Such relational positioning is marked by an actor's ability to be entrepreneurially flexible, and this entrepreneurial flexibility is indicated by the capacity to control the resources needed by others or, in other words, to place oneself within the interest of others".*

For example, Ronald Burt, a pioneer of social network theory, suggests that the gaps between two different criminal (sub)-groups are connected by a "broker", who bridges 'structural holes' in criminal networks, providing individuals with all kinds of strategic options (Morselli 2005; cited in Kleemans, 2014). Morselli (2001: 205-206) maintains that those illegal entrepreneurs who attain such a non-redundantly characterized brokerage position place themselves so that they control not others, but the information and resources that others need. SN theorists emphasize the ability of a person to acquire a place between the interests of others by having certain beneficial resources such as money, knowledge or contacts (Kleemans, 2014). SN studies on criminal groups in particular look at the dynamic interaction between individuals in these groups and how these individuals pool their resources in order to exploit entrepreneurial opportunities.

Therefore, from an economics approach the SN perspective focuses on the costs and benefits of creating and maintaining links within a social network. In contrast to the illegal enterprise approach, within the SN model the economic initiatives of individuals, while still central, are considered to be embedded in structures of social relations (Granovetter, 1975, 1985; Burt, 1992), and become an integral part of the social system of these criminal groups (McIllwain, 1999).

For instance, as Granovetter (1985) explains in his findings between 'strong' versus 'weak' connections in the context of searching for employment; those who obtained jobs through social contacts often did so through 'strong' ties, but even more often they obtained jobs through contacts with whom they had 'weak' ties. Granovetter (1985) goes on to suggest that the importance of weak ties can be in part traced to the fact that they often connect an individual to parts of a social network to which that individual would otherwise not had an opportunity to engage with. Thus, weak ties, along with 'medium' and 'strong' can provide access to information and opportunities, criminal or otherwise, which an individual might not find through alternative means.

Many authors who stress the economic aspect of social network ties assume that the observed criminal network is a result of strategic and intentional interactions among actors seeking an optimal (economic) outcome. Said another way, members of the network receive pay offs, which depend on the structure of the social network, and therefore the formation of the network itself is the product of an optimization process in which links are formed at the discretion of individuals in the hopes of achieving positive economic outcomes (Easton & Karaivanov). An alternative strand of this approach takes the network structure as a given and seeks to understand how network structure influences economic activity by comparing and analysing outcomes achieved by particular types of social networks (Ballester et al., 2006).

Nevertheless, while a perspective focusing on social embeddedness opens up questions surrounding co-offenders and the dynamics of criminal cooperation, technical SN analysis remains rather static, and in general grants more weight to the frequency and strength of (observed) contacts ('quantity') than the content of these contacts ('quality') (Kleemans, 2014: 8). For instance, von Lampe (2009: 4) suggest one limitation of the SN model is that it overlooks the amorphous nature of interpersonal links between potential co-offenders, insofar as these links are established through, and mediated by, particular social settings rather than by direct dyadic relations. As an example he mentions the work of Marcus Felson who, in a discussion of gangs, argued that offender networks are unbounded and unstable and that, in order to account for the recurrence of co-offending, one must look not only at network structures but at the locations where offenders meet and socialize (Felson, 2003: 156; cited in von Lampe, 2009: 4). In this context the socio-ecological conditions are highly relevant for understanding patterns of criminal cooperation. Another criticism is that accurate and comprehensive data on dark networks are difficult to obtain, as most SN academics are heavily reliant on law enforcement data (e.g. wiretap records). In respect to the data collection it may be questioned if these are representative, as the contingencies and biases of law enforcement are reflected in the picture of criminal structures created by network analysis (von Lampe, 2009).

Finally, while some SN scholars assume that social structure and culture play some role in determining an individuals' course of action, most tend to rely on a rational choice position and assume that individuals and criminal networks exploit resources in a strategic way (Kleemans, 2014). Further, they suggest that the formation of the network itself is the product of an optimization process in which links are formed at the discretion of individuals or by optimal social networks. Subsequently, the ways in which social systems of rules and values structure individual action and social networks are overlooked. Economic action, such as the dealing of drugs, is always and inevitably a social action and while this approach offers an analytical framework that places social interactions amongst a given set of actors centrally, it fails in understanding how both network formation and network influence are impacted together by economic and socio-cultural factors. It is to this we now turn.

3.3 'Steroid culture': the role of culture in illicit PIED markets

Both perspectives discussed so far, fall short in capturing the complexity of drug markets. While SN analysis does well to move beyond overtly rational, economic explanations, by highlighting how individuals are embedded within a web of social relations and ties, it still remains over-focused on the network as a cohesive entity, within which actors strategically position themselves (Clark, 2007). Indeed, both the economic and the social network approach over-rely on what is called methodological individualism. Methodological individualism refers to the idea that social institutions and social change arise as the result of the actions and interaction of individuals, without acknowledging influences on social behaviour that emerge at the level of the group (Becker, 1976; Elster, 1989). Subsequently, both perspectives overlook themes of social systems of rules and values, and in particular the embeddedness of culture within criminal networks.

We also must consider the social structures in which human action is situated (Giddens, 1984). In the structuration theory of Anthony Giddens (1984), for example, the interplay of people's choices (agency) within the circumstances they are situated (structure) are emphasised (Bottoms & Wiles, 1992). Human actions cannot be fully grasped unless we understand how human agency itself is reflexively and recursively implicated in social structures (Held & Thompson, 1989). A characterizing feature of Giddens structuration theory is that it seeks to move beyond the dualism of structure and agency, or of prioritizing one over the other (Stones, 2005). Rather, structure is a significant medium of the practice of agents, and at the same time is also the outcome of the practices of agents, which Giddens refers to as the 'duality of structure'. Therefore, structures do not exist outside of action, and structures not only constrain, but also enable social action (Bottoms & Wiles, 1992).

Following this line, cultural criminology emphasizes the need to account for the ways in which culture mediates structural forces and influences individual and collective action (a.o. Hayward & Young, 2004; Ferrell, Hayward & Young, 2008; Siegel, van Gemert & Bovenkerk, 2008; Schuilenburg et al., 2011). For Ferrell, Hayward and Young (2008) culture cannot be "reduced to a residue of structure, yet culture doesn't take shape without structure" (p.2). Culture, in structuration theory, is presented as what people take for granted, what is normal and what is not, what is important and what is not, what is acceptable and what is not, within each social context (Warf, 2011). In other words, for structuration theory, culture consists of the rules, routines and resources that are instantiated in social systems (Warf, 2011), and it is the cumulative effect of people's living and working within social frameworks that produces and reproduces culture (Pang, 2010). The cultural context is generated and regenerated through the interplay of action and structure (Pang, 2010).

A particular focus of cultural criminologists is on the shared meaning of subcultural style and rituals amongst subcultural groups (Castle, 2014). However, as Sandberg (2012b) notes in his research on cannabis markets, subcultures cannot be simply reduced to social networks. If we would adopt a traditional subcultural approach we risk taking the group of individuals or the individual as the unit of analysis as opposed to placing the using and dealing of drugs in a wider social context (Sandberg, 2012b). While in this research bodybuilding is adopted as a case study, which may be defined a 'subculture', using PIEDs is not their 'master status' or the primary life project of bodybuilders (Monaghan, 2001). Rather, PIEDs are a means to an end, an instrumental tool in order to create 'the perfect body' (Monaghan, 1999), as opposed to an end in themselves. People use and/or deal PIEDs in different social contexts for different purposes, and participants in bodybuilding, who primarily focus on bodily modifications, are just one of those groups. Therefore, bodybuilding subcultures are not the unit of analysis per se, but serve as a micro case study to add empirical specificity to the wider socio-cultural context of the Dutch and Belgian market for PIEDs.

Indeed, as Sandberg (2012b) explains culture can easily be missed if it is defined as 'groups of people' as opposed to a collection of symbols, rituals and stories that structure action. Rather, as Ferrell, Hayward and Young (2008: 2-3) suggest;

> *"Cultural forces then, are those threads of collective meaning that wind in and around the everyday troubles of social actors, animating the situations and circumstances in which their troubles play out. For all parties to crime and criminal justice the negotiation of cultural meaning intertwines with the immediacy of the criminal experience".*

In this dissertation, the socio-cultural approach is not being applied as a singular 'model' or 'theory' per se, however greater attention is given to the role played by social and cultural factors in influencing the market behaviour of criminal groups and individuals (e.g. see Sandberg, 2012a; Belackova & Vaccaro, 2013; Mjåland, 2014). While culture, at first, was readily reduced to social networks (Sandberg, 2012a; Granovetter, 1973), economic sociology has given increasing importance to culture itself. 'Culture', defined as the beliefs, norms, 'tools', rules and behaviours appropriate to the setting, is now seen as a key factor for understanding markets (Aspers, 2011: 9; cited in Sandberg, 2012a). Therefore, in order to understand illicit drug markets we need to comprehend the particular characteristics of market actors, their cultures and the symbolic meaning of the goods they are selling, rather than purely defining them in either economic or social terms (Sandberg, 2012a: 1148). Illegal drug markets are divergent and have their own sets of beliefs, norms and rules, the market *culture* so to speak. This suggests that certain beliefs, norms and rules within particular settings are important factors in influencing the market behaviour of suppliers. For example, in Sandberg's (2012a) study of cannabis markets, he suggests that the cannabis economy has different cultural bases. In street markets and in the higher levels of the cannabis economy, a rather violent and criminal culture dominates. At the same time, many sellers and buyers are friends and non-commercial norms and altruistic values are widespread. In what Sandberg (2012a) conceptualises as a 'cannabis culture', profit is frowned upon and seller identities rejected. "If small-scale dealers selling to friends want to climb the hierarchy of the cannabis economy, or sell drugs on the street, they would have to master quite different cultures" (Sandberg, 2012a: 1134). Thus, to fully understand the mechanisms of the PIED market, it is necessary to describe, conceptualize and discuss the different cultures in which the PIED economy is embedded.

The importance of social and cultural factors for dealing drugs is particularly apparent at the 'lower' end of drug markets (a.o. Coomber & Turnbull, 2007; Sandberg, 2012a; Coomber & Moyle, 2014; Belackova & Vaccaro, 2013). As Parker (2000) explains, users often try to refrain from coming into contact with 'real dealers' and instead make use of brokers or facilitators (e.g. relatives, 'friends' or a 'friend of a friend'). An informal but complex social arrangement forms within these networks where drugs are obtained for free or cost price, by means of sharing purchases, or are obtained through these 'friends' (Belackova & Vaccaro, 2013). For these individuals supply activities are a normal part of the drug using culture, just as buying a round is a norm within drinking cultures (Coomber & Turnbull, 2007). These 'friend dealers' are personally and socially not considered real dealers but as someone who is helping or sorting out friends and acquaintances (Parker, 2000; Coomber & Turnbull, 2007; Coomber, 2010). What distinguishes these friend dealers from 'real' dealers is that the former are socially and culturally connected to those to whom they deal.

Similarly, several studies on PIED consumption indicate that users often obtained their products from someone close to them such as relatives, friends, training partners and coaches (a.o., De Boer et al., 1996; Abraham et al., 1999; Laure et al., 2004; Backhouse et al., 2007; Cohen et al., 2007; Gezondheidsraad, 2010). However, suppliers who are not labelled as 'real' dealers by their social surroundings may in fact actually belong to this category. For instance, being friends with your customer has advantages such as reducing the risk of being caught by the police, selling more drugs and reducing the risk of getting ripped off (Potter, 2009; Belackova & Vaccaro, 2013).

These 'friend dealers' are often separated into "user-dealers" - people who consume so much that they have to deal in order to sustain their own habits - and "social suppliers" (Potter, 2009). Hough et al. (2003: 36) define the latter as "the non-commercial (or non-profit-making) distribution of cannabis to non-strangers". However, recently Coomber and Moyle (2014) merged both terms and refer to both groups as "minimal commercial suppliers"; as for both groups securing profits is not the primary motivation. In contrast to minimal commercial dealers the economic action of 'real' dealers rests on the expectation of making profit by utilising the opportunities of market exchange (Weber, 1965). However, despite the different motivations, these dealers are all committing illegal acts and, therefore, according to the law are considered to be 'real dealers'. Thus, in order to separate these different types of dealers, in this research "real dealers" will be referred to as "market oriented dealers", while "user-dealers", "social suppliers" or "minimal commercial dealers" fall in the category "socially oriented dealers". The rationale of these socially oriented suppliers to be active in these illegal activities seems to come from participating in certain subcultures rather than pursuing profitable economic opportunities. This is not to argue that financial aspects do not play a role, but they may be less influential in determining the market behaviour for these types of dealers. The selling, buying and use of drugs is deeply embedded in the social and cultural processes of these subcultures and plays an important role in the creation and development of drug markets.

However, this does not imply that market oriented dealers do not have any 'culture' of their own. Although these dealers will engage less with their customers, they will still have certain beliefs, norms and rules when operating in an illegal market. For instance, in the organized crime literature, several scholars have pointed out the importance of culture in explaining the behaviour of organized crime groups. Many organized crime groups are nationally or ethnically rooted organisations, with histories and cultures specific to their regions or countries (a.o. Bovenkerk & Yeşilgöz, 1998; Bovenkerk, 2001; Zaitch, 2002; Allum & Sands, 2004; Paoli, 2003; Siegel, 2002, 2011). These cultural factors seem to be important in nurturing organized crime and mafia groups and in creating bonds and trust within these enterprises. The point here is that we cannot understand the economic behaviour or social relations of PIED suppliers,

without considering the social and cultural context in which this behaviour is placed. However, while many cultural criminologists argue that 'culture' should not be taken as the explanation, but as the subject that needs to be explained (e.g. Ferrell, 1995; Bovenkerk, 2001), I argue that in certain drug markets socio-cultural factors are essential for understanding the behaviour of dealers, and the structure of dealing networks.

3.4 'Connecting the dots': a socio-cultural framework for assessing PIED markets

The literature covered here suggests that a variety of criminal groups and individuals operate in illicit drug markets: from organized criminals to minimal commercialist dealers. All of the perspectives discussed above have valuable components that help us to understand how criminal individuals and groups, such as organized criminals, participate, advance and persevere, in both an independent and organised context, and in different types of illegal markets. For instance, the strength of the economic approach lies in illustrating how economic considerations are an important aspect of the formation and success of criminal groups and individuals (Albanese, 2007). The network approach is effective in showcasing how and why an entrepreneur's business activities or criminal behaviour is structured in a particular way (Morselli, 2005). Nevertheless, while these approaches provide a means to explore, for example, group structures and market dynamics, they say little about the nature of such relationships (Potter, 2009), and neglect "the cultural and symbolic moment" (Emirbayer & Goodwin, 1994: 1446) in which these economic and social actions take place. The strength of the socio-cultural approach lies in the assessment of the influence of culture on drug market structures and the action of criminal groups and individuals.

Yet, there is a danger of creating false dichotomies of a "pyramid structure" versus a "loosely connected network", or of "economic rational" versus "socio-cultural acts". Rather than opting for one perspective, it is imperative to address the PIED market from different angles. It is clear from the literature that the structure and formation of illicit drug markets are often shaped by a variety of factors including the types of drugs dealt within them, the characteristics of the users served by them, the social structures which sustain them, the cultural context in which the markets exist, and economic and market forces (e.g. technical innovations, drug policies) (May & Hough, 2001, 2004; Potter, 2009; Sandberg, 2012a). It is important to account for the specific characteristics of dealers and their motivations to sell PIEDs in relation to the social and cultural context in which these markets exist. In other words, we need to understand drugs and crime in a three-way relationship between structure, culture and agency, in which none of these components is simply reducible to the other (Seddon, 2006). We need to examine the use and supply of PIEDs, as embedded within a diverse combination of social, economic and cultural processes. In this

research an inter-disciplinary approach will be adopted in that I seek to synthesise and integrate different disciplinary approaches in relation to drug markets, in order to provide new insights (Ritter, 2006). PIED dealing will be conceptualized in terms of a 'market' in which the demand for and the supply of illegal substances are central. Nonetheless, while the basic 'supply-and-demand model' provides a point of departure for richer theoretical and empirical investigation of drug markets (Reuter, 2010), social and cultural factors will likewise be considered as they have a significant influence on these markets (Sandberg, 2012a).

Chapter 4

Methodology:

Researching the PIED market

Before I began my research, sport and 'health' had already become important pillars in my life. I went to the gym six times a week to lift weights or to do one of those typical 'body-something-added' classes (i.e. "Body Pump", "Body Attack", "Body Combat"). Today, CrossFit[23] and gymnastics have become the centre of this passion. I was, and still am, constantly focussed on my nutrition and overall health, exploring 'superfoods'[24] and supplements to enhance the quality of my life and exercise routine in a natural manner. I regularly trained with my brother, at that time a 'hard-core' fitness trainer, who taught me how to properly lift weights in order to gain strength. My interest in studying PIEDs began when that same brother was offered steroids by a fellow weight-trainer during one of his workouts at the gym. Casually, the man asked if he would be interested in "boosting his training results". Before that time I only knew of PIED use by elite athletes within the context of sport, better known as doping. It never occurred to me that these substances were consumed for non-athletic reasons, such as to increase muscle mass or body image in general. While my brother politely declined the offer, my curiosity was piqued and I wanted to know more about these people who sold and consumed steroids at gyms. This event prompted me to select the issue of PIED use by non-athletic user types as a dissertation topic for my masters in criminology, which ultimately led to conducting my doctoral research in this field. During my masters' research my main method consisted of ethnographic fieldwork at various bodybuilding sites (e.g. working at a supplement shop, training in hard-core gyms) and conducting interviews with people involved in bodybuilding. Although continuous muscle ache became a part of my daily life, as I trained with bodybuilders, the intense training helped me to establish important contacts within the field, who continued to act as valuable resources of information and gatekeepers throughout my doctoral research.

My masters' thesis was particularly important as it revealed that social or interpersonal relations facilitated dealing practises within bodybuilding

[23] The official CrossFit description is performing "functional movements that are constantly varied at high intensity". CrossFit is a core strength and conditioning program.

[24] "Superfoods" is a (marketing) term used to describe foods with supposed health benefits.

communities by creating social relationships based on shared identities, reciprocity and trust. However, while ethnographic research and interviews are rich in their capacity to describe in detail the operation of local PIED markets, it was difficult for me to generalize these findings to the broader Dutch PIED market. Therefore, for my doctoral dissertation it was paramount to widen my data collection, which I did by building on my ethnographic fieldwork, expanding my interviews and by including an analysis of criminal justice cases, other secondary sources (e.g. statistics and media articles) and AAS-selling websites. Importantly, as countries continued to implement tough measures against doping, PIED use and its supply, it became necessary to study the effects of increased law enforcement on this growing illicit market, and to explore alternatives such as harm reduction in minimising the harms of PIEDs. I decided then to expand my area of inquiry to include Belgium, a country with a PIED markets highly interconnected with the Netherlands, yet whose zero-tolerance approach to curbing the problem of PIEDs differs markedly from the Netherlands more pragmatic approach.

4.1 Research questions and design

The first research question addressed in this work is: what are the fundamental characteristics of PIED suppliers, their modus operandi and their motivations in the contemporary illicit PIED market? (1). The aim is to explore the characteristics of persons involved in these markets, why they are involved in these markets, their dealing strategies and the cultural and social dimensions of PIED markets. The second research question considered in this study is: how do PIED markets form and develop within and between Belgium and the Netherlands, and beyond? (2). The goal is to examine how PIED markets are organised and structured (e.g. horizontally/vertically), and how relationships are formed and developed across both a national and international context. Finally, the last research question considered is: how do the Belgian and Dutch PIED control systems influence the characteristics and structures of the PIED market? (3). The intention here is to analyse anti-doping and PIED policies adopted in Belgium and the Netherlands and understand their implications on these illicit markets in both countries.

In order to examine these research questions the following multi-source qualitative research methods have been adopted:

- A content analysis of policy reports and PIED dealing cases initiated by criminal justice agencies, and other secondary sources (e.g. news articles, seizure statistics);
- Ethnographic fieldwork conducted at bodybuilding sites (e.g. competitions, supplement shops) for a time-period of two years;

- Semi-structured interviews with law enforcement officers, producers, dealers and other stakeholders (e.g. users, physicians, lawyers, anti-doping authorities); and;
- A content analysis of AAS-selling websites.

Due to the covert nature of PIED dealing networks, crosschecking the validity of my data was vital. The use of data triangulation in research methodology is particularly important as it allows researchers to obtain a better, more substantive picture of the subject of study and as a means to validate research findings (Denzin, 1978; Fielding & Fielding, 1986; Fielding & Schreier, 2001; Berg, 2007). Data triangulation can refer to several forms of data collection (e.g., the use of multiple researcher or multiple theories), but in this context it refers to the application of different methods to study the same subject (the use of multiple data-gathering techniques). An important feature of triangulation is not the simple combination of different kinds of data but the attempt to relate them so as to counteract the threats to validity identified in each (Fielding & Fielding, 1986; cited in Berg, 2007: 7). Simply put, the idea is that if different kinds of data support the same conclusion, confidence in the conclusions is increased (Fielding & Schreier, 2001).

In this work a variety of data sources will be drawn upon when making my argument. For example, when describing the characteristics of the illicit PIED market in chapter 5, data derived from the criminal justice cases (by referring to the specific case; e.g., BE1 (Belgium, case 1)) is supported by information gathered from the interviews with authorities and dealers from the Netherlands and Belgium (in the form of quotes). Thus, to strengthen my conclusion, I triangulated the findings from the different data sources throughout my work. Subsequently, adopting a multi-method approach allowed me to evaluate the veracity of the data I obtained in my exploration of the PIED market. Moreover, combining old cases and new cases, while simultaneously engaging with current dealers, provided insight into changes in the PIED dealing networks over time. However, to ensure constant awareness of an opposing discourse I adopted a negative case testing or null hypothesis trick (Becker, 1998). Specifically, I intentionally sought negative or unique information that refuted my hypothesis until the data was saturated and built into the 'themes' presented in this dissertation. In short, data triangulation enabled the development of a rich picture of PIED dealing networks, the marketplace, and social and cultural norms, rules and values present in individual PIED markets and of the influence of control policy.

4.2 Ethical issues

The Ph.D. program I was a part of throughout this research, the Doctorate in Cultural and Global Criminology (DCGC), is a joint doctorate program including

four different institutions: University of Kent, University of Hamburg, Utrecht University and Eötvös Loránd University (ELTE). One of the requirements of the program was to choose two universities - 'your mobility pathway' - that would serve as "your main base" throughout the three-year duration of the program. The University of Kent and the Utrecht University were part of my mobility pathway. Consequently, ethical approval to conduct this research was needed from both universities. The Research Ethics Committee (REC) of the School of Social Policy, Sociology and Social Research (SSPSSR) department at the University of Kent granted me permission to conduct this research. In the Netherlands no approval of an ethical commission is needed in this discipline. Instead I was required to discuss ethical aspects of my research during meetings with my supervisory committee (O'Gorman & vander Laenen, 2010). The supervisory committee likewise gave their approval to conduct this research.

The most serious ethical concerns in the social sciences is the assurance that participants are involved voluntarily and informed of all potential risks stemming from the research. Yet, while the concept of voluntary participation is an important ideal, it is not always attainable, in particular in ethnographic research. For instance, when I entered a bodybuilding setting it did not always mean that all participants had given their informed consent. Aside from the practical issues, it would be highly disruptive of the activities and settings being observed to ask consent of every individual I encountered during my fieldwork**.** Nevertheless, I informed participants about my research and asked consent when I actively and continuously interacted with them. However, most of the time, participants were often already aware of my intentions, as others (e.g. gatekeepers) had informed them about my work and me. So, while I did not literally tell everyone about my research, in general my role as a researcher was quite clear to many individuals in the field. With regards to the interviews, either written or oral consent was required. While written consent was preferred, this was not always feasible (e.g. phone interview), and, instead, oral consent was asked for and recorded (tape recorder). Furthermore, when I did not meet the individual face-to-face, an informed consent form was sent to the participants electronically with a request to sign and return the form to me. As this research did not include minors or other protected groups all participants were able to provide their own informed consent.

All information gathered throughout this research (e.g., interviews, field-notes, criminal justice cases) was kept completely confidential. Anonymity was achieved through the use of pseudonyms and in some cases the names and locations of settings have also been changed. In this research concealing the identities of participants was crucial due to the illegal nature of PIED dealing, the involvement of different parties (authorities and dealers) and because the group of experts within this field is quite small. For example, I decided not to reveal the specific function of involved authorities (e.g. Health inspector of IGZ), but kept this rather broad ("Dutch or Belgian official"), as others within this field could

easily take an educated guess about the identity of my study participants. Finally, all participants were offered the option to look over the transcript of the interview before publication to check anonymity, and, if needed, revise or retract information for any reason. None of the participants chose to exercise this option.

4.3 The analysis of Belgian and Dutch PIED dealing cases

A content analysis of Belgian and Dutch criminal cases which related to the production and distribution of PIEDs forms an important part of this research. PIED-related cases were included from 2003 to 2013. In total 64 criminal justice cases from the Netherlands (N=33) and Belgium (N=31) were included. Cases were chosen based upon explicit selection criteria: (1) the case involved the production, supply or any other dealing activity related to PIEDs, and (2) the dealing activities at some point had to take place in either Belgium and/or the Netherlands. The criminal justice cases included (extensive) information about the investigators, recorded wiretap conversations, interrogation reports and/or court verdicts.

In the Netherlands little attention was given to the illicit PIED market until the end of the 1990s. In 2001 the amendment of the Dutch Provision of Medicine Act[25] came into force, with the intention to more effectively target this criminal market. Yet, still relatively few investigations were initiated in regards to the production and supply of PIEDs. Nevertheless, Snippe et al. (2005) analysed criminal cases prior to (1998-2001; N=11) and following (2001-2004; N=7) the amendment, to explore whether the dealing of PIEDs was now effectively combated. As it would be redundant for me to analyse these investigations again, and considering the difficulty of retrieving such cases (this will be detailed in the proceeding pages), information regarding these investigations was borrowed from the research of Snippe et al. However, an exception was made for two investigations, which I examined myself, as these were considered to be two of the largest cases concerning PIEDs ever to be conducted in the Netherlands. One of these cases in particular is relevant to my analysis, as it raised suspicions that organized crime was gaining control over the PIED market. I was personally able to retrieve 38 cases which occurred after 2003, bringing my sample to a total of 40 Dutch criminal justice cases. However, seven cases were excluded, as there was either not enough information included in the file or the case overlapped with an investigation of one of the other Dutch investigation services (six cases) or with a Belgium investigation (one case). Instead of considering these cases as

[25] In order to more effectively combat the illegal PIED trade and the involvement of criminal organisations in the Netherlands, the Dutch government amended the law in 2001 (Snippe et al., 2005). As a result of this amendment punishment has been increased and authorities have gained more investigative powers (e.g. surveillance teams, wire taps) (see chapter 2).

two individual investigations, they were taken together and counted as one. Thus, in total 33 Dutch cases were included and analysed in this research.

In the Netherlands three parties are involved in the investigation of PIED dealing networks: (1) the police and Public Prosecution Service, (2) the *Economische Controle Dienst van de Fiscale Inlichtingen- en Opsporingsdienst* (FIOD-ECD) (Economic Surveillance Department of the Inland Revenue Intelligence and Investigations Department), and (3) the *Inspectie voor de Gezondheidzorg* (IGZ) (Health Care Inspectorate). The police become involved where it concerns the illegal production and distribution of PIEDs; cases are directed to the FIOD-ECD where it concerns fraudulent medication (e.g. counterfeit AAS medicine); and the IGZ undertakes action where it concerns matters of public health (e.g. production of non-licensed medicine). However, due to the low priority given to PIED dealing in the Netherlands it was quite difficult to retrieve PIED-related cases, in particular from the police and Public Prosecution Service. Snippe et al. (2005) reported similar problems during their research. In particular, the authors had difficulties finding records of the PIED trade in the registration of the police and the Public Prosecution Service, which led to issues in retrieving cases stemming from these parties. Similarly, it became clear to me after contacting several police officers, and being sent from one to the other, that trying to gain access to police files would be near impossible, simply because nobody knew who had been involved in these cases. Nonetheless, despite these limitations, most Dutch cases have been accounted for due to the generous assistance of the two other investigative services (IGZ and FIOD-ECD), who often advised on, and worked together with the police on PIED cases. Additionally, the FIOD-ECD and IGZ granted me access to their own PIED-related cases. Finally, media articles related to PIED dealing were collected and examined in order to obtain a more complete view of these investigations.

In Belgium, the Hormonencel is the central unit which handles all issues concerning PIEDs. Prior to 2003 there were very few Belgian investigations, as no law enforcement unit was responsible for handling human PIED violations. However, as of 2003 the Hormonencel, the Belgian investigative service concerning PIEDs, started to include human PIED violations in their task description, which resulted in a rise of these criminal cases. This agency focuses on the following four illegal PIED use and dealing activities: (1) the illegal use and trade of growth stimulators in livestock, (2) the trade of hormones for animals, (3) the dealing in PIEDs for human use, and (4) non-licensed medicine[26]. The Hormonencel collaborates closely with other investigative services (e.g. police and the customs service) and institutions concerned with PIEDs (e.g. NADOs and FAVV[27]) to optimize the efficiency of the agency. While

[26] The 'non-licensed medicine' is a broad term that covers a range of criminal activities such as counterfeit medicine and the import of raw material of medicines.

[27] The *Federaal Agentschap voor de Veiligheid van de Voedselketen* (FAVV) (Federal Agency for the Safety of the Food Chain).

the Hormonencel began investigating human PIED violations in 2003 (19 violations), it was not until 2006 (126 violations) that PIEDs really began to receive heightened attention (Hormonencel, 2006). The lower number of cases in the early years may be explained in part due to start-up problems (e.g. setting up cooperation with different partners) and new developments (e.g. intensifying of doping controls in gyms).

As there were many more Belgian PIED-related cases (N=1641, 2003-2012) than in the Netherlands (N=65, 2003-2012), it was not possible to review all of the investigations. The main barrier was that individual permission from the police corps involved in the particular case was needed to gain access to each and every case. Aside from the reality that this would have taken a considerable amount of time, the fact that PIED dealing has relativity little priority amongst police units was also an issue. These files contained varied amounts of information regarding the case, largely dependent on the amount of time particular police departments had been willing to spend on them. The Hormonencel provided me with an overview of all human PIED violations, including a summary of each case, and additionally advised me on these investigations. Based on this information a body of cases were purposively sampled. However, it is important to be aware of the fact that these criminal justice cases do largely reflect the priorities and efforts of law enforcement agencies. I did not only select cases that the Hormonencel provided, but I also intentionally picked 'negative' or unique cases to obtain a fuller picture of the illicit PIED market. Overall, I chose an assortment of cases that had the most additional value for our understanding of PIED markets (e.g. cases that contained detailed information or consisted of large dealing networks), and would best reflect the diversity of the PIED market. Further to these cases, information was retrieved from the annual reports of the Hormonencel as they contained detailed information on investigations concerning human PIED violations of that particular year. For this research I selected 40 PIED-related cases from the Hormonencel, but due to either not being granted access (3 cases) or receiving no response from the police (6 cases), permission was eventually granted for a total of 31 cases. I was denied access in three cases because the investigations were still ongoing.

Finally, I reviewed other secondary sources for additional information on the Belgian and Dutch PIED market: government reports, seizure statistics (e.g. confiscation statistics) and media articles. While this sounds quite 'ambitious', it was relatively manageable to collect most of these documents, where they exist. PIEDs have little priority on the political agenda in both countries, and the media shows little interest in this matter except when it concerns elite sport. In order to search for government reports and media articles several search engines such as

Google.nl, Google.be, and Lexis Nexis[28] were used, and several governmental websites[29] were visited to specifically find policy documents related to the subject. The search was performed in English, French and Dutch, and keywords such as "anti-doping policy", "doping trafficking" and "steroid use fitness[30]" were used in order to find documents that were related to PIED policy and/or the production, supply and use of these substances. Moreover, both Dutch and Belgian investigative services and other officials (e.g. NADOs) were quite helpful throughout the research, often sending me new government reports and media articles regarding PIEDs as they were released.

The seizure statistics pertaining to PIEDs are not available online and were likewise provided by the investigative units included in this research. However, several issues occurred when trying to collect the seizure statistics from Belgium and the Netherlands. First of all, the Hormonencel keeps track of all confiscations of the multiple law enforcement agencies, while in the Netherlands the data is not systematically recorded by a central agency[31]. Subsequently, collecting the Dutch data was rather challenging due to registration issues and the low priority PIEDs have in the Netherlands in general. The only agency that was able to provide a clear overview was the customs service. Despite these issues, most confiscation data was retrieved thanks to the combined help of the customs service, the IGZ and the FIOD. Nevertheless, once the data was retrieved, a second problem arose concerning how the seized final products of PIEDs were registered. In both countries, law enforcement personnel and other authorities measure seized PIEDs in the same manner as other illegal drugs: by weighing these products and/or the total shipping packages. However, to quantify the amount of seized PIEDs (final products) it is important to register the total amount of the substance that the ampoules, vials or tablets hold. For example, one vial may contain ten millilitres while one ampoule may hold one millilitre. Nevertheless, in the current system both are counted as 'one' instead of adding the total amount of the substance within each. In order to correct for the registration issues as much as possible the confiscated items were converted into comparable sizes. For instance, one vial of ten millilitres was counted as ten ampoules of one millilitre and one bottle was counted as one hundred tablets[32].

[28] Lexis Nexis has one of the largest archives of newspapers articles in the world, and it has a powerful and flexible search engine that allows individuals to get just about any news article they want to see. For more information see lexisnexis.com.

[29] Examples of governmental websites are senate.be and rijksoverheid.nl.

[30] The term "fitness" was used, as the consumption of PIEDs outside of elite sport is often highly associated with "fitness doping" and not with other using populations. For example, in policy documents politicians and other officials specifically refer to bodybuilders or fitness trainers when discussing this issue and do not, for example, talk about "non-medical users" when referring to the use of PIEDs by the general population.

[31] The Dutch data had to be gathered separately from all the agencies involved: the FIOD, IGZ, police and customs service.

[32] One bottle of AAS in general contains hundred tablets.

Another issue was that the Dutch customs service only began to consistently keep track of the seized products in 2011. Since that time the customs service started to sample more PIEDs compared to previous years, ultimately, leading to larger confiscations. A final problem pertained to the type of substances that are recorded as PIEDs by Belgian and Dutch investigation units. Aside from AAS, it is rather unclear what both investigative units consider "PIEDs". Therefore, in order to be able to compare the statistics of both countries with some measure of clarity the following final products were included: AAS (raw materials and final products), growth hormones, Beta-2 agonists (e.g. Clenbuterol), post-cycle[33] substances (e.g. Nolvadex), and other image enhancing related drugs (e.g. Melanotan II). Certain illegal drugs such as marijuana and cocaine, which technically are also considered doping substances according to the World Anti-Doping Code (WADC), were excluded. Non-medical PIED users in general do not use these illegal substances to enhance their performance and/or appearance, but rather often for recreational purposes (e.g. 'party drugs'). Aside from the finished products, law enforcement units are increasingly confiscating the raw materials of AAS. Dealers purchase these raw steroid powders, for instance, from China, and turn these raw materials into finished products. As such, the statistics of confiscated AAS powders were included in the analysis as well.

4.4 Ethnographic field research

While criminal case files are a valuable way to gain insight into the structure and the general attributes of PIED dealing networks, they fail to grasp the social and cultural characteristics of suppliers and the environments in which they operate. The value of rich ethnographic data is that it helps to understand certain social phenomenon, and is particular useful when examining 'deviant' cultures and activities that are clandestine or illegal. Moreover, understanding the operations of a local illicit market, may assist in designing and evaluating interventions, interdiction and other law enforcement efforts (Ritter, 2006). Therefore, ethnographic field research at several bodybuilding sites was included to obtain an in-depth understanding of the inner workings of PIED dealing networks in Belgium and the Netherlands.

Specifically, Dutch and Belgian bodybuilding (recreational and competition) were adopted as case studies as the use of PIEDs, in particular AAS, is highly present in this subculture (Monaghan, 2001, 2013; Perry et al., 2005; Paoli & Donati, 2014). As the use of PIEDs is so common amongst bodybuilding groups, these networks provide an interesting environment in which to study

[33] A cycle refers to a user taking multiple doses of PIEDs over a specific period of time. A post-cycle is the period after a cycle in which a user takes substances to make sure he/she recovers properly.

the use and supply of these substances. Indeed, the PIEDs being consumed have to be purchased from somewhere. Outside of these high-risk groups, the general prevalence of PIED use seems to be relatively low in Belgium and the Netherlands (see chapter 2). Therefore, it could be argued that when studying the inner-dynamics of PIED dealing networks, one should explore groups where PIED use has a higher prevalence, as the supply will most likely also be more prevalent. Finally, bodybuilding has been adopted as a case study as Belgian and Dutch bodybuilding is highly intertwined. Belgian bodybuilders often compete in the Netherlands as the amount of Belgian bodybuilding competitions have decreased over the years, in part due to the doping tests that are enforced at competitions and gyms. For these reasons, bodybuilding forms the ideal case study to explore how PIED dealing networks form and develop within and between the Netherlands and Belgium.

Bodybuilding differentiates itself from weight-training sports (e.g. power-lifting, Olympic Weightlifting), as its goal is not to enhance performance (lifting a maximum weight) but to improve physical appearance (Monaghan, 2001). Much discussion concerns whether competitive bodybuilding is an "elite sport[34]", a "recreational sport[35]", or even a sport at all. In this research bodybuilding will not be regarded as a sport, but as a form of 'recreational training'. For something to be defined as a sport it must contain the following three aspects, (1) a competition element, (2) athletic or physical skills, and (3) an entertainment value (Blewett, 2014, July 8). Although 'skilful' physical training is required to build muscles and to win competitions, bodybuilders are not judged on their muscle-building skills, but only on the physical appearance and presentation of their muscles (aspect 2). Recreational trainers include people who participate in recreational sport and/or fitness activities for personal health and pleasure, and/or to participate, finish or establish a personal best (e.g. entering a bodybuilding competition). It is important to differentiate between recreational trainers and elite athletes, as the former, including bodybuilders, often have different motivations to use PIEDs than elite athletes. Recreational trainers are more motivated to use PIEDs to enhance their physical appearance as opposed to their athletic performance (see chapter 2). The focus of this study is on recreational users and not on users within elite sport.

The fieldwork was spread over a time-period of three years: from 2010 to 2011 and throughout 2012-2014. In total, I spent around two years in the field. My fieldwork began during my masters in criminology (the first time-period) during which I studied the dealing of PIEDs in Dutch bodybuilding subcultures. After being accepted for my Ph.D. I continued my fieldwork, building on my

[34] Elite sport includes "athletes who take part in national or international competitions, often as a member of a team, but in some instances individually (e.g., professional tennis players). Elite athletes also include professional athletes, that is, those who receive regular remuneration for their participation in elite sporting activities" (Paoli & Donati, 2014: 17).

[35] Recreational sport includes athletes "who compete only sub-nationally" (Paoli & Donati, 2014: 17).

existing contacts and expanding my fieldwork contacts to Belgium (the second time-period). During my first research I worked at a Dutch supplement shop which has various locations in the Netherlands, trained at and visited several (hard-core) gyms, and attended Dutch bodybuilding competitions. During the second part of my research I halted my work at the supplement shop, but continued to be present at these other arenas, and expanded my fieldwork to Belgium. Some other places or activities I attended were: going to a posing workshop, visiting other Belgian/Dutch supplement shops/gyms, and doing voluntary work at a Belgian bodybuilding competition in which I was in charge of overseeing the doping controls. Most of my fieldwork in the Netherlands took place in and around Rotterdam, Utrecht and Maastricht, and in Belgium I predominately visited places in and around Brussels and Antwerp.

Initially, I undertook participant observation within and around various 'real' (e.g. bodybuilding competition) and virtual (e.g. bodybuilding forum) bodybuilding settings in Belgium and the Netherlands. However, in Belgium these settings were restricted to Dutch speaking parts (Flanders) due to my inability to speak French. Consequently, during my fieldwork I predominately interacted with Flemish bodybuilders and not with bodybuilders from the other Belgian communities. This is not to say that I ignored non-Flemish bodybuilders but that I did not actively engage with this group due to my own linguistic limitations. It is important to note that my other methods did include the whole of Belgium (e.g. criminal justice cases were collected from all communities) and did not focus only on the Flemish part. During my fieldwork, I interacted with bodybuilders who were directly or indirectly involved with the PIED market in the Netherlands and Belgium. I met, and established long term personal relations with central figures from the bodybuilding community in Flemish Belgium and the Netherlands, both involved and uninvolved in PIED dealing. I managed to develop a personal network of approximately 70 individuals (30 Flemish and 40 Dutch bodybuilders), who became key informants, casual contacts/acquaintances or mediators (see appendix I for more detail). The goal was not to re-construct particular life stories of certain individuals but to gain insight into how the dealing of PIEDs is perceived in bodybuilding subcultures, the structure and organization of these dealing networks, and to understand the socio-cultural relations of suppliers in these communities.

The most difficult part of this research was gaining access to active PIED dealers who were willing to speak with me and to allow me to interview them. Although less law enforcement priority is given to PIED dealing compared to, for example, the trafficking of cocaine, it is still is a serious criminal offence that may result in high penalties (e.g. prison). Like drug dealers (e.g. see Adler & Adler, 1987; Zaitch, 2002), most PIED suppliers distrust anyone outside of their dealing community and often will not provide insight into their activities and criminal enterprises with a stranger. Indeed, the most fundamental components of conducting successful fieldwork are gaining access and establishing rapport with

individuals and groups (Mazzei & O'Brien, 2009). To gain trust, I initially engaged with users and other key figures in bodybuilding in order to move 'upwards' to reach PIED producers and dealers. Similar to Zaitch's (2002: 8) study on the cocaine trade in the Netherlands, I tried to 'move around' through various settings, talking to as many different people as I could. I did not focus on any particular group, place, or type of dealer, but I tried to cover the whole spectrum of bodybuilders involved in the PIED market in Belgium and the Netherlands. While this sounds like a large endeavour, these communities are rather small in their respective countries. With some of these individuals I was able to conduct semi-open interviews, but in general I held informal talks, from short to very in-depth, as most did not feel comfortable enough to conduct an official tape-recorded interview. These observations were recorded in the form of fieldwork notes. As explained before, these participants were informed about my research and consent was asked to use this data for my research. At all times participants were allowed to retract or amend statements if they were not happy about something they said. While participants tend to 'forget' that you are observing them, I sometimes purposely, openly took notes to remind them that I was conducting research.

Reflexivity is an essential aspect of all social research, however, it is particularly important when engaging in ethnographic practises (Hammersley & Atkinson, 2003). Being reflexive implies that researchers understand that they are part of the social world(s) they are studying, and that they are aware of their effect on the process and outcomes of their research. It implies a shift in the way we understand data and its collection, and, therefore, as Berg (2007: 179) notes, we need to repeatedly examine "what the researcher knows" and "how the researcher came to know this". Ideally, ethnographic researchers provide insights into the workings of the world and on how that knowledge came to be (Berg, 2007). This is in particular relevant for chapter 6 where I discuss the private market of PIEDs in relation to bodybuilding in more detail.

While my research in essence does not differ from other ethnographic work, in the sense of getting access, building rapport, etc., these issues do become more difficult when studying deviant behaviour (PIED use) or illegal activities (PIED dealing). A particular question that arises when studying PIED users and dealers is whether or not participants are telling the truth. Indeed, whenever we interview or talk to research participants we can never be completely sure if what they are telling us is really the 'truth'. This does not necessarily have to be a lie but can be a socially desirable response, or even just a 'different side of us'. As Ervin Goffman (1959) illustrates in his book "The Presentation of Self in Everyday Life", in everyday interaction with people we try to leave an impression behind, one that can be different for every person we interact with. These 'different presentations' not only vary depending on the person someone meets, or the situation someone is in, but may also differ over time with the same person, for example, when someone starts to feel more

comfortable with another person. In my research, for instance, many bodybuilders would initially say that they did not use steroids, when in reality they did. Although I suspected and sometimes even knew that they were using, it was not until later on in my fieldwork that these bodybuilders accepted and trusted me, and informed me about their consumption and/or dealing activities. For example, Coen, a recreational bodybuilder, initially told me that he did not use, let alone supplied, steroids. As I got to know Coen, he informed me that he did use steroids and even later on in my fieldwork he told me that he sometimes arranged steroids for others as well. When I asked Coen why he initially told me otherwise, he informed me that he was afraid that I would identify him as the "typical steroid moron" (his words), and because he was unsure of what my exact intentions were. Aside from protecting himself, Coen wanted me to see him first of all as a personal coach or a recreational trainer, and did not want his steroid use to define him as an individual. For him using steroids was just part of his training process. Although Coen was not telling the 'truth', as Sandberg (2010: 448) argues,

> *"The "truth" is not always important. Whether true or false, the multitude of stories people tell reflect, and help us understand, the complex nature of values, identities, cultures, and communities. Thus, "truth" may not be the best measure of interesting and theoretically relevant data."*

In a sense it did not matter what kind of story Coen told, and whether it was true or not. Indeed, all these different 'presentations' and 'impressions' tell us something important about that person. Coen's story reveals something important about the values, norms and identities users and dealers hold within the wider PIED market. Most of these bodybuilders admitted during my fieldwork that they initially did not feel comfortable talking about their motivations for using PIEDs. They felt that 'outsiders' usually do not understand or appreciate the bodybuilding subculture and the role PIEDs have within it. The stories or 'narratives' individuals tell about their PIED using and/or dealing experience are interesting in and of themselves, regardless of whether we would subjectively say they are 'truthful'. However, it is important to acknowledge that these are narratives, and that other narratives may be employed by other PIED users and dealers to describe the same behaviour. Therefore, as opposed to always seeking the 'truth' it is important to appreciate the multiple stories present in the social context (Sandberg, 2010).

However, this does not mean that I am not interested in accurate facts. In particular it is important for policy decisions to be based on information that is as close to the truth as we can come. Indeed, if Coen had not told me that he was using or supplying steroids, I would have been missing valuable information concerning the illicit PIED market. Therefore, I often asked about others when

possible (cross-checking) and contrasted stories with information retrieved from media sources, authorities and criminal justice cases. For example, in chapter 6, Chris, a Belgian ex-dealer, talks about his motives for dealing PIEDs. He mentions that when he used to deal PIEDs he was less interested in making profit and instead was involved in this trade to guarantee the quality of steroids and other PIEDs to protect the health of his athletes and other customers. In order to verify whether or not this was simply a socially desirable response I spoke to several of his athletes and other customers who confirmed that he indeed was very passionate, used to sell PIEDs for a low or cost price, recommended safe practices (e.g., the need for medical check-up), and eventually stopped selling PIEDs. Moreover, several authorities acknowledged the existence of these types of 'bodybuilding dealers' and mentioned similar characteristics when describing these PIED dealers and when comparing them to other suppliers not connected to the bodybuilding market. Finally, to check the accuracy of my results I cross-checked the data with findings from previous studies focussed on the production and supply of PIEDs and other drugs. For example, regarding the importance of socio-cultural factors in PIED dealing networks, in particular related to weight-lifting subcultures, similar results are found in the work of Maycock and Howat (2005), Kraska et al. (2010) and Coomber et al. (2015). Therefore, as it is impossible for researchers to know with 100% accuracy that what they have got is the 'truth', it is essential to take sensible measures to ensure that you have uncovered the most truthful information possible. I did this by employing several strategies such as verifying information with several sources and against official records, and by comparing the results with previous studies in the drug field.

Furthermore, aside from suggesting that he initially was not completely honest, Coen's story also once again illustrates the issue of obtaining 'trust'. Flemish bodybuilders in particular were not especially 'open' in the beginning about their consumption and were even less willing to discuss their source. Belgian bodybuilders may face consequences for using PIEDs both at competition and during their training sessions at a gym, as both may be subjected to doping controls. Consequently, Flemish bodybuilders were even more reserved in sharing sensitive information than Dutch bodybuilders. An important aspect of 'earning' the trust of bodybuilders is to have knowledge and experience concerning weight training, nutrition, supplements and other aspects related to bodybuilding. When this expertise is lacking, bodybuilders are less likely to accept you or to share information with you (Monaghan, 2001). To overcome this issue I undertook a more 'active membership' (Adler & Adler, 1987) by participating in the bodybuilding subculture (e.g. work at/visit supplement shops, attend bodybuilding competitions). The goal of active membership is that the researcher moves away from the marginally involved role of the traditional participant observer and assumes a more central position in the setting (Misener & Doherty, 2009: 127). For example, during the first

period of my fieldwork I worked in a supplement shop that was well known amongst bodybuilders. The owner of the shop was a bodybuilder himself, who competed, and who coached and sponsored other bodybuilders in their preparation for competition. This active role was ideal as it taught me the ropes of bodybuilding, increased my knowledge on nutrition, training and PIEDs and helped in initially overcoming trust barriers amongst Dutch bodybuilders.

Nonetheless, I agree with Monaghan's (2014: 97) approach that researchers do not have to go 'native' in order to learn about the culture, and that it is often sufficient to adopt a field role that *meshes* with one's contacts. In particular, in the second half of my research it was impossible to devote my 'complete' life to bodybuilding due to administrative and teaching requirements associated with the Doctoral program I was involved in. However, it was less of a necessity to engulf myself in bodybuilding the way I did so in the first year of my research. As I had already established gatekeepers and prior experience in the bodybuilding subculture, it was easier to gain access and establish trust in the second half of my research. Flemish bodybuilders were rapidly acquainted with me (e.g. by word of mouth and the sharing of similar contacts) and were more accepting of my role as a researcher. Nevertheless, it took much time before users and other key figures in bodybuilding shared information about where or from whom PIEDs were obtained, and it took even longer before introductions were made to dealers.

Another important aspect that may influence access and rapport in a fieldwork setting is gender, which is particularly apparent when a female researcher enters a male-dominated environment such as bodybuilding. For instance, while Monaghan (2001) did not emphasize his gender role during his research, he did point out that his male gender facilitated access in the male-dominated sphere of bodybuilding. West and Zimmerman (1987) coined the term "doing gender", which suggests that the behaviour of men and women is socially constructed through power, sexuality, and role expectations. The gendered nature of settings can expose how structures shape the behaviour of men and women in which their own reactions and the responses to them are conditioned by gender role expectations (Miller & Bonistall, 2012: 316). These gender role expectations can exclude women from becoming fully accepted or respected in such settings (Miller & Bonistall, 2012). During my fieldwork I sometimes noticed that bodybuilders tried to attempt to control the conversation or communicated with me in a belittling manner. For example, one participant put me in charge of his son while he was enjoying a competition. While this may have meant that I was part of the inner-circle, as he entrusted me with his child, it also could be that he took me less seriously as a researcher, by assigning me a traditional female role. Consequently, he may have been less inclined to provide me with information regarding the PIED market, and his role in it.

To overcome gender issues and to gain access and build rapport, a certain "fieldwork body" (Coffey, 1999) may help promote trust and reciprocity. Creating a fieldwork body is part of creating a fieldwork identity. In particular when it comes to 'physical cultures' such as bodybuilding, one's physical appearance can be an essential issue when gaining access and acceptance (Monaghan, 2001, 2002). As Monaghan (2014) explains, his appearance, which had visible bodily effects in terms of physical size, shape, weight and composition, provided him with a form of capital that was useful during his research in the bodybuilding subculture. Indeed, my physical shape and overall fitness level as a result of my training history helped me in getting accepted, and overcoming gender issues, within bodybuilding. Before my fieldwork, I trained regularly and followed a strict diet. Subsequently, I was relatively lean and somewhat muscular prior to entering the bodybuilding world. Bodybuilders often asked me if I was competing for a competition, thereby, giving off the idea that I was seen as someone who took bodybuilding or fitness training seriously.

Finally, another important issue to reflect on is the use of social media during my fieldwork. Social media and services such as Facebook or Twitter have become part of the fabric of everyday life. Social technologies are transforming communities, companies and even countries in many ways. Due to the Internet and social media, people can easily find out who you are and what you do, and this has impacted the way in which we share and connect as individuals and communities. Therefore, it is no surprise that the Internet and social media are frequently used by PIED users and dealers to communicate: both in the sense of sharing information on PIEDs and in selling these substances. Murthy (2009) mentions that social networking websites may be used to obtain potential respondents by utilizing these websites as "virtual gatekeepers". Indeed, interacting through social network websites is a powerful device to gain access and build rapport in the bodybuilding community. In particular, Facebook was used during this research as a tool to gain access to the bodybuilding communities. Facebook and other forms of social media allowed respondents to see my working credentials, my genuine interest in sport (e.g. the "liking of" certain sport pages) and, more importantly, the sharing of "mutual contacts". I considered creating an alternative Facebook account, but eventually decided not to as I already had a great interest in fitness and bodybuilding prior to my research. I also had some "fitness and bodybuilding friends" and "followed" certain pages related to this topic. Therefore, it was not unusual for me to widen my social network in this area, and, importantly, being open helped with building trust and decreasing paranoia, particularly amongst dealers.

The fact that bodybuilders and other recreational trainers could see parts of my social life helped confirm my identity as a researcher and 'fitness trainer' and reduced, for example, the fear that I was a police officer or a journalist. Certain precautions were taken to protect the privacy of the research participants, the researcher, and my social network outside of my research. For

example, no authorities were added to my Facebook account because this, for obvious reasons, would be conflicting. Moreover, certain private information regarding my family and friends was blocked from other contacts view, and vice versa. Furthermore, everything (e.g. comments and pictures) that was posted on my personal pages needed to be first approved by me before it was visible to others. In addition, in case authorities were tracking Facebook or other social networking websites, no illegal activities were discussed through these sites. Although these precautions were taken, it would be very difficult for non-research participants to find out who my specific contacts were as my bodybuilding network was quite large. For instance, I also included people that were not part of my research, but heard of through other bodybuilders, or who I had just briefly spoken to during my fieldwork. Moreover, not all of my contacts were added to my Facebook account. Finally, in order to protect the privacy of my participants and others, this Facebook account will be deleted after this Doctoral research is submitted and accepted.

In sum, while ethnography is not without its criticism (for overview of this discussion see for example Hammersley, 1992), from issues of going native to the validity of the data derived from observations and the scientific rigour of the method, participant observation is about engaging in a social field, experiencing it and seeking to understand and explain it. By listening and experiencing, impressions are formed, and theories are considered, reflected upon, developed, tested and modified (May, 2011). Through the addition of ethnography I was able to reflect on what I had learned and experienced during my two years in the field and use this as a cross-references to the data derived from the other methods and vice versa.

4.5 Conducting semi-structured interviews

In this research both authorities and those directly or indirectly involved in the PIED market were approached for interviews. The main reason to include both parties was to reveal the complex and contested dynamic between cultures of control (e.g. police and anti-doping officials) and cultures of deviance (e.g. PIED users and dealers) (Ferrell, Hayward & Young, 2008: 4). In total 47 interviews were conducted throughout the course of this research (see table 4 and appendix I for more detail).

Most of the interviews with officials involved the people assigned to the selected cases (e.g. police officer, Health Inspector) as a means to obtain extra information about the files. Additionally, other stakeholders (e.g. physicians, anti-doping officials) were interviewed, and informally spoken to, in order to gain a better understanding of anti-doping regulations, PIED policy and their relation to the illicit market of PIEDs. In total 32 interviews (8 females/24 males) were held with Dutch (N=19) and Belgian (N=13) state authorities and other stakeholders (e.g. anti-doping officials). The reason that the number of

interviews in Belgium is lower compared to Netherlands is that I reached the point of data saturation relatively quickly when interviewing Belgian officials: in particular when it came to police officers. One reason for this is that the interviews with Dutch authorities were conducted prior to the interviews with the Belgian officials, and much information regarding the Belgian market was quite similar to the Dutch market. Subsequently, formal interviews with Belgian officials came to a conclusion relatively early on and instead I continued to informally communicate with these individuals to check if the information was consistent and to make sure no new information had come up. I spoke to approximately an additional seven Belgian officials outside of the official interviews.

The other interviewees consisted of individuals who were directly or indirectly involved in the illegal PIED market. While it was difficult to find people willing to participate in a recorded interview (see previous section), in total 15 interviews (all male) were conducted with Dutch (N=11) and Belgian (N=4) dealers. The majority of interviews were conducted with male Dutch suppliers. The fact that all respondents were male reflects the gender findings of previous studies (e.g. see Evans-Brown & McVeigh, 2009; Kimergård, 2014b; Paoli & Donati, 2014). Moreover, a reason why I had difficulties finding Belgian suppliers was because Belgian users often obtained their substances from a Dutch source. Both issues, the ratio of Dutch/Belgian dealers and the gender division, are a reflection of the characteristics of the Dutch and Belgian illicit market for PIEDs. These characteristics will be unpacked in more detail in the proceeding chapters.

Table 4

An overview of the total amount of people interviewed in the Netherlands and Belgium

Who?	The Netherlands	Belgium	Total
Authorities	19	13	32
Dealers	11	4	15
Total	**30**	**17**	**47**

Contact with suppliers was made in several ways (e.g. through fieldwork relations and AAS-selling websites) in an effort to obtain as many interviews as possible. While interviews were collected through various sources, most of my participants were recruited through bodybuilding communities. While these findings may not be extrapolated to explain the characteristics and motivations behind all PIED dealing networks, some general inferences from my data may be drawn with respect to anti-doping claims, and the empirical realities of the illicit market for PIEDs. The intention here is not to present the interviews with dealers as reflective of the entire PIED market, but to use the data derived to supplement other methods and to interrogate existing literature on illicit PIED markets and drug dealing research in general.

While the inclusion of both parties revealed the complex dynamics between the two groups, the inclusion of authorities exacerbated the risk of being perceived as a "cop" or a "spy" (Jacobs, 2006), which may result in less access to the fieldwork setting. Ethical considerations aside, the illegal nature of PIED production and supply, and the general levels of paranoia, made it difficult to adopt a covert role or to obscure my engagement with authorities. As such, the choice was made from the beginning to be open to all parties about the inclusion of different groups. Nevertheless, due to my prior research a strong personal rapport was already established with several gatekeepers who were aware of the intentions of my research, and of the inclusion of authorities. Alternatively, not being open about my involvement with authorities, and dealers later finding out, could actually be more dangerous for the researcher (a.o. Sluka, 1990; Williams et al. 1992; Lee, 1995). In order to guarantee the safety of all parties, certain information was made anonymous (e.g. names, particular places and events) to avoid recognition. However, it was not only authorities who were curious about my other participants, but PIED suppliers were likewise interested in information regarding investigation services. For instance, they were interested in knowing if they currently were being investigated. No information was shared with any of the participants involved in this research.

The word "dealer" in table 4 is used to make a clear division between the two interviewed groups. In this table it refers to all different types of suppliers involved in the PIED market: from lower (e.g. retailers) to upper-level suppliers (e.g. wholesalers). However, in the findings chapters these individuals, including those spoken to informally during my fieldwork, are classified in a similar fashion as Sandberg (2012a: 1137-1138) who conducted research on the cannabis market. The following distinction is made: (1) producers: people who manufacture their own AAS and other PIEDs, (2) exporters: people who gather the goods from producers and sell them across national borders, (3) smugglers: people who move PIEDs over the border, (4) importers: people who receive the consignment in the recipient country, (5) distributors: people who sell large quantities and make substantial amounts of money, (6) dealers: people who regularly sell medium and small quantities to users, and make some money, and (7) helpers: people who sell small quantities to friends; they do not usually regard themselves as dealers, but as 'helpers', and they do not make much money. The majority of the participants came from the sixth or seventh group, but some individuals from the other groups, including producers and distributors, were spoken to as well. However, while the separation of these different types of dealers appears fixed, this taxonomy lacks an understanding of the fluid nature of the PIED market. For instance, some PIED dealers control the entire distribution chain themselves: from producing their own PIEDs, sold both at home and abroad, in large quantities over the Internet, to producing PIEDs which are sold or 'gifted' in smaller quantities within their own communities, of which they are often themselves active participants. These individuals could

simultaneously fit in several of the categories mentioned above. Throughout this research the lines between the different types of dealers, and the capacities in which they traffic, was often blurred.

In this research, qualitative in-depth semi-structured interviews were employed. This type of interview involves the implementation of pre-determined topics and special categories, however, the interviewer has the flexibility to digress from the questions and probe beyond the answers given by the participants (Berg, 2007). As the positions held by individuals varied vastly in the capacity with which they interact within the PIED using community (e.g. police officer or bodybuilder), utilizing semi-structured interviews allowed me to assume that the participants would not find equal meaning in similarly worded questions, and that the participants may possess very different vocabularies based on their roles within PIED networks. The interviews were guided around topical themes, which were also used as a guiding tool for the analysis of the PIED case files. The four main themes of exploration were: (1) characteristics, (2) interrelations, (3) national networks, and (4) internationals networks. Examples of sub-themes related to the main themes were "exit/entry", "motives", "policies/legislation" and "Internet". For instance, the sub-theme "policy/legislation" could be discussed in both the third, "national networks" (e.g. "Do you think the Netherlands/Belgium does enough to target this illicit market?"), and fourth, "international networks" (e.g. "How is the international cooperation concerning PIED dealing investigations?"), main theme. The main themes and sub-themes were used to formulate a list of questions that helped guide the interviews. Some of these sub-themes were related to several main themes.

The advantage of this approach was that it granted me the freedom to adapt to individual participants and focus on the central purpose of the investigation, without adhering to a stringent list of pre-determined questions. Schwartz and Jacob (1979) suggest that this will result in the most appropriate questions arising from the interactions during the interview itself. Semi-structured interviews allow participants to talk about the subject within their own frame of reference providing a greater understanding of the participants' point of view. Taking the sub-theme "policies/legislation" as an example again, the question directed towards a state official was related more to the effectiveness of PIED policy in disrupting the PIED market (e.g. "What investigative tools do you have to target PIED producers and/or suppliers?"); while the question for dealers was connected more to the effect of policy on their dealing practises (e.g. "Have investigative services ever disrupted your dealing activities?").

The interviews lasted 1-2.5 hours and consisted of face-to-face, telephone and/or electronic interviews. Importantly, most participants were also spoken to outside of formal interviews. For example, I spent several weeks at the Hormonencel and spoke to Vera and Joop, two Belgian authorities, on several

occasions about the Belgian PIED market outside of the official interview. The same applies for the dealers I interviewed. For example, on top of the interview, I spoke to Chris on the phone and had electronic contact regarding the use and supply of PIEDs on several occasions. Almost all interviews were tape-recorded and later transcribed. Three dealers preferred not to have their interviews recorded and instead notes were taken during the interview. After the interview, I went back over my notes and transcribed or 'cleaned up' my notes to make sure that everything was properly documented. At the start of the interview participants were asked if they understood the informed consent form and if they agreed to proceed with the interview. The telephone interviews took place at home in a private space. The face-to-face interviews took place in offices or other places (e.g. gyms) suitable for interviews and in conditions safe for both the interviewer and participants.

4.6 The analysis of AAS-selling websites

The Internet is one of the primary means to find information on and access to PIEDs (Wassink, Coumans, & de Hon, 2010; Cordaro, Lombardo & Cosentino, 2011). Indeed, the Internet has redefined the relationships between those who warn about the hazards of drugs, those who advocate or sell drugs, and those who take them (Brennan et al., 2013). These online sources, such as online 'pharmacies', bodybuilding forums and AAS-selling websites, are increasingly replacing the "local (gym) vendors" by offering a range of PIEDs at affordable prices on the net (Wassink et al., 2010). Moreover, this online market threatens the continued existence of the current system of global, national and local drug prohibition (Walsh & Phil, 2011). As such, it is important to systematically observe and analyse the role of the Internet and its effect on the illicit market for PIEDs. Specifically, websites were analysed that sold AAS and focused on the Dutch or Belgian market. These websites are referred to as "AAS-" or "steroid-selling" as the main product that is being sold is steroids. However, this is not the only substance that is being sold, as these websites often sell a range of different substances, such as weight-loss drugs (e.g., ephedrine) and sexual enhancers (e.g., Viagra), that are often used in combination with steroids. Furthermore, the 'dark web' was excluded from this analysis, as this network did not seem to be frequented by users and suppliers. This was confirmed by both authorities and dealers, and became clear after conducting a quick search on the dark web. However, given the speed with which changes are implemented on the dark web, it could be that this may have changed even in the short time since I have conducted my research. In chapter 8 the role of the dark web will be discussed in more detail.

The website search was performed by use of a personal computer connected to Internet, from March 1, 2014, to September 1, 2015. For the analysis, I chose the web browser Google Chrome and the search engine Google

to access the content of a selected number of steroid-selling websites. The advantage of specifically using Google Chrome is that it automatically translates foreign websites into Dutch (or any other language depending on your settings). The translation option made it possible for me to include and analyse French-based websites as well. These websites were included as Belgium has a large French-speaking community (see chapter 2), making it more likely that these buyers may turn to French language websites instead of Dutch. While these automatic translations were not always 100% accurate, they were sufficient enough to capture the basic idea or essence of the websites. The websites predominantly consisted of simple and short pieces of information regarding PIEDs (e.g., positive/negative effects of steroids) or their service (e.g., shipping and payments). A number of search terms were submitted in Dutch (both Google BE and NL) and French (only Google BE), and the keywords used would translate as "anabolic steroids buy" and "steroids for sale". The reason I specifically searched for AAS is that they are the most commonly used PIED by non-medical users in the Netherlands and Belgium.

As Wassink et al. (2010) point out due to the enormous number of websites it is nearly impossible to obtain a complete view of the Internet trade of PIEDs. For example, the words "steroids for sale" on Google NL provided 47,500 results and on Google BE it gave 47,600 hits. In this research the website analysis acted as a means to obtain background information, for example, more insight into their accessibility, what kind of products were offered, the different payment options, what kind of advice and information was given – not only on PIEDs but, for example, on how to prevent or minimise risks and training advice -, and what kind of language was used (a positive, neutral or negative tone). In addition, this information also helped when interviewing or talking to authorities, dealers and users. For this reason it was decided to keep the website analysis small including only ten websites.

I identified the first five websites that offered steroids in the first three pages of results. For a website to be selected at least four steroid-containing products were identified, and it had to be clear that the products could be purchased through the website. Based on the search results a selection was made of eight Dutch and Belgian steroid-selling websites, which were analysed in more detail. Two websites were added based on the advice from contacts in the field. These websites also turned up during the website search. In the case of Google BE the search was performed in both Dutch and French. In total two French-based and eight Dutch-based AAS-selling websites were selected for this research. The inclusion criteria for the websites were that they had to be either Dutch or Belgian, or had to be focused on the Dutch or Belgian market. For instance, the Dutch-based websites that came up during the Google BE and NL search mentioned things on their homepage such as, "The best choice for Belgium" or "The most reliable and professional marketplace for buying steroids in the Netherlands and Belgium". Finally, in some cases an AAS-selling website

was registered as, for example, both "anabolen.nl" (made up name) and "anabolen.be". These websites were not separately analysed but considered as one and the same website.

The ten websites were constantly checked throughout my research to see if any changes occurred and if they still existed. At the moment of this writing (2015, March 1) all of the websites included in this research were still online and available for purchasing AAS and other PIEDs (e.g., growth hormones, weight-loss drugs, Viagra). The names of the websites are not mentioned due to reasons of confidentiality (some of the website owners participated in this research). The website analysis was based on a similar approach as Cordaro et al. (2011) and included: website language(s), sold products, drug prescription requirements, need for creation of a personal account and subsequent login, rewarding systems, payment and shipment methods, and the use of visuals. Additional information about the websites (e.g., IP locations and addresses, names of domains) was subsequently obtained by the use of 'Who Is Source' (whois.domaintools.com). Finally, images were collected from the website homepage and any other tabs that were part of this website (e.g., steroid information tab, contact tab, FAQ tab).

The information on the websites was gathered by using NCapture, a web browser extension, which made it possible to import this data into NVivo. NCapture allows you to gather a range of content, such as webpages or blog posts, and also makes it possible to collect social media content (e.g. Facebook and Twitter). It is a great tool for comparing different websites, and allows for in-depth analysis of the collected data (e.g. text, visuals). Finally, the owner(s) of the website were approached for an interview. The contact details were obtained from their website or were provided by contacts I knew from the field. From the ten websites contacted only three responded, of which only one was willing to do a telephone interview. This person was interested in giving an interview as he knew and trusted the individual who provided me with his contact details. Moreover, some emails were sent back and forward with the other two contacts, and while they did answer some questions electronically, they eventually were not willing to partake in a formal interview for reasons discussed above (see section 3.4). While this information is used as background information to gain a better understanding of the Internet trade, the specific responses of these individuals have been excluded as data from this research.

4.7 Analysing the qualitative data

As with all research methods, conceptualization and operationalization necessarily involve an interaction between theoretical concerns and empirical observations (Berg, 2007). Following the methodological lines of Layder (1998) this dissertation has adopted an adaptive theory framework, which is inclusive of both deductive, 'theory-testing', as inductive, grounded-theory approaches. All

documents, PIED-related case files, transcripts and fieldwork notes have been the focus of a content analysis. The data was analysed using NVivo software. The first step of the analysis was to thoroughly read all the transcripts, case files, etc., and to 'immerse' myself in the text (Polgar & Thomas, 2013). I imported a document, transcript or any other form of data straight to NVivo as I received it. For instance, an interview or fieldwork observations was transcribed immediately, imported in NVivo, and coded in several stages. The goal of reading my material thoroughly during my research process was to discover if any information was lacking or missing, and to check if new or relevant information was still emerging or if I reached the point of data saturation (Charmaz, 2001, 2004).

The next step was to code all the retrieved data into categories based on similarities of words, concepts and themes (Polgar & Thomas, 2013). The documents were examined in terms of explicit themes, relative emphasis on various topics, and amount of space or time devoted to certain topics (Berg, 2007). The coding structure of my project was based on themes derived from previous literature on PIED and drug markets to guide data analysis and interpretations, but it also allowed room for new, valuable themes to emerge during the analysis of interview transcripts, websites, fieldwork notes and criminal justice cases (See also Stevens, 2011). The intention of 'open coding' or provisional coding was to expose myself to unanticipated themes and ultimately helped me to develop a better understanding of the PIED market as the research progressed. Subsequently, the explanatory themes grounded in the data appropriately reflect an interaction between the observers and the observed (Layder, 1998; Charmaz, 2001, 2004). For instance, a core code was "structure" which included satellite codes such as "hierarchy", "adaptability", "specialization" and "coordination". This code derived from my pre-determined research question focusing on the ways in which PIED networks in the Netherlands and Belgium are structured. On the other hand, a core code that arose during my analysis was "cultural factors" which included satellite codes such as "cultural knowledge", "cultural reciprocity" and "cultural embeddedness". This code is reflected in the development of my theoretical orientation and ultimately in my findings that PIED networks amongst bodybuilding subcultures are cultural products.

The last step was to qualitatively present these findings or themes throughout my research to indicate the reliability and validity of the results (Polit & Beck, 2012). In this dissertation I made use of representative quotations from the transcribed text to reflect the participants' voices. Moreover, I make use of vignettes, figures and tables to give a clear overview of my findings. In order to show that the findings represented the data as a whole I draw on a variety of sources (data triangulation). For instance, findings are often supported with both an interview quote and a fieldwork observation to confirm the connection between the results and data as well as the richness of data (Elo et al., 2014).

4.8 Limitations of research

A number of limitations were identified throughout the research process that may have impacted the data collection and, therefore, the analysis of the illicit PIED market in question. However, strategies were adopted to address these limitations.

First of all, one limitation encountered during this research is that the reporting of PIED violations in the Netherlands does not occur systematically as adequate monitoring systems are lacking. I tried to overcome this by collecting data from various sources (e.g. criminal justice cases, analysis media articles) and by working closely with all involved organisations (e.g. FIOD, IGZ); giving me a more nuanced picture of the Dutch PIED market. In addition, while the lack of registration imposes limitations on the collected data, it also tells us something about the Dutch situation concerning the regulation of the production and distribution of PIEDs. As such, the 'lack of registration' actually became a 'variable' in this research when measuring the effects of the Dutch policy on the illicit market for PIEDs.

Second, the focus of the case study was on male bodybuilding as very few women use AAS (Evans-Brown & McVeigh, 2009). The intention of this study was not to disregard the use and supply of PIEDs by women, and some female bodybuilders were encountered and spoken to during my research. Some of these female bodybuilders did use – mostly weight-loss drugs (e.g. ephedrine), but some did use AAS (primarily high-level bodybuilders) – and supply PIEDs but this group was rather limited. Moreover, in general women are less forthcoming about their pharmaceutical endeavours due to the associated gender stigma (Bunsell, 2013), making it difficult to obtain information about the production and supply of PIEDs from this group of users. As time was of the essence, it was decided to focus solely on male bodybuilders, as chances would be greater to gain access and insight into the illicit trade of PIEDs. Nonetheless, the other methods adopted were not gender specific, therefore, giving a better and more complete picture of the illicit PIED market.

Finally, the use of semi-structured interviews has many benefits as discussed above. In particular the flexibility in semi-structures interviews was important for this research given the various positions participations occupied in relation to the illicit PIED market (e.g. authorities and dealers). These participants tell 'different parts of a story' leading to a more accurate view of the illicit PIED market as a whole. Nonetheless, the problem arises where one cannot be certain that the individuals are telling the truth. While not telling the truth may teach us something about the identity of the participant, as discussed above, the danger still lies in the fact the interviewees are giving socially desirable responses. Nevertheless, researchers may take measures to avoid socially desirable responses by asking neutral questions or impersonal questions, or by trying to suggest norm-deviant as normal or desirable behaviour (Krug &

Schlüter, 2013: 75). For example, during the interviews and talks with bodybuilders I did not treat the topic of 'steroids' differently from the other elements related to bodybuilding (e.g. training, nutrition), but rather discussed all components of bodybuilding so as not to over emphasise the focus of the interviews on the more transgressive aspects of bodybuilding. In this way participants were encouraged to answer truthfully and without worry of being judged (Baxter et al., 2015).

However, each method adopted in this research reveals slightly different facets of the same symbolic reality, offering a different line of sight directed towards the same point (Berg, 2007). By combining multiple lines of site, I was able to obtain a more substantive picture of the illicit PIED market and a more nuanced explanation of the formation and development of PIED dealing networks and the individuals involved.

4.9 Conclusion: multiple methods, one social phenomenon

This research has adopted a multi-method approach in order to explain the Belgian and Dutch PIED market. In my initial study for my masters in Criminology only ethnographic research and interviews were included which made it difficult to extrapolate my data to the wider PIED market. To solve this issue criminal justice cases, other secondary sources (e.g. media articles, policy documents, seizure statistics), and AAS-selling websites have been analysed in order to obtain a more complete view of this illicit market. Collecting all the different data was quite a challenge and has definitely caused me to grow some grey hairs (e.g. traveling across countries, gaining access to the field, the bureaucratic process of obtaining permission to see criminal justice cases). However, the advantage of data triangulation is that a social phenomenon can be observed from different angles (e.g. law enforcement officers, anti-doping officials, users, dealers), leading to a greater understanding of the problem, and, ultimately, a better solution. Indeed, the various research methods employed in this study allowed for a fuller picture of the illicit PIED market.

In the upcoming chapters the findings of my research will be presented. While these findings are supported by a variety of sources, some of the data collection methods obtain more attention in specific chapters than in others. In chapter five the general characteristics of the Dutch and Belgian PIED market are discussed. The findings in this chapter are mainly based on the criminal justice cases and supplemented and contrasted to information retrieved from the other sources (e.g. interviews). In chapter six I zoom in on PIED dealing networks in relation to bodybuilding subcultures. This chapter relies heavily on my ethnographic research and interviews, complemented and contrasted to data derived from the other sources (e.g. cases). Further, while chapter seven and eight are a mixture of the various methods, the data derived from analysing the

AAS-selling websites is discussed in more detail here. Finally, the last findings chapter (nine) likewise draws from several methods in order to examine the effects of Belgian and Dutch PIED policies on this criminal market.

Chapter 5

Markets, cultures and PIEDs:

The characteristics of suppliers operating in Belgium and the Netherlands

This chapter will explore the characteristics of the illicit market for PIEDs, drawing on important similarities and differences between the Netherlands and Belgium and with other illicit drug markets. I will also juxtapose my findings with the work of Paoli and Donati (2014) who conducted similar research on PIED dealing in Italy. The descriptive data presented in this chapter is predominately based on the 64 criminal justice cases retrieved from the investigative units of the Netherlands (N=33) and Belgium (N=31). However, these findings are supplemented with data gathered from the interviews with Dutch/Belgian officials and dealers, and my fieldwork experience. This chapter is particularly relevant as a means to differentiate the PIED market from other illicit drugs markets, to reveal attributes specific to the Dutch and Belgian context and to highlight the differences between the two countries. The descriptive characteristics presented here directly inform our understanding of the way in which PIED markets form and develop in the Netherlands and Belgium.

Not all of the Belgian and Dutch criminal justice cases revealed the gender, profession or other characteristics (e.g. nationality) of the suspects. For example, in several cases no detailed information was given on the suspects' criminal record. However, most of this information could be retrieved through media articles, by personally knowing the (former) suspect from the field, and/or was confirmed through interviews with involved parties (e.g. authorities/dealers). In what follows I will pay special attention to the role of 'professions' and 'gender' as these two attributes were found to be particularly defining features of the Belgian and Dutch PIED market. The former characteristic indicates that there is a very fine and ambiguous line between the illegal and legal activities of PIED suppliers. The second aspect illustrates the masculine nature of the PIED market, and how gender facilitates the dealing activities of PIED suppliers. Finally, several other characteristics, including nationality, criminal records and age, will

be briefly addressed as these were found to be less dominant but, nevertheless, significant indicators when exploring and understanding the nature of the supply side of the PIED market.

5.1 PIED dealers and their legal professions

The professions of the dealers included in this research can be roughly divided into four groups: (1) the fitness industry and other physical professions, (2) the health care sector, (3) the food, agriculture, and animal health sector, and (4) the no distinctive profession or occupation group. These findings are consistent with the work of Paoli and Donati (2014) who found similar categories in relation to the Italian PIED market. Although PIED dealers may be separated into four groups this does not mean that these suppliers involved in different professions never cross paths in dealing networks. Rather, most Dutch and Belgian cases indicated that users and dealers obtained their PIEDs from multiple sources, which is consistent with other research (e.g. see Striegel et al., 2006). For instance, in one Dutch case a dealer, who owned a gym and was a bodybuilding coach, obtained his goods from foreign pharmacies (e.g. Spain) and also produced his own AAS (Case 40 NL). An example of a Belgian case comes from a gym owner who sold PIEDs in his gym, which he obtained through a physician and bodybuilding contacts (Case 26 BE). Nevertheless, for clarity purposes the different legal professions of suppliers will be discussed separately.

5.1.1 "Gym rats": the fitness industry and other physical professions

The largest group of PIED dealing suspects in both countries were those who had, and in some cases still have, a professional connection with the general gym environment[36]. Examples include gym owners, coaches/personal trainers, and owners of a supplement shop.

In Belgium, for example, in one of the largest PIED-related cases, involving 127 people, most of the main suspects (N=14) were found to be active in the gym environment, or more precisely, within bodybuilding (Case 6 BE). Rolf, the central figure in this PIED dealing network, was a bodybuilding coach, a nutritionist and owned his own supplement company. The case also indicated that Rolf had many contacts in the gym environment and used these connections, along with his reputation as a nutritionist and former competitive bodybuilder, to supply PIEDs on a large scale within Belgium. While Rolf did deliver PIEDs directly to users, the bulk of his products were distributed to other dealers who likewise had a profession in the gym environment or in other physical professions. For instance, some customers owned a gym, sold supplements, were bodybuilding instructors or worked in the private security sector. Many of the

[36] The gym environment refers to training with weights (e.g. fitness and bodybuilding) or other forms of training (e.g. yoga, spinning) on a recreational level.

individuals involved competed in bodybuilding and/or were part of the board of a Belgian bodybuilding federation. Further, although not all suspects in this case had a profession or occupational role within the gym environment (e.g. factory or construction worker), it was clear that all of the main suspects were professionally active in the gym environment. Comparably, in the Netherlands a relatively large case took place in 2004 in which 28 people were suspected of being part of a PIED dealing ring (Case 1 NL). The main suspect, Noah, was the owner of a gym and a bodybuilding coach, and is well known for his success in competitive bodybuilding. Noah also owned a popular bodybuilding magazine, which is well read in both the Belgian and Dutch bodybuilding community. People from across the Netherlands and Belgium came to his gym for personal training and Noah, like Rolf, used his professional reputation and connections in the gym environment to distribute PIEDs on a large scale.

A second group of dealers frequently encountered were those involved in physical occupations, and in particular in the public and private security sector. For example, several suspects worked as a bouncer, a security guard, or had a job within the police or military. Many of these suspects overlapped with cases involving people from the gym environment. For instance, in one Dutch case the two main suspects were both gym owners (Case 5 NL). The third suspect, Bert, worked as a bouncer or doorman at two Dutch bars. Bert regularly trained at one of the gyms of the main suspects, and was described by authorities as the "bodybuilding type". Bert obtained growth hormones (GH)[37] and other PIEDs through one of the gym owners and distributed them to other male trainers who likewise trained at this gym. Similarly, in a Belgian case a security guard was arrested for distributing PIEDs (Case 5 BE). The suspect trained and worked part-time at a gym and it was at that gym where he offered his illegal goods. So, while their professions were physical, in the end it was ultimatly their tie to the gym environment which connected them to the PIED dealing business.

This overlap is not unexpected, as people who weight-train on a high level will often seek a profession in which their bodies can play a central role (Monaghan, 2002; Bridges, 2009). Subsequently, these weight trainers will often seek out social spaces in which their bodily (and gender) capital is greatly valued, enabling them to gain a high social status (Monaghan, 2001). Nevertheless, while in general an overlap was found between the security and gym sector, there were some exceptions in which no direct connection was found with the gym environment. For example, in one Belgian case a prison guard smuggled PIEDs into a prison. He obtained the substances through a physician and sold them to inmates (Case 26 BE).

[37] Growth hormone (GH), or human growth hormone (HGH), is frequently used by non-medical users for its fat-loss-promoting properties, and to support muscle growth, strength gains and increased athletic performance (Llewellyn, 2010b). The use of HGH for its muscle building properties or as 'anti-aging therapy' or 'well-being' drugs appears to be gaining popularity (Evans-Brown et al., 2012).

Yet, the few studies available that focus on PIED dealing confirm the heavy presence of gym-related professions and the role of the gym sector in this illicit market (o.a. Koert & Van Kleij, 1998; Snippe et al., 2005; Striegel et al., 2006; Paoli & Donati, 2014). However, Snippe et al. (2005) mention that gym owners, who from the very beginning played a crucial role in the distribution and sales of PIEDs in the Netherlands, have become more careful after the amendment of the Dutch law in 2001[38]. As a result PIEDs may be more difficult to obtain through this channel. Still, the majority of studies maintain that the gym is the main arena in which to contact a PIED dealer. It is important here, however, to differentiate between the profession of PIED suppliers and the locations where these products are sold. For example, in the research of Stubbe et al. (2009, 2013) one of the answers that can be chosen to their question "how did you obtain your PIEDs?" is, "through personnel or visitors of a gym/fitness centre". The first part of the answer ("personnel") refers to a profession, while the second ("visitor of") refers to a location. Moreover, Striegel et al. (2006) found that 51.9% (N=81) claimed that they retrieved their AAS exclusively from the illicit market, of which 50% reported to have obtained them through fitness centre *visitors*. While indeed the gym environment would be the most logical place for gym owners to operate in, this location is not just specific to the dealers with a legal profession in the gym environment. Other types of dealers may use this location, as it is simply one of the best spots to contact customers.

In both countries, cases were found in which dealers with no legal profession in the fitness industry, and without any connection to bodybuilding or other weight-training sports, would visit gyms to distribute their products. Many of these dealers cannot even be regarded as weight trainers or gym users themselves, but rather utilize the gym as a location to conduct their illegal practices. This suggests that while gym owners may withdraw from the PIED market due to more repressive legislation, the gym as a location continues to be the most dominant setting in which to deal PIEDs. Importantly, the presence of dealers with an occupation in the gym environment in the criminal justice cases may also be the result of the focus of law enforcement agencies on the gym environment, and on bodybuilding in particular. Indeed, this group of dealers is more often the target of investigations as authorities are aware that the use of PIEDs will more likely be present in these high-risk environments (Mulrooney & van de Ven, 2015, January 21). Subsequently, the likelihood of finding PIED suppliers with a gym-related profession or within this environment is more likely.

[38] In order to more effectively combat the illicit PIED trade and the involvement of criminal organisations in the Netherlands the Dutch government amended the law in 2001 (see chapter 2)

5.1.2 "Doctor, doctor, please": suppliers with a profession in the health care sector

Another profession frequently encountered in this research are those connected to the health care sector including physicians, pharmacists, and employees of health care clinics. In particular, general practitioners were found to be frequently involved in Belgian PIED dealing networks. (Sports) physicians have long played an important role in supplying PIEDs to elite athletes (Hoberman, 2002, 2014). The close relation of PIEDs with medicine is clearly reflected by the many doping scandals, which revealed the role of physicians as advisors, distributors and administrators (Fincoeur et al., 2014). Likewise, in this research it quickly became clear that physicians played a similarly important role in supplying PIEDs to non-athletic users.

In 1999 Belgian officials noted that physicians, together with bodybuilders, were the main providers of PIEDs to non-medical users, including elite athletes (Flemish Parliament, 1999, April 19; see chapter 2). This has since not changed as the Belgian cases indicate that physicians still play an important role in supplying PIEDs to elite, amateur and recreational athletes, and other non-medical users. For instance, in 2006 an investigation in Belgium, originally focusing on cycling, established connections to bodybuilding (Case 2 BE). Specifically, the investigation found that, on the one hand PIEDs were illegally obtained by importing products from pharmacies and other sources located in China, Greece, Spain and Turkey. On the other hand, local physicians and pharmacists played a crucial role in supplying 'legal PIEDs' to non-medical users. In this scenario the supply of PIEDs becomes illegal when AAS are prescribed for non-medical reasons. In particular, one physician was well known by the Belgian police and the *Orde van Geneesheren* (Order of Physicians) for prescribing vast amounts of AAS to bodybuilders. It was eventually revealed that this physician prescribed under the names of fictional persons, or to persons that he had never previously examined. The involvement of people connected to the health care system in supplying PIEDs is consistent with other studies (o.a. Hoberman, 2002, 2014; Striegel et al., 2006; Paoli & Donati, 2014). For instance, Striegel et al (2006) found that in Germany the health care sector supplies 48.1% of the AAS users with their substances. In addition, while not specifically found in this research, some studies indicate that anti-aging clinics play an important role in the illegal distribution of steroids and growth hormone to non-medical users (Perls et al., 2005).

Nevertheless, most cases targeting physicians took place in 2006 and 2007, and have since tapered off. Indeed, the data suggests that it has become increasingly difficult for users to obtain products through these legal channels in Belgium. During my fieldwork several bodybuilders confirmed that Belgian doctors have become less accessible, and when willing to prescribe, often only prescribe products which counteract the side effects of PIEDs. For example, Chris

and Johnny, both bodybuilders, mentioned the following when asked if one could still acquire PIEDs via a physician:

> "KvV: Can you still get steroids through a doctor [in Belgium]?
> C: No, I don't think so. Several years ago they [the police] arrested several physicians in Belgium. They prescribed too much and cooperated with pharmacies, and they got them all." (Chris, Belgian ex-dealer, interview)

> "J: Yeah, I can still remember the days when you could get it [AAS] relatively easily through a pharmacy in Belgium. But that is unfortunately not the case anymore. They did become more strict over there." (Johnny, Dutch helper, field-notes Dutch bodybuilding competition)

It appears that the increased regulation and prosecution of physicians and pharmacies in Belgium have successfully deterred this group of suppliers, and that they have largely withdrawn from the PIED market (Fincoeur, 2013a). However, while the data presented here suggests that this group of suppliers seems to be declining in Belgium, a recent investigation maintains that those in the health care sector are still quite active in this illicit market. In 2014 the Hormonencel together with the *Federaal Agentschap voor Geneesmiddelen en Gezondheidsproducten* (FAGG) (Federal Agency for Medicines and Health Products (FAMHP)) investigated several pharmacies and physicians in Flanders and discovered that the prescription behaviour for Sustanon (type of AAS) was abnormally high. One explanation could be that physicians, like the gym owners in the previous section, are still supplying AAS to non-medical users, but that they just have become more careful since the increased law enforcement efforts in Belgium.

By contrast, in the Netherlands this group of dealers does not seem to play a major role in supply PIEDs. In the early 1990s certain Dutch physicians were known to medically supervise and provide PIEDs to (elite) athletes, but since the Association of Sports Medicine created guidelines for physicians in 1995, including the prohibition of prescribing PIEDs, this has seemed to decline (see chapter 2). Indeed, none of the Dutch cases indicated a connection between the health care sector and the PIED market. Correspondingly, both the Dutch officials and other participants involved in the PIED market confirmed this. For example, Thomas, a Dutch official, mentioned,

> "KvV: Do you see that physicians are prescribing PIEDs [to non-medical users]?
> T: No, not at all. A physician knows that he will get a disciplinary complaint against him. […] Maybe there is one 'wrong' doctor in

> the Netherlands who is involved in this [the PIED market]. But those are not general practitioners. If a doctor is involved than it has to do with sports medicine. Well, it has nothing to do with sports medicine, but more with improving sport results." (Thomas, Dutch official, interview)

The data, with respect to the limited presence of health care professions in PIED dealing networks, confirms findings from previous studies conducted in the Netherlands (Koert & Van Kleij, 1998; Oldersma et al., 2002, Snippe et al., 2005). Nevertheless, while physicians were the least frequently mentioned source, the figures of De Boer et al. (1996) and the Gezondheidsraad (the Health Commission) (2010)[39] indicate that around 13% of the users actually did obtain PIEDs through this channel. This figure is quite a high percentage when compared to the idea of "one 'wrong' doctor in the Netherlands" mentioned above by Thomas. Nevertheless, several factors could be influencing this figure. First of all, many of the bodybuilders involved in this research suggested that Dutch physicians are predominately a source to obtain PIEDs that serve to counteract the side effects of AAS. For example, Nolvadex, an anti-estrogen, is commonly used after a steroid cycle to help restore the users' natural testosterone production. Second, physicians may have been mentioned as a source by the participants as a means to protect their illegal source or out of general distrust due to the illicit nature of the substances being surveyed. The latter is a problem that is apparent with doping research in general (e.g. see Waddington, 2005; Yesalis et al., 2001). Finally, it could simply be that certain users are using PIEDs for medical reasons and, therefore, are actually obtaining them through a legal source. Thus, while individuals involved in the health care sector will at times supply PIEDs to recreational users, this does not seem to occur on a large scale, particularly when compared to other sources.

The fact that Dutch physicians are more reserved in prescribing PIEDs than their Belgian colleagues does not come as a surprise. Several studies on the prescription behaviour of physicians suggest that Belgian physicians have a tendency to prescribe medicines, while Dutch doctors have been shown to be more reserved in their prescription behaviour (e.g. see Deschepper, 2002; ECDC, 2011; IVM, 2014). For example, in 2013 a study found that 83% of the patients in Belgium leave their appointments with a prescription for medication, while in the Netherlands this figure was only 60% (Artsennet, 2013 August 8). Deschepper (2002) argues that three factors in particular explain this difference in prescription behaviour: epidemiological, structural and cultural factors. The first refers to the differences in the frequency of general pathology. For instance,

[39] The Dutch Health Commission (2010) conducted a study on PIED use in recreational sports in the Netherlands. In this report they devote a small paragraph to the origins of these products based on information from the National Prevalence Survey Substance Use 2005 (Rodenburg et al., 2007).

Dutch patients do not need a note from their physician when being absent from work. The second considers the diversity in the organisation of the health care system such as the education of physicians and the insurance for medicines. The last refers to differences in medical culture amongst physicians and patients and more deep-seated national cultural characteristics (e.g. religion). For instance, the Flemish are accustomed to leaving the consulting room with some medicines or other, while in the Netherlands this expectancy is less apparent (Deschepper, 2002: 167). In Belgium this has given rise to a certain pattern of expectations, which is often reinforced by the prescription habits of the Flemish physicians. In other words, prescribing medication is 'ingrained' in the Belgian medical culture (Artsennet, 2013, August 8).

Moreover, in the Netherlands, physicians are more restricted by general guidelines compared to their Belgian colleagues. An example related to the PIED market is that in 1996 the Netherlands Association of Sports Medicine created the "guidelines for physicians concerning sports medicine treatment". Those specific rules contain an injunction on prescribing medicine for doping purposes and instructions on informing sports people about (the risks of) doping. In cases of violations of those guidelines (including the specific rules), sanctions may vary from an official reprimand to a definitive disqualification to practice medicine (for more details see Council of Europe, 2004, July 29). In Belgium no such guidelines concerning 'doping' or 'PIEDs' exist. Rather, Deschepper (2002) found that Belgian physicians in general reject implementing such guidelines, as they are viewed as (1) an infringement on the doctors' therapeutic freedom, and (2) the guidelines are considered to be too general limiting flexibility in individual cases. In contrast, Dutch physicians are quite accepting of general guidelines, and even if they want to deviate, their colleagues will most likely rebuke them (Deschepper, 2002). The organisation of the Belgian health care system is characterized by a high degree of freedom for both physicians and the patient, while the Netherlands is seen as "an example of regulatory zeal" (Deschepper, 2002: 25). These cultural differences, along with state guidelines, seem to play an important role in the variations in prescribing PIEDs between the two countries.

5.1.3 Cattle steroids: the involvement of the food, agriculture and animal health sector

The cases concerning animal doping were not included in the data analysis as the focus of this research is on the PIED market for human use and not that of animal doping. Nevertheless, it is important to briefly discuss this group of dealers as these dealing networks sometimes overlap with the illicit market for human PIEDs. The annual reports of the Hormonencel indicate that many individuals

with a profession in the food, agriculture and animal health sector are involved in PIED dealing networks; most often involving the illegal hormonal treatment of animals. For instance, in several PIED-related cases Belgian veterinary physicians (henceforth, vets) were arrested for supplying PIEDs and illegally injected hormones into livestock animals to make them grow faster and bigger (e.g. see Hormonencel, 2006, 2010, 2013). In the Netherlands, the *Nederlandse Voedsel- en Warenautoriteit* (NVWA) (the Dutch food and Consumer Product Safety Authority) handles PIED or, better said 'hormone-related'[40], cases that are connected to this sector. Similar to Belgium, these hormone-dealing networks are often comprised of vets and breeders. For instance, an owner of an animal medicine company was arrested for the illegal import and possession of five kilos of growth hormones (GH) and other animal medicines (Braakman, 2013, November 28). Another group often involved in 'animal doping' are the individuals connected to animal sports such as jockeys and the owners of racing pigeons. For example, three Belgian men, one jockey and two horse owners, were arrested for injecting PIEDs into twelve racing horses (Knack, 2012, March 2).

Initially, the Hormonencel began to include human PIED violations in their task description as several investigations revealed that these dealing networks often overlapped with the livestock industry (see chapter 2). For example, in 2003 a Belgian vet was found supplying PIEDs to elite cyclists (Ergogenics, 2003 September 5). That same vet was arrested again in 2013, but this time for injecting PIEDs into sports horses (HLN, 2013, December 13). In another case a vet supplied Clenbuterol[41] to a young cyclist and one of his teammates (Hormonencel, 2010). Moreover, several international doping scandals have highlighted the involvement of vets and firms operating and supplying veterinary stores, in dealing PIEDs for human use. For instance, operation Gear Grinder in 2005 revealed that eight AAS manufacturers in Mexico illegally supplied their products to the United States. The firms operated openly in Mexico and marketed their products on the Internet as AAS for horses and cattle, but the Drug Enforcement Agency (DEA) discovered that they were designed for human use and not for veterinarian purposes.

Nevertheless, while some of these PIEDs designed for animals may end up on the 'human PIED market', these dealing networks stay separate for the most part. In the majority of cases the suspect(s) only supplied to individuals involved in the livestock industry (e.g. farmers) or other animal sectors (e.g. jockeys), and

[40] The use of PIEDs in the food, agriculture and animal health sector are used, for example, to promote rapid growth and increased milk production in animals. The goal is not necessarily to enhance 'performance' or 'image' but to increase the productivity of certain types of animals. Therefore, the term "hormones" is more appropriate when talking about these substances in relation to animals.

[41] Clenbuterol, or "Clen", is an anti-asthma medication that in a medical context is used in the treatment of conditions such as asthma, hypertension and cardiovascular shock. In a non-medical setting, such as bodybuilding, this drug is very popular for its fat losing properties (Llewellyn, 2010b).

did not distribute to people for human consumption. The interviews with Dutch and Belgian officials confirmed that these hormone suppliers tend to focus on the PIED market for animal use and in general avoid the human PIED market:

> "KvV: Do you often come across vets who supply PIEDs for human use?
> M: No, we don't see that so often in the Netherlands. According to my knowledge… It is very long ago that something like that happened, a very long time ago." (Mark, Dutch official, interview)

> "KvV: Do you see a connection between the human and animal [PIED] market?
> J: There are people who use animal medicines. Those medicines come from America and are meant for animals but are used by humans. In the past there was a study in which it became clear that humans, at least in Belgium, produced those products for animals and sold them to athletes. But the last couple of years… Did you have experience with that [looks at colleague]?
> V: No.
> J: I think you have to place it in a different category. Someone who distributes on a large scale will deal in both veterinary and human products. We had a couple of those […] But a real intertwinement, no." (Joop & Vera, Belgian officials, interview)

Most of these dealers involved in the sales of PIEDs for human consumption or hormones for animals specialise in a single market. One reason for this is that the skill set required for injecting cattle or supplying to humans is quite specialised, creating barriers for dealers to enter both markets simultaneously. For instance, the dealers connected to the livestock industry are often involved in this market due to their legal occupation, and therefore expertise (e.g. vets or breeders). As a result, dealing channels often exist along already established legitimate structures: making it difficult for dealers not involved in this environment (e.g. gym owners) to enter this market. Likewise, as the sale of PIEDs for human consumption is often accompanied by advice pertaining to types of PIEDs, dosages, etc., the level of knowledge required for the sale of human PIEDs also creates barriers of entry. While non-medical PIED users may consume medicines meant for animals, in most cases the actual sales in these illicit markets seem to be quite 'specialised' and therefore separate.

Moreover, as illegally produced AAS are currently dominating the illicit market for PIEDs in Belgium and the Netherlands, there is also very little need for 'veterinary sources'. Illegally manufactured AAS are available on the illicit market in large quantities, come in all different shapes and sizes, are cheaper and are easily accessible (Kraska et al., 2010). For example, Trenbolone is an AAS

used by veterinarians on livestock to increase muscle growth and appetite. However, this AAS is now widely manufactured by illegal producers and is commonly used by non-medical users to increase body mass. Ultimately, AAS produced and/or supplied by vets or others involved in this industry, while still procured and consumed for both animal and human growth needs, are becoming a less sought after source. It appears that the illegal production of these substances for humans in particular, and their ready availability, has decreased such overlapping instances. While these markets may be connected at the wholesale level, I found no evidence in this research that they are connected at the retail level.

5.1.4 The dealers with no distinctive professions or occupations

Not all PIED suppliers included in this research had a distinctive profession. For example, in one Belgian case the suspect owned a metal company and produced AAS in his factory and marketed them through a website (Case 8 BE). In a Dutch case, a market vendor was caught for possessing a large amount of AAS when his house was searched after his arrest (Case 27 NL). An example from my fieldwork is Rens, a Dutch bus driver, who visited the supplement shop I worked at a couple of times a month. Before Rens began supplying PIEDs, he was active in dealing Viagra. However, after his arrest and conviction for dealing Viagra, he found this illegal activity too risky and instead began to deal in PIEDs. Rens has little connection with his customers outside of his illegal transactions, and would visit the supplement shop to look for potential clients. He would often drop by, have a chat, and ask if anyone would be interested in buying his products, or he would inform us about the products he had on stock.

Paoli and Donati (2014) refer to these dealers as "generalist dealers": suppliers with no distinctive profession who are willing "to provide their goods and services to whomever is interested in them" (p.121). As in Rens' case, these dealers have often been found to be involved in other illegal activities, such as selling illegal drugs (e.g. MDMA) or prescription medication (e.g. Viagra) (Snippe et al., 2005). Further, the cases and data derived from the field show that this group of dealers usually do not have a specific (personal) connection to the sport or gym environment, but make use of locations, such as gyms, to distribute their products (see also section 6.1.1). For instance, Joop and Vera, two Belgian officials, mentioned the following about this group of dealers:

> "J: I think that those [PIED dealers] involved in the sport are decreasing. For example, coming back to that case that took place in Tongeren. They just made an agreement with a Dutch person and together they agreed, "We are going to produce steroids and supply the fitness centres in [Belgian] Limburg." That is just a businessman that had a company. A legal company with a couple

> of workers and outside of that wants a profitable profession. He is no athlete. […]
> V: He sees an opportunity…
> J: … to make money and of course he thinks of athletes who go to a fitness centre." (Joop & Vera, Belgian officials, interview)

Similarly, in one Belgian case two suspects stole a load of Genotropin (a prescription growth hormone) from an airport (Case 1 BE). The cargo belonged to the pharmaceutical company Pfizer and was destined for Saudi Arabia. The case files indicated that one of the suspects owned a gym which was used to sell PIEDs within the fitness and bodybuilding environment. The rest of the PIEDs, however, were smuggled into a penitentiary facility by a female prison guard, and once in the prison sold by an inmate to other prisoners.

During my fieldwork several bodybuilders likewise mentioned that these dealers, with no specific connection to the fitness industry, are increasingly selling PIEDs through gyms.

> "M: Now you have these guys in the gym, these 'pretty boys', who are selling steroids to people. These guys don't really work out in the gym but are more there to 'look good'. They don't have knowledge of steroids and just sell it to other people to earn money." (Maarten, Dutch non-user, Dutch bodybuilding competition)

The growing presence of these dealers was also noted in previous research on the Dutch PIED market (de Hon & Van Kleij, 2005; Snippe et al., 2005). Several participants in the research of de Hon and van Kleij (2005) mentioned that a new kind of dealer is arising in the Netherlands who often has no direct link with gyms or fitness centres, provides poor quality PIEDs, and engages in other illegal activities (e.g. the supply of drugs). This group of dealers also seem to make regular use of the Internet to distribute their products. Beginning in 2006-2007 an increase in Belgian and Dutch cases may be noted in which PIED suppliers with no specific profession sell PIEDs through the Internet (e.g. set up AAS-selling website) (e.g. Case 4, 12, 28 BE; Case 7, 8, 23 NL; Hormonencel, 2006-2012). In chapter eight the role of the Internet in facilitating the distribution of PIEDs will be discussed in more detail. However, the fact that this group is more frequently found during police investigations may also be a result of how investigations regarding PIEDs are started. Indeed, PIED-related criminal justice cases in Belgium and the Netherlands are often a 'by-product' of investigations on the production and trafficking of other illicit drugs (e.g. MDMA) or counterfeit medicine (e.g. Viagra). Police investigations are rarely instigated that solely focus on the manufacturing and distribution of PIEDs such as AAS or human growth hormones. Therefore, the rise of these new dealers may be a by-product of drug

busts in other markets. Police reports do show that the amount of drug confiscations, investigations concerning the production and supply of drugs, and the people charged and prosecuted for this type of crime in the Netherlands (e.g. see Openbaar Ministerie & Politie, 2015) and Belgium (e.g. see WIV-ISP, 2015) has increased over the years.

5.2 The importance of having a legal profession in the illicit PIED market

The data indicates that the majority of PIED suppliers in the Netherlands and Belgium have a legal profession in the fitness industry (e.g. personal coach and supplement shop owners) and other physically oriented professions (e.g. security/prison guard and police officer). An important difference between the two countries is that Belgian suspects more frequently had a profession in the health care sector (e.g. physicians and pharmacists). Nevertheless, although this group of suppliers played an important role in the Belgian PIED market up until 2006-2007, they now seem to be slowly withdrawing from the market. In the Netherlands this group has never played a major role in the PIED market (Koert & Van Kleij, 1998; Oldersma et a, 2002). Thus, while the legal occupations of PIED dealers in the Netherlands and Belgium varied, suppliers were most often found to be associated with or directly involved in professions found in the fitness industry and medical arena (see table 5).

Paoli and Donati (2014) created a typology based on the professions found most frequently in the Italian PIED market and identified ten main types of illegal PIED suppliers, grouping them into six main categories. These categories are “gym”, “health care”, “(human) organized sports world”, “horseracing”, “use” and “other”. While similar results can be found in regards to the professions of participants in this research, an important difference is the suggested motives of PIED suppliers who are involved in this market. Paoli and Donati (2014) argue that profit provides the main and often sole motive for the nine types of illegal suppliers belonging to the categories of “gym”, “health care”, “horseracing”, and “other”, and for public and private security personnel engaging in bodybuilding. The only exception is suppliers belonging to the organized sports world and for suppliers who are athletes (including competitive bodybuilders). The behavior of these suppliers can rather be explained in terms of “over-conformity” (Coakley, 2009) with norms and values embodied in sports, as the result of a socialization taken to extremes (Paoli & Donati, 2014). Although I concede that personal profit and over-conformity play an important role, it is too simplistic to focus solely on economics as an explanation for the other categories, and risks ignoring acculturation in, for example, the bodybuilding subculture. The authors do note that most athletes, including competitive bodybuilders, who import or export PIEDs for personal use, are probably driven by over-conformity to sports rules, the desire to score well in a competition and be accepted by their peers. However, in the next chapter I will show that the dealing of PIEDs goes well

beyond financing personal use or facilitating their sport career. What we will see is that the embeddedness of PIED-related supply-side activities in legitimate professions, roles, and institutional settings form an integral part of the market culture these dealers engage in.

Table 5

The most frequent professions found in the Dutch and Belgian PIED market

Category	Examples of professions	Country
The fitness industry and other physical professions	Gym owners, personal trainers, owners of a supplement shop and security personnel.	Netherlands and Belgium
The health care sector	(Sport) physicians, pharmacists, nurses and employees of health care clinics	Belgium
The food, agriculture and animal health sector	Vets, breeders, individuals involved in animal sports (e.g. pigeon races)	Netherlands and Belgium
No distinctive profession or occupation	n.a.	Netherlands and Belgium

5.3 The masculine world of PIED dealing

In both Belgium and the Netherlands the majority of PIED suppliers are men. Considering that the primary consumers of PIEDs, in particular AAS, are men (o.a. Windsor & Dumitru, 1988; Korkia & Stimson, 1993; Nilson et al., 2001) it is not surprising that men also dominate the supply side. In only four Belgian cases and in none of the Dutch cases were women mentioned as part of the PIED dealing networks. Moreover, the women who were suspected of a PIED offence played a marginal role (e.g. shipping, keeping track of the administration) or were simply aware that the illegal activities were taking place. A similar picture was painted in the interviews with all the parties involved in this research, and during my fieldwork it was often mentioned that the PIED dealing business was a "man's world" (Roy, Dutch producer & distributor, interview).

The literature on women, drugs and crime often suggests that female drug dealers occupy lower-level or marginal roles in the illicit drug market (a.o., Maher & Daly, 1996; Anderson, 2005; Hutton, 2005; Maher & Hudson, 2007). Further, the majority of these studies suggest that women are heavily reliant on men to be successful in the illicit drug market. It may be argued that this division

of gender is even more apparent in the PIED market due to the status of testosterone as "the male sex hormone" and as being a symbol for the "concentrated essence of masculinity" (Keane, 2005). In addition, most drug trafficking studies argue that women often engage in drug dealing due to their own drug consuming habits (Anderson, 2005). However, as men are the primary consumers of AAS, this does not seem to apply for women who want to operate in the PIED market. Considering that women often will not sell AAS to sustain their own use, and that PIED using environments often are male-dominated to begin with (e.g. bodybuilding and police) (Sweitzer, 2004; Hoberman, 2014), it seems less likely that women will be interested in engaging in selling steroids. Further, the focus of this research was largely on AAS and drugs that often are taken in combination with these products. Therefore, it could be that if, for example, weight-loss drugs, which also fall under the PIEDs category, were more central to this work, more female suppliers would have been present in dealing networks. Weight-loss drugs are more popular amongst female PIED users (Detmar et al., 2003; Thualagant, 2012) and, therefore, it could be that females are more active in selling these illicit substances. For instance, in the Dutch documentary "Undercover in Nederland" (Undercover in the Netherlands) an episode was devoted to the trade in AAS, weight-loss pills, and EPO which suggested that women play a more dominant role in the illicit market for weight-loss products, while male dealers are mostly involved in supplying AAS and EPO (NWTV, 2014, May 11).

However, this is not to argue that women are completely disengaged from selling AAS and other muscle-enhancing drugs, but that they will more likely engage in lower-status roles to support their partner rather than having an autonomous role. Indeed, the women that were involved in the dealing business were often tied to the main male suspects by blood, marriage, or love ties. For example, in one Belgian case from 2012 the sister-in-law of the main male suspect managed part of the AAS stock, and prepared and shipped steroids to customers (Case 12 BE). In total she shipped a maximum of 150 packages within an eight-month-period and was paid a monthly amount of 300 Euros for her contribution. Furthermore, the partner of the main suspect allowed him to use her name to receive payments. The lack of primary involvement and supportive role of women was also confirmed in the interviews by all parties:

> "J: There once was a case in which a French speaking Belgian person made his own website. And his sister in law picked up the money and shipped the packages.
> V: […] She did not really know where the products were coming from. *Without thinking she just filled 'the basket' and shipped it*. And *she got money for that.*" (Joop & Vera, Belgian officials, interview)

> "R: […] Look, you have to compare it to soft drugs. That happens somewhere in a back room. And then you have many women who just 'cut and paste'. *It is just really a 'woman's job'*. And you have a couple like that here as well, for example tablets just come in giant boxes, they arrive in thousands at a time, and then *it is the women or girls who weigh them, label the bags and seal them.*" (Roy, Dutch producer & distributor, interview)

The last quote illustrates that women are somewhat subordinate in the PIED dealing business. This was a recurring theme throughout this research. For example, Roy talks about a "woman's job" as if doing these side-tasks or errands are typical roles, more suitable to women. However, the fact that women are less engaged in this market may also simply come forward from not being interested in dealing in these types of products. Consequently, the women that are involved will indeed more likely be confined to these small tasks. In a sense they are just 'helping out' their partner, brother, etc., as opposed to becoming involved because they see a personal or business opportunity. Nonetheless, while woman often only play a small part in the PIED market that does not mean that women are not powerful actors in this market. As Anderson's (2005) study on female drug traffickers shows, these activities are fundamental to the drug world organization and eventually may lead to important forms of capital, facilitating the future pursuits for these women.

While in general women played a marginal role, a few exceptions were found in which a female supplier did supply PIEDs on a large-scale. These women were often highly involved in the users' environment. For instance, in one Dutch case (Case 39 NL) and during my fieldwork I did note that several Belgian and Dutch female bodybuilders played a role in the wholesale distribution of PIEDs. Like their male counterparts, these women obtained a high social status within bodybuilding subcultures, rendering them more opportunities to engage in these illegal practices. In chapter six the importance of social capital within PIED dealing networks amongst bodybuilding subcultures will be discussed in more detail. Moreover, Sammy, an Internet dealer, recalls a time that he unexpectedly came across a large-scale female distributor in the field.

> "S: I have to say that last year I went somewhere and I was absolutely convinced that the source was a man but after four or five years, I discovered that it was a woman… I was really flabbergasted in the sense of "what is happening now?" In the first instance I asked, "Where is that and that person?" "No", she said, "that person is me". I thought, "You have to be kidding me" […] I think she never revealed herself because she was afraid that she would be taken less serious, and that is also what she said herself.

> She thought that, "when I say that I am a woman people [both suppliers and users] will take me less serious." (Sammy, Internet dealer, interview)

It could be that this particular woman did not feel safe to reveal her gender because she was worried that she would not be taken seriously in the illicit PIED market. Female drug suppliers' drug dealing activities are often affected by the gendered position of suppliers (Hutton, 2005). Some women will operate in an 'invisible' manner to guarantee their survival in this gender-segmented market. Therefore, risks are negotiated in a different way than their male counterparts as a way to become a powerful actor in the world of PIED dealing. However, this remains a rather speculative explanation as no upper-level female dealers were spoken to in this research, or found in the criminal justice cases.

The fact that women are taken "less seriously" in the PIED market and bodybuilding in general is also something I noted during my employment in a supplement shop. Despite the fact that this only involved selling legal supplements (e.g. protein shakes, weight-gainers) it became clear that women are considered less 'knowledgeable'. Male customers often came in to ask advice on supplements, training, nutrition and also AAS (e.g. how to inject, what to use). During my employment, these customers would almost always first seek out my male colleagues for advice, despite our knowledge being similar regarding supplements, training, diets, and even AAS. Some customers even asked my male colleagues if my advice was correct, or would rather came back another time when one of my male colleagues was present. It took quite a while before regular customers acknowledged my expertise and accepted any advice I had given them. It is understandable that male consumers will feel more at ease with male suppliers, as they are more likely to 'represent' the product they are selling. Taking even a quick look at my male colleagues would indicate that they spent hours in the gym, and their bodies highlighted the fact that they knew a lot about 'muscle enhancement' including training, supplements and AAS.

Therefore, it may be that users are inclined to take female suppliers initially less seriously than their male counterparts. Female suppliers will face more obstacles or are more restricted when operating in the AAS market than their male counterparts. However, the opposite may also be true as 'being a woman' may facilitate the dealing practises of female PIED suppliers, for instance, when it comes to illegal weight-loss products. These products are generally more associated with female users. In fact, during my fieldwork women often directed their questions towards me when it came to advice on losing weight, training and illegal fat-burners (e.g. stackers that contain ephedrine). PIED markets can vary drastically depending on the sort of substance used, the reasons for using, ways of using, the type of user, context in which they are used, meanings attributed to them, and so on. All these factors may influence the way in which these illicit markets are structured and

organized and, therefore, will likewise impact the way in which these illicit substances are produced and distributed. As a result, it seems that the behaviour of male and female dealers is influenced by the market *culture* in which they operate.

5.4 The 'typical' PIED dealer: mature, Dutch or Belgian, and no criminal record

In the majority of the criminal justice cases the suspects did not have a criminal record, and were quite mature in age. The average age of both Belgian and Dutch PIED dealers from the criminal justice cases was 35 years. There were, of course, exceptions to the general finding of clean records and the older age of PIED dealers (see also Paoli & Donati, 2014). For instance, security guards who have criminal records for violent offences (group one), and people from the fourth group (no profession) were often found to have criminal records for dealing illegal drugs. An example of a case in which the PIED dealers were adolescents, involved two Belgian brothers, one of whom one was a minor, who offered steroids through the Internet (Hormonencel, 2009). The brothers obtained the PIEDs through a Dutch contact and used their father's personal computer (PC) to place seventeen adverts across the Internet. The brothers were active fitness trainers and used the substances themselves.

Paoli and Donati (2014) suggest that the very embeddedness of PIED supply-side activities in legitimate professions, roles, and institutions and the other characteristics are suggestive of white-collar crime and the related and partially overlapping concepts of occupational, corporate, and organizational crime. They argue that the fact that many suspects of PIED-related offences do not have a criminal record likewise reflects the embeddedness of PIED supply in professional affiliations and relationships. In other words, most PIED suppliers do not undergo the typical 'criminal career' of drug dealers, where, for example, one starts young with petty thefts or violent crime and gradually moves on to more serious crimes when advancing in age (e.g. see Nagin & Land, 1993; Sampson & Laub, 2003).

While I agree that PIED dealers indeed do not undergo the usual criminal career, I, instead, argue that these characteristics once again tie back to the type of market we are dealing with; in particular the market culture. The PIED business is a rather specialised business and not everyone has suitable ties and/or the knowledge to enter the PIED market, and it takes time to build reputation. For instance, as PIEDs involve more forethought and health related expertise than illegal drugs, certain (cultural) knowledge is needed to participate in this market (Maycock & Howat, 2007; Kraska et al., 2010). While, for example, marijuana may have different strengths based on the amount of THC, an AAS cycle may involve multiple types of AAS and other muscle-enhancing drugs, which vary in strength and amount, and which all have different effects on the

physical appearance of the user (Monaghan, 2001). The AAS business is simply not a market that everyone can enter. Before a certain age, most individuals lack the necessary contacts and/or knowledge, regardless of how financially attractive producing and dealing PIEDs may be.

In addition, the general lack of regulation in most countries offers an explanation for the absence of criminal records and age. In comparison with other illicit drug markets, many dealers' criminal records are a product of their involvement in a highly regulated market. The younger age of these dealers may signify the greater severity of punishments leading to long periods of incarceration, and a higher rate of turnover. In contrast, the 'semi-legal' and unenforced nature of the PIED market makes it an ideal place to sell illegal substances. As little attention is paid to the PIED trade, the risks to start or the incentives to leave this illicit market are relatively low. For example, Nathan is a producer and large-scale distributor of PIEDs in the Netherlands. He started dealing at a relatively young age and gradually grew his illegal PIED business over the years, combining this with his legal activities connected to the fitness industry. Importantly, several Dutch officials informed me that they are aware of his illegal activities but that there is no institutional will to react.

Moreover John, a PIED expert[42], suggested that another reason why most suspects are older is that criminals who used to be involved in other illegal activities (e.g. human trafficking, selling illegal drugs) see the PIED business as their 'retirement plan'. As he explained:

> "J: Some of these dealers come from the 'serious crime' circuit [e.g. drug dealing] but as they become older it jus becomes too much for them [the risks], and they just want to take it easy." (John, PIED expert, interview)

He argues that dealing in PIEDs becomes an attractive option, as this illicit market is much more 'mellow' compared to other illicit markets on all levels (e.g. low priority police, little violence). Indeed the data confirms that due to the unregulated nature of the PIED market, dealers with no distinctive profession, such as Rens 'the bus driver', become attracted to the market as it involves fewer risks. Surely, if the market was to become more regulated, one could expect a growth in the criminal records of suppliers, younger suppliers and the introduction of more 'risk-taking' or 'risk-tolerant' entrepreneurial drug dealers (o.a. May & Hough, 2004; Kerr, Small & Wood, 2005). For instance, in Belgium, where PIEDs are more highly regulated compared to the Netherlands, there are more reports of suspects who have previously been convicted for dealing in PIEDs (often belonging to the first group), violent crimes (e.g. domestic violence)

[42] John has conducted several studies within the PIED field and writes extensively on this topic. John is quite a respected figure within bodybuilding because of his knowledge, which goes beyond just PIEDs (e.g., nutrition, training, etc.).

(more frequently found in group one and four), and other crimes such as dealing other illegal drugs and/or weapons (most belong to group four).

A final note concerns the ethnic background of PIED dealers in Belgium and the Netherlands. Foreigners and ethnic minorities, both legal and illegal, appear to play a limited role in the Belgian and Dutch PIED market. As Paoli and Donati (2014: 79) highlight, this is in stark contrast to the illicit drug market where migrants occupy the lowest and most dangerous levels in the drug distribution system (see also Albrecht, 1997; Paoli & Reuter, 2007). While the authors again relate this to the embeddedness of PIED dealing networks as legitimate social networks, I once again suggest that it ultimately comes back to the type of market we are dealing with (the market culture). Therefore, certain 'advantages' ethnic minorities may have when it comes to drug dealing do not apply when dealing in PIEDs. For example, most cocaine originates from South America, making it more common for drug traffickers in these source countries to actively solicit kinship and/or ethnic connections in other countries to expand their business (Desroches, 2005). However, PIEDs do not originate from a specific source country per se - except for the raw materials of AAS which mostly come from China – and in particular AAS can be easily illegally produced and sold in the country of residence. Therefore, the advantage of geographical proximity to drug-producing areas and/or routes ethnic minorities may have does not seem to apply in the PIED market[43].

Moreover, what is also influencing the fact that most suppliers are of indigenous ethnicity is the lax of international PIED regulation concerning this market and the growing role of the Internet (de Hon & van Kleij, 2005; Kraska et al., 2010); something Belgian officials frequently emphasised during the interviews and informal talks. Belgian officials in many cases come across a 'Dutch link' – whether it be an Internet source or a personal contact -, but in most instances the Netherlands did not pursue these leads or were not willing to cooperate. As a result, many Belgian investigations cannot be pursued and stop at the Dutch border, which may explain the higher number of Belgian suspects as opposed to foreign (in this case Dutch) suppliers.

Nevertheless, in some cases PIED suppliers were "second-generation immigrants"[44] or had ancestors who were foreign-born. In these cases the distribution chains of the suspects could indeed be traced back to the countries their family originated from. These dealers often made use of their strong (family) ties and the lax enforcement in their home countries. The example of Noah outlined in section 4.1 provides a good illustration of this (Case 1 NL). Noah was born in Amsterdam but his father was from Tunisia. When he was

[43] As Paoli and Reuter (2007) mention geographical proximity is not sufficient in itself to explain which ethnic minorities have a prominent role in wholesale drug trafficking. Other factors, such as lax enforcement in home countries, low socio-economic status and cultural marginalization, need to be considered as well.

[44] Second-generation immigrants are individuals who are born in Belgium or the Netherlands and who have a least one foreign-born parent.

three he was abducted by his father and taken to Tunisia where he lived for 21 years (1971-1992) prior to returning to the Netherlands. Noah was arrested in 2000 for smuggling steroids into the Netherlands when he came back from a trip to Tunisia. He said that he obtained the AAS at a local pharmacy in Tunisia. In addition, there were several other indicators which suggested that part of Noah's PIED sources were located in Tunisia (e.g. confiscated packaged coming from Tunisia). In 2003 Noah's father was also arrested for bringing AAS to the Netherlands from Tunisia. Further, the data indicates that Tunisia is an important source country for the Belgian and Dutch market. Tunisia is known for its lax regulation concerning PIEDs, resulting in easy access and availability of these illegal substances. So, while exceptional, in some cases connections may be found between ones ethnic background, the lax regulation of the dealers' home country, and the type of PIED that suppliers import and/or traffic.

5.5 Conclusion: what makes the PIED market so special?

The data indicates that the 'typical' PIED dealer is male, Belgian or Dutch (depending on the country of residence), has a legal profession, and is approximately 35 years of age. The fact that the fitness industry and other physical professions (group one), or better said the general gym environment, plays a dominant role in the PIED market is consistent with previous studies (a.o. Koert & Van Kleij, 1998; Snippe et al., 2005; Striegel et al., 2006; Paoli & Donati, 2014). Likewise, the involvement of the other dealing groups is in line with the research of Paoli and Donati (2014). Nonetheless, an important difference between the Dutch and Belgian market, is that in Belgium PIED suppliers from the second group, in particular physicians, are more frequently involved. One reason for this is the disparity in medical cultures in Belgium and the Netherlands; of particular significance is the difference in general guidelines and the attitude of physicians (and patients) towards prescribing medication.

Importantly, in contrast to the work of Paoli and Donati (2014) and that of others, an essential element found in this research is the market *culture* in which these PIED dealers operate. While I agree with the view that the embeddedness of PIED dealing networks as legitimate social networks is critical for understanding this illicit market, I suggest that it ultimately comes back to the type of market, or the 'nature' of the product, we are dealing with. Substances always have cultural values invested in them (McDonald, 1994; cited in Milhet, 2011: 1). The culture of a specific market covers the idea of "rules of exchange", and how market actors are allowed and expected to cooperate and compete in the market (Aspers, 2011). Cultural factors may include the way PIED users and suppliers communicate or 'talk' and the way in which dealers operate in this illicit market. For instance, the overall fitness and lifestyle context, in which PIEDs are embedded, are important for understanding PIED using and dealing subcultures, as it influences the way in which PIEDs are distributed. It seems that

many PIED dealers were already devoted to a gym, sport, medicinal, or other subculture before becoming involved in dealing. The sale of PIEDs involves more forethought and health related expertise than other illegal drugs and specific knowledge is needed to participate in this market. Therefore, illicit PIED markets may differ depending on, for example, the sort of product (e.g. steroids or weight-loss drugs) and the reasons for using (e.g. building muscle or losing weight). All these factors influence the way in which PIED markets are structured and organized. This point will be further explored in the next chapter, using bodybuilding as a case study.

Chapter 6

‘Muscling your way up’:

Exploring the cultural contours of the PIED markets amongst bodybuilders

> *It is not simply that the user must purchase his drug supply from the sellers to consume the drug, but the user and seller are largely indistinguishable; there is no clear-cut boundary between them. […] Selling and using involve parallel activities and association. The seller and the user inhabit the same social universe* (Goode, 1970: 254-255).

In his book ‘the marijuana smokers’ Goode (1970) explains how the selling of marijuana takes place amongst many participants and on a variety of levels. He argues, however, that the reason an individual sells - whether it be once, occasionally, or frequently and specifically for a profit - is determined predominately by his or her involvement with the drug itself, within the drug subculture, and with others who consume the drug. Goode (1970) suggests that selling marijuana to some degree presupposes involvement with the marijuana subculture; in this way selling has become an indicator of one’s involvement with the drug subculture. Following this line, this chapter will explore the importance of social and cultural factors in the formation and development of PIED dealing networks. In contrast to the dominant position expounded by sport officials, the media and government agencies - which hold that PIED dealing networks are in the hands of ‘mafia-type’ organized crime and financially motivated individuals -, I will show that PIED dealing networks may often be the product of social networks, existing of ‘friends of friends’, wherein the consumption and even sale of PIEDs is normalized and stems from the individuals’ involvement in particular subcultures. To highlight the role of social and cultural factors Dutch and Belgian bodybuilding has been adopted as a case study.

This chapter will account for a variety of attributes that aid in explaining why certain people involved in bodybuilding may begin to deal PIEDs. Specifically, I address the process of the cultural normalization of PIED use and supply within bodybuilding, the embodiment of cultural knowledge and the different motives for dealing PIEDs. Based on these findings, I develop a typology

of PIEDs dealers, which accounts for the ways in which both socio-cultural, and market forces work together in the development, formation and sustainment of PIED markets. The bulk of the data presented in this chapter is a product of the ethnographic fieldwork and the qualitative interviews undertaken in this course of this research.

6.1 An 'act of friendship': the cultural normalization and neutralisation of PIED use and supply in bodybuilding communities

PIEDs, and in particular steroids, are strongly associated with bodybuilding. In the media steroids are often referred to as 'bodybuilding drugs' and competitive bodybuilders together with elite athletes are one of the first, and largest using groups in the PIED market (a.o. Delbeke et al., 1995; De Boer et al., 1996; Meinik et al., 2007; Kanayama et al., 2008, 2010; Paoli & Donati, 2014). Importantly, the 'largest' group in the PIED market does not refer to the number of participants, as bodybuilding in Belgium and the Netherlands only constitutes a small part of the general population, but rather refers to the *sheer amount of PIEDs consumed per individual*. For example, Paoli and Donati (2014) found that while bodybuilders only represent 31% of the users in Italy, they account for 55.2% of the total PIED market. Thus, while a growing consumption pattern cannot be noted per se, one may speak of an acceptance of PIED use within bodybuilding on the basis of the quantity of consumption (Monaghan, 2001; Kartakoullis et al., 2008). Indeed, steroid or PIED use is not only common practice amongst bodybuilders but as Monaghan (2001: 39) explains:

> *[T]here are differences between competition and non-competition bodybuilding, natural and non-drug tested competitions, and types of competitor (e.g. Physique and Figure-Fitness). Drug use may therefore be considered more or less appropriate depending upon various orientations to bodybuilding. Nevertheless, bodybuilders' shared goal of 'enhancing' physical appearance results in a shift in conception so that drug use is a conceivable possibility for all participants. This, alongside the everyday taken-for-granted nature of drug use, renders drug-taking (or more specifically, the instrumental use of physique-enhancing drugs) a normalised practice among bodybuilders.*

This suggests that PIED use is a normalized practice within the bodybuilding subculture, even amongst bodybuilders who limit their consumption or all-together abstain from using these products. Before we continue it is important to note that the argument being made here is not that PIED use has normalized amongst the general population, but rather focuses on a micro-social level in an

attempt to understand how PIEDs are perceived of, and consumed and supplied within bodybuilding subcultures specifically.

While the supply, purchase and use of PIEDs is considered illegal by society at large, these activities are a normal feature of 'the everyday life' (South, 1999) of many bodybuilders. Throughout the interviews and fieldwork it became clear that many Belgian and Dutch bodybuilders have used or knew someone who used steroids and/or other muscle enhancing drugs, 'supplied' or 'shared' PIEDs to friends, and/or personally were familiar with someone who could supply these products. Indeed, in the bodybuilding communities included in this research a process of 'cultural normalization' (Pearson, 2001) has taken place regarding both the use and supply of PIEDs. Many Belgian/Dutch bodybuilders spoken to regarded the use of PIEDs as no different as the other aspects of bodybuilding (e.g. training, nutrition). The following quote illustrates the cultural acceptance of PIED use within this subculture:

> "S: It is just a complete life-style. It is not something separate [using AAS]. You get up with it [AAS] and go to bed with it [AAS]. So you do think about it [AAS] but it is no different than all those other things [e.g. training]. *It is just a complete life-style and that [using AAS] belongs to it.*" (Sacha, Belgian helper, interview)

> "F: Steroids, steroids, steroids: that is what everybody is always focused on when it comes to bodybuilding. But they seem to forget that bodybuilding is hard work. You need to train; you need to watch your diet… It is not easy. And steroids, well they help in that process, but *like the other things* [training, nutrition, etc.] *it is just something you do to reach your goal.*" (Flynn, user, field-notes Dutch bodybuilding competition)

Similar findings regarding the normalization of drug use have also been established in research on doping use and patterns of doping in cycling. During the decades before the Festina scandal, for instance, doping use had become part of an elite rider's everyday life (Brissonneau, 2007; Waddington & Smith, 2009). In other words, doping was the product of a secondary socialization process (Berger & Luckmann, 1986) through which the athlete learned step by step the standards, the know-how and the language of his or her environment. In this domain, cyclists were encouraged to "over-conform" (Coakley, 2009) to the norms and values of (elite) cycling subculture that embraced the consumption of a variety of PIEDs, including illegal ones, to "do the job" (Fincoeur, 2013b). Over-conformity involves action that goes beyond what is acceptable, for example doping use or continuing to train even when it causes or intensifies pain and injury. As with cycling culture, the general fitness and lifestyle context in which PIEDs are embedded is important for understanding PIED using and dealing

cultures. Specifically, within bodybuilding, steroids and other PIEDs are often not perceived as something deviant or transgressive but rather are considered to be conforming to the norm and just one of several components, such as training and nutrition, when enhancing your performance and/or appearance (Monaghan, 2001; Keane, 2005). Therefore, over-conformity may actually be an indicator of normalization. Indeed, as Jay Coakley (2009) explains, while over-conformity means that specific deviant or criminal behaviour has become 'normalized' or 'conforming' to the norms and values in high performance sport cultures, at the same time it remains a deviant or a criminal act in the surrounding society. So, while the use of steroids or other PIEDs is seen as a normalized practice within bodybuilding (conformity), the general population still considers this as deviant behaviour or as 'over-conforming' to the norms and values of bodybuilding.

However, the normalization of PIEDs within bodybuilding subcultures (Monaghan, 2001, 2013) goes further than consumption. As Potter (2009: 69) argues if the drug is normalised, then supply of the drug *from the perspective of the user* must also be normalised as the drug being used has to come from somewhere. Indeed, several scholars (a.o. Parker et al., 1998; Hough et al., 2003; Potter, 2007, 2009; Chatwin & Potter, 2014) have shown that for certain drug using populations, drug dealing in a sense has been normalized in a similar fashion as the normalisation of drug use. Similarly, it became clear throughout this research that a wide variety of PIEDs are easily accessible through these subcultural groups in the Netherlands and Belgium. Likewise, research suggests cycling teams supported, encouraged and often even arranged doping products for their riders. Doping use was thus not only culturally accepted, but also organizationally approved as they circulated freely within the cycling teams and were even directly provided by the medical and para-medical staff (Fincoeur et al., 2014).

A good illustration of the normalisation of PIED use and supply within bodybuilding subcultures is evidenced by a Dutch case which took place in 2000 (Case 39 NL). The customs service confiscated a shipment of cosmetics arriving from Spain, which contained 21.000 AAS ampoules and tablets. The main suspect, Allen, and his brother, Lucas, had their phones wire-tapped throughout the duration of the trial. At one point Allen contacted his brother to let him know the trial was likely not going to end well for him. Lucas then contacted one of Allen's main clients, Caroline, to inform her about the situation and to ask her if she is in need of any products. The official who wiretapped the conversation reported the following:

> "Caroline mentions the following items, two boxes of Sustanon [type of AAS], a box of Test [testosterone]. Lucas mentions that he does not have any of these items. Caroline continues, two vitamin packs, ten times Animal Pack, two fat burners, one liquid fat burner, Super Diet Maxi jar, four times Oxymetholone [type of

> AAS], vitamin B pills. Lucas mentions that he does not have the last two items. Caroline continues, two times MaxiCreatine, two [fat]burners grapefruit, [fat]burner punch flavour. The last one Lucas doesn't have. Caroline responds: You don't have Dianabol [type of AAS]? But I need eight of them. She continues, one box of vanilla bars, five boxes Naposim [type of AAS], 6 boxes of Proviron [type of AAS], 6 times stacker and a fat measurer. Lucas does not have a fat measurer. […]" (Case 39 NL, wiretapped conversation)

While Lucas does not have a lot in stock, as most of the illegal products have been confiscated, the quote illustrates how the illegal components of bodybuilding are treated no different than the legal aspects of bodybuilding[45]. In the same order and from the same dealer Caroline attempts to purchase both the illegal and legal products she needs for her clients, as if there is no difference between vanilla protein bars and Dianabol (type of AAS). For Caroline, and many other dealers, supplying these illegal products appears to be a normal part of the total service they are offering to their customers: how to pose during bodybuilding competitions, how to prepare for competition, how to eat, etc. Thus, as a result of the normalization of PIED use, the supply of these substances is considered an illegal, yet legitimate practice within bodybuilding and it is in this gap, referred to as the "informal economy" (Webb et al., 2009), in which PIED suppliers operate. A gap exists between what society perceives to be legal, as specified by laws and regulations, and what bodybuilders consider legitimate, as specified by their subcultural norms, values, and beliefs.

Moreover, several studies on drugs (a.o., Parker, 2000; Coomber & Turnbull, 2007; Potter, 2009; Taylor & Potter, 2013) have shown that users do not perceive these dealers as 'real dealers', nor do the dealers themselves, but, instead, tend to distinguish between 'real dealers' and friends or 'friends of friends', from whom they get their drugs. Likewise, in this research many of the participants did not consider themselves as 'real dealers', but as someone who was simply helping out friends and acquaintances with their training needs (see also Maycock & Howat, 2007; Kraska et al., 2010). This becomes clear in the following example quote from Eric, a Dutch dealer:

> "E: What I do is give advice on this and that. *If it is a friend who says, "I need this", I say, "okay friend I will arrange this for you*. I know a place. You don't have time to get it? No problem I'll pick it [PIEDs] up". And then I just say, "you need to pay this amount'. So that's why, *I just have certain friends*… like ten not more. And more I don't need, because it does nothing for me but trouble. It is, as you said then I start to run a risk, then it becomes trade,

[45] All other products she mentions are legal supplements (e.g. fatburners and MaxiCreatine).

> then they will start to say, "you have to go to Eric"." (Eric, Dutch dealer, interview)

Nevertheless, this is not to imply these activities are openly discussed with strangers. In particular due to the negative label society places on PIED use, bodybuilders are often initially not inclined to share their PIED using and dealing experiences. Rather, many of the transactions between seller and buyer are based on personal relations and "some form of friendship" (Sandberg, 2012a) is needed to contact the dealer in order to obtain PIEDs. As the following two quotes illustrate, arranging PIEDs for one another appears to be a social norm within bodybuilding:

> "KvV: Did you ever arrange steroids for others?
> S: I used to get it [AAS] for friends. I did that a couple of times. But *I never really made a profit or something, just for friends*." (Sacha, Belgian helper, interview)

> "A: At gyms you always knew one or multiple people who sell. Most people use themselves, and if approached in the right way, they are always prepared to do it [sell]. Maybe they have never sold before in their lives, but if you ask them they basically automatically drift into it [dealing PIEDs], *calling it a "service to friends"*. "I deliver a service to you*", maybe they think that it is easy money, but they often don't even consider themselves as dealers*. You just sell something to a buddy and you just ask 50 euros extra. In that way you also financed part of your own consumption." (Alex, Dutch helper, interview)

Similar findings can be found in the research of Maycock and Howat (2007) who note that new weight-trainers, including bodybuilding subgroups, were unable to access PIED dealers without establishing contact and developing a relationship. Unless the dealer already knew the weight-trainer, this process took time as the supplier often undertook a risk assessment of the potential user. This was especially true for those dealers higher-up in the distribution chain. Thus, within bodybuilding communities the relations between seller and buyer are often based on high levels of trust and mutual respect, which are often the product of cultural affiliation and assimilation. Subsequently, PIED dealers are often not far removed from an individual's PIED use (e.g. being part of their everyday life) and PIED networks are more likely to exist of 'friends' or 'friends of friends'. This finding is well supported in the literature as, for example, de Boer et al. (1996) found that 38% of Dutch bodybuilders obtained their PIEDs from a trainer or coach. Moreover, Boos et al. (1998) found that 56% of the recreational weight-trainers obtained their PIEDs through an acquaintance and

53% from a fellow athlete. More recently, the Dutch Health council (2010) found that 32.7% of users obtained their products through friends, family or acquaintances, and 36.4% of these users mentioned the gym as their source location. In short, many users seem to have a relatively close connection to their supplier, and seem to participate in the lives and environment of the suppliers, and vice versa.

However, as Potter (2009) notes in his review on retail level drug distribution, dealers also adopt this term to avoid the 'dealer label' or the social stigma that comes along with this label. These 'techniques of neutralization' (Sykes & Matza, 1957) allow drug dealers to redefine their activities in ways that minimize the apparent immorality and illegality of said activities. For instance, in this research PIED suppliers often mentioned that, "steroids should not be illegal anyway" (Nathan, Dutch producer & distributor, Dutch bodybuilding competition) or "I kept them [bodybuilders he supervised] away from dangerous dealers who sell crappy steroids" (Chris, Belgian ex-distributor, Belgian bodybuilding competition). Further, while the idea of friendship clearly has some meaning or function, the denial of real-dealer status and the cultivation of friendship can be seen as a risk-management technique (Potter, 2009: 65). Trust is a core component in criminal networks in general as it reduces certain risks when dealing with illegal goods, such as lowering the chance of attracting police attention or being ripped-off (a.o., Williams, 2001; May & Hough, 2004; Morselli, Giguère & Petit, 2007; Potter, 2009).

Criminal cooperation is often embedded in strong internal relations, such as existing friendly, familial, or work-related relationships, to ensure the smooth running of their operations (Van de Bunt et al., 2014). Therefore, these 'friendship-based' relations serve as a social control tool that protects both users and dealers from illicit market risks (Potter, 2009; Belackova & Vaccaro, 2013). As the quote by Eric mentioned above suggests, supplying to outsiders "runs a risk as it then becomes a trade", implying that being friends helps with keeping a low profile and avoids drawing attention from the police (See also Maycock and Howat, 2007). A final point Potter (2009) makes is that that somewhere along the chain of distribution there is contact with the 'real' drug market. So, while these suppliers may not see themselves as dealers, or may be protecting users from real dealers, they may get drugs from people who are market oriented or 'real' dealers. While this is certainly true for some PIED dealers, this argument does not necessarily hold up in the illicit PIED market. Rather, many PIED dealers within these communities actually produce their own steroids and/or obtain these drugs through medical sources (e.g. physicians or foreign pharmacies) (chapter 5). In addition, the Internet has facilitated these direct trades. The Internet provides a safer option as exchange can now occur directly between producer/distributor and user, eliminating the need for other dangerous criminal groups for protection or to facilitate sales (Martin, 2010).

In summary, at the lower levels of the PIED market, these transactions between supplier and buyer may be best considered as an "act of friendship and trust" (Parker, 2000). Both dealers and users often described the selling and purchasing of PIEDs as a 'form of friendship': users obtained it from 'friends' and dealers provide a 'service to friends'. Not only is the use of PIEDs normalized, but also certain types and levels of dealing are seen as less deviant or problematic. The 'average' bodybuilder has not only used or knows someone who used PIEDs at a certain time of their life, but has also supplied or knows someone who has supplied PIEDs. Some bodybuilders use more PIEDs or supplied these illegal substances on a large scale, while others used or supplied rarely if at all. However, even among this group of seldom and non-users, the use and supply of PIEDs was regarded as an entirely normal practice. For many bodybuilders using and supplying PIEDs is part of their lifestyle choice and is regarded as a normal feature of their 'everyday life' (South, 1999), despite of whether others approve of it or not. Finally, another indicator of normalization is being 'drug wise', regardless of an individuals experience with drugs, and the social and cultural accommodation of drug use in the wider society (e.g. the accessibility of drugs) (Measham et al., 1994; Parker et al., 1998; Measham, 2004; Stevens, 2014). It is to this we now turn.

6.2 The role of 'cultural knowledge', bodily capital and experience in user-dealer relations

PIED dealers supply to a niche market in which cultural knowledge is not only essential for entry, but for entrepreneurial survival. One of the most basic forms of knowledge to enter the illicit PIED market is 'ethnopharmaceutical knowledge' (Monaghan, 2001). Indeed, many different aspects must be taken into consideration when selling PIEDs, such as the type of product being sold, length of time on PIEDs, time off between cycles, reasons for varying dosages, and the differentiation of goals for consumption (e.g. see Monaghan, 2001; Snippe et al., 2005). For example, an AAS cycle may involve multiple types of steroids and other muscle-enhancing drugs, which vary in strength and prescribed amount, all of which may have different effects on the physical appearance or performance of the user. The following two examples highlight the product knowledge of PIED dealer's:

> "C2: The large-scale dealers in this case usually have a certain product knowledge. *This knowledge may be needed to build a customer base, and is a result of their sport career*. As such, Steve, James, Gijs and Xavier [PIED dealers] are very well aware of the products needed that enhance their performance. A couple of people are also *actively looking on the Internet to find certain information* about these products." (Case 2 BE, notes in file)

> "T: The knowledge and experience of Victor [PIED dealer] was highly exaggerated. *But when Noah* [PIED dealer] *coached you, well, than you knew that it was good*. That guy knew absolutely everything, and he also wrote about it in his magazine. He purposely wrote about certain medications he came across that were real crap. Just to alarm others [about the potential dangers of AAS use]." (Thijs, Dutch official, interview)

The knowledge of users and dealers is predominantly based on personal experience and anecdotes, and includes information on methods to reduce or avoid adverse effects (Kimergård, 2014b). Nevertheless, all participants, officials, users and dealers note that there is considerable variation in knowledge levels amongst dealers, and for these reasons participants often mentioned that it was crucial that "you do research when you start using steroids. Don't just believe your dealer, also read on forums and stuff before you do anything" (Eric, Dutch dealer, interview). Indeed, the Internet is also a frequently consulted source for users (de Hon & van Kleij, 2005; Cordaro et al., 2011; Kimergård, 2014), and is an important source particularly when it comes to finding information about the types of AAS that are available on the illicit market (Kimergård, 2014).

In any market, whether legal or not, knowing the basics about your product is critical to selling it effectively. Therefore, dealers generally will have a basic knowledge of PIEDs in order to have successful sales. An important difference, however, is that the knowledge of these dealers in bodybuilding communities often goes beyond just ethnopharmaceutical knowledge, but extends to knowledge regarding exercise, nutrition, physiology and bodybuilding in general. In bodybuilding specifically, the provision of information is, in particular, highly valued, as knowledge is one of the key components for bodily progression[46] (Monaghan, 2001). These dealers often possess knowledge of various training regiments and nutrition programmes, and are able to analyse the ways in which muscles should be stressed for optimal results. For instance, dealers pointed out that they regularly had to provide a host of 'supplementary services' to customers such as providing nutritional advice, cycle schedules, post care treatment and so on:

> "S: They [dealers] often can get everything. *They are all guys who are in it* [bodybuilding]. Often the guys who want to buy also want information, a nutrition schedule or how to use it [AAS]. You really *need to have knowledge*. And look, Nathan [PIED producer/distributor] is very good at that. At Nathan´s you can get

[46] Other important aspects for ongoing muscle development are dedication, finance and genetics (Monaghan, 2001).

> everything, supplements, schedules, etcetera." (Stan, Dutch helper, interview)
>
> "T: That guy [his coach] *knows just everything*. He also has *so much experience in bodybuilding*. I just know with him that it is good." (Tony, Belgian helper, field-notes Belgian bodybuilding competition)

Indeed, many dealers that are connected to the bodybuilding industry become involved in this illicit trade in order to be able to offer their clients 'a complete package', and PIEDs is just one part of that package. Additionally, PIED suppliers often serve as a 'steroid mentor': injecting new users or teaching them how to inject, informing users what to expect from PIEDs and how to safeguard against health-related risks (Maycock & Howat, 2005, 2007; Kimergård, 2014b). For example, Sacha mentioned that his first coach not only provided his AAS but also taught him how to inject properly, which AAS to use for what goal and how to prevent or minimise health risks. These dealers do not only contribute to the bodybuilding subculture due to their ability to provide (knowledge on) PIEDs, but also through a process of mentoring, socializing and educating within bodybuilding (Maycock & Howat, 2007). Therefore, a certain competence and skill is necessary to operate in this illicit market.

The narrative that I often encountered during my fieldwork was that dealers started as users and were guided themselves by one or multiple steroid mentors: someone who taught them about all aspects related to bodybuilding. These dealers often received 'a complete package' from their mentors, and are now providing that same 'service' to others involved in bodybuilding. For example, Rolf, a Belgian ex-distributor, coached Chris, also a Belgian ex-distributor, during the time he was competing in bodybuilding. Rolf, a successful bodybuilder himself, instructed Chris around his nutrition and training, and also supplied him with supplements and PIEDs. At a certain point in his bodybuilding career, Chris began to instruct others, and took on the role of coach when he opened up his own gym. Part of this coaching was to give advice on and to supply steroids. During that time Chris was so popular amongst bodybuilders that people were standing in line to be trained by him. As a result Chris began to distribute on a larger scale; as his clientele grew bigger, his illegal business grew as well. Thus, PIED dealers are often taught the norms and values related to bodybuilding from a steroid mentor, and eventually become one themselves, transferring their knowledge to relevant others (Kraska et al., 2010).

However, not everyone who happens to go to the gym may contact these (upper-level) dealers. Users themselves need to obtain a certain level of knowledge in order to be considered a part of the bodybuilding subculture, which is often a prerequisite needed to contact particular dealers. For example, Chris was only willing to talk to me because I was introduced by accepted

members who vouched for my intentions. Equally important was the fact that I was familiar with the 'cultural etiquettes' of bodybuilding. For example, during interviews it was imperative that I first covered other elements of bodybuilding (e.g. the users' training experience) before addressing the topic of steroids and other muscle enhancing drugs. In that way I was able to show that I had relevant knowledge, recognised their expertise and hard/work, and understood that other aspects were just as important, maybe even more so, than using PIEDs in bodybuilding. Many bodybuilders in this research also expressed their irritation of (young) users who wanted or started to use AAS, while it was clear that these individuals could improve their fitness goals (e.g. increase muscle size) with other legal means (e.g. training).

Monaghan (2001) likewise describes how experienced bodybuilders view non-compliant marginal members with derision. For example, one of his contacts, Mick, says the following about new comers to bodybuilders who take AAS from day one: "*Absolutely ridiculous. They deserve all the problems [side-effects of using] they get. Because they haven't got a clue about training, and you don't respond well if you take it straight off*" (p. 113). In a similar vein, suppliers mentioned in this research that these "inexperienced users" also deserve to get no special treatment from dealers. The argument from the suppliers' perspective is that if these users do not take the time to research bodybuilding, or PIEDs, then why would the dealer go above and beyond in helping this group of users? Some dealers mentioned that they either would not supply or would give less service to users that had little knowledge of bodybuilding or training in general. These users thus do not obtain the same quality of treatment as they are considered outsiders or strangers. For instance, Eric, a Dutch dealer, mentions that he would sell steroids for a higher price or of a cheaper quality to people that did not take the time to research this market, and just wanted a "fast way out" (Quote Eric). Therefore, as Jacques and Wright (2014) note in their research on drug dealers, the social status of the user and their social distance from the dealer are important factors for determining the market behaviour of dealers.

Another important aspect of dealing and purchasing PIEDs is the size and shape of the body. Bodybuilding is a "body-centred universe"; for bodybuilders their body is the template and epicentre of their life; "it is their asset" (Wacquant, 1995). When entering a gym, when going to a competition, everything revolves around sculpting the perfect physique (Monaghan, 2001). Bodybuilders may be conceived of as "holders of and even entrepreneurs of bodily capital" (Wacquant, 1995: 66). 'Bodily capital' (Bourdieu, 1986; Wacquant, 1995) describes the value attached to people's appearance, attractiveness or physical abilities that may be exchanged for other forms of economic, social or cultural capital (Hutson, 2013: 64). In the 'physical culture' of bodybuilding the body itself is an essential factor in the functioning and status of an individual (Monaghan, 2001, 2002). This corporeal credibility

engenders trust among their fellow weight-trainers and a belief in their health or other bodybuilding-related knowledge (Hutson, 2013). Thus, being big, proportionate, muscular, etc. becomes synonymous with 'being knowledgeable' (Kraska et al., 2010). In the following two examples it becomes clear that both users initially were attracted to their suppliers due to their appearance:

> "U: I know Noah [large-scale distributor] from the gym. I really looked up to him because over two years he became a lot heavier [in the sense of more muscles]. Back *then he was "the bear" of the gym*. […] I consulted Noah about what would be the best. In my eyes *he knows a lot about it and he also pointed out the risks*. I started with some Stanozolol tablets. This was according to Noah the "lightest" steroid". He also advised me about the amounts […]." (User, Case 1 NL, interrogation)

> "KvV: Do the people that deliver products physically look good, or can it be just about everyone?
> C: Well, *most of them look pretty good*. They *also use quite a bit themselves*. And the guys that train here […] well they basically are advertisement for their own products. […] And well with Nathan [Dutch producer & distributor]… Nathan has to have it from his athletes [laughs] [implying that he is not in shape]." (Chris, Belgian ex-distributor, interview)

It is evident in these exchanges that the body of these PIED dealers, in particular on a retail level, facilitates their dealing activities. Therefore, the body of these suppliers can function as a tool to market or promote their illegal businesses, as their appearance is visible proof that their methods and products are working. Roy, a Dutch producer and distributor, mentioned the following about dealers that supply PIEDs in the bodybuilding or gym environment:

> "R: Look, when you are in the *active trade*, like friends of mine who own a gym, for them it is *important to stay lean* [a trained body]. So they are trained. They just have to. When I still went to [bodybuilding] events with Leroy, for example the FIBO [popular bodybuilding event], I also had to make sure that I was lean. You really would go on a diet so make sure you had a couple of good abs because they [the customers] pay attention to that. Look and when, like now [since he started to operate large-scale], *I don't have to be 100 percent fit anymore*." (Roy, Dutch manufacturer and distributor, interview)

These dealers of course do not only have a well-trained body to advertise their illegal product, but also are in shape to advertise the legal goods and services they are offering. However, not all dealers within the gym environment have a well-trained body, but rather it seems to apply predominately to those who are in direct contact with the user (often retailers). As Roy mentioned above, he no longer has "to be 100% fit" as he does not have as much face-to-face interaction with his clients. Likewise, Belgian and Dutch officials mention that in many cases suspects, in and outside the gym environment, were not in particularly good shape. For example, Vera notes:

> V: Some of them are muscular but often when you see the picture you think, "that one?" "Well it is clear that he doesn't use [AAS] himself [laughs]." (Vera, Belgian official, interview)

This may be in part explained by the rise of the Internet as a medium for sale. Due to the Internet many dealers no longer have direct, or physical, contact with their clients, and therefore it is not as necessary to be in particularly good shape. Moreover, as we saw in the this section, being in shape is not the only criterion for being a successful dealer within bodybuilding, but having certain (cultural) knowledge determines the status of a dealer as well. Indeed, I met several dealers who were not in particularly good shape, but instead had a high status due to their knowledge and experience in bodybuilding. Finally, there are many PIED users and dealers who are not involved in the gym environment or other 'physical cultures' at all, such as physicians or vets. For these individuals the appearance of either the user and/or dealer is most likely less significant and, instead, they are more interested in the results of the products. For instance, an AAS user will consult a physician because of his/her medical knowledge and is less concerned with his/her physical appearance.

The provision of information by dealers within the bodybuilding subculture goes beyond just 'steroid knowledge', but also includes knowledge of the wider bodybuilding subculture. Dealers often developed high levels of knowledge and skills due to their participation in bodybuilding and other legal connections to the gym environment. Indeed, dealers within bodybuilding subcultures are often individuals who have gained a high status in the bodybuilding community due to their ability to provide knowledge (training, nutrition and PIEDs), the size of their body and their overall success within bodybuilding (Monaghan, 2001; Maycock & Howat, 2007; Kraska et al., 2010). Many of these dealers are aware of the know-how and the language of the bodybuilding environment, as they are personally and deeply engaged in this social activity. For these dealers their 'bodybuilding capital' is a form of cultural capital that may be converted into economic capital (see also Sandberg (2008) on cannabis dealing).

6.3 The different motivations to deal PIEDs: the importance of 'transcending' pure economic exchange

Profit levels varied between PIED suppliers, with some earning just enough to cover (part of) their own consumption, while others reported that they made enough money for luxury consumption and enhanced lifestyles. For certain dealers profit was clearly an important driver, either from the beginning or later on in their dealing career as there business expanded. Nevertheless, profit was not the sole motivating factor and was often even secondary and tertiary to others. Rather, many (lower-level) dealers involved in bodybuilding are driven by motivations aside from personal profit stemming directly from their socio-cultural embeddedness in bodybuilding. Similarly, Paoli and Donati (2014) suggest in their research that the more closely connected suppliers were to organised sport, the more non-financial reasons (e.g. sport success) played a role for being active in this market. For instance, sport physicians who supply PIEDs to elite athletes so that they are able to compete effectively or to avoid harm (e.g. medical supervised doping better than self-medication by athletes) (Hoberman, 2002, 2014). In this research such dealers were less interested in making profit and more interested in providing a good service and/or to personally excel in bodybuilding. The following two quotes illustrate this point:

> "C: Looking back I did not earn enough profit on it, because I just wanted to be there for my own athletes. I did everything for my own athletes. I just wanted those guys to have good [quality] stuff. And so *I did not want to ask too much* [money] because then there was the risk that they would buy garbage or fake stuff. I just wanted *those guys to buy good stuff* and at the same time that was a good *advertisement for me and my gym.*" (Chris, Belgian ex-distributor, interview)

> "J: […] in general *people who are involved in the steroid trade want to do nothing else but that* [dealing in steroids]. They want to earn their money with sport [bodybuilding]. And there are many of those people. *Even if they don't earn anything, or even when they have to pay extra themselves, they still stay active*. So, that pushes the margins, even for the big guys." (John, PIED expert, interview)

As the first quote illustrates, Chris kept his price low so customers would not go to another dealer who might sell poor quality AAS at a cheaper price. He could guarantee the quality of his products because he trusted his source and because he 'tested' the products himself. Chris later mentioned that he once experienced severe side effects from a particular brand and since then did not sell this

product to others. Some lower-level dealers[47] also maintained that the desire to buy or produce high quality AAS was one of their reasons to enter the market. For example, a friend of Alex, a power-lifter, started to produce AAS because it saved him money and it also allowed him to control for the quality of the manufactured AAS. Another example is Roel, a Belgian dealer, who started to deal at his local gym to control for the quality of PIEDs. Roel started to buy and sell 'high quality' PIEDs[48] to protect his own health and that of his friends, and since then has expanded his dealing network from just a few friends to other weight-trainers that come to his gym. Several users in this research also confirm that this 'quality check' was one of the main reasons why they preferred to buy PIEDs from a personal contact. Similar findings can be found in relation to other drug markets (a.o., Murphy et al., 1990; Hough et al., 2003; Decorte, 2010). For instance, Decorte (2010: 273) explains that many Belgian and Dutch cannabis users started to cultivate their own cannabis as they became dissatisfied with the strength and the quality of the cannabis they used to buy from Dutch coffee shops. The author shows that the 'quest' for a product of higher quality was an important reason why users start to grow their own marijuana. Likewise, for PIED dealers it is often the intangible social and intrinsic rewards of distributing quality AAS to their subcultures, and it is not just about the financial profits.

Aside from benevolent rationales, the data also indicated that participants were often involved in the supply of PIEDs to sustain their own consumption (e.g. to reach high levels of bodybuilding) and/or to help friends, sport buddies and/or fellow athletes who wanted to cosmetically or athletically improve themselves in order to reach their (athletic) goals. For example, in the following conversation with Ray, a Dutch helper, it becomes clear that supplying PIEDs to cover his bodybuilding-related costs was part of his motivation:

> "KvV: Did you ever sell it to others?
> R: Well, *dealing is a big word*, if people ask me, but I am not actively looking for it.
> KvV: Do you charge extra to those people?
> R: Well, sometimes. *It depends who it is*, not with friends. But sometimes I do ask extra. Bodybuilding is such an expensive sport, especially when you do cycles, so it is *nice to have something extra once in a while*. Most of my money goes to the sport." (Ray, Dutch helper, field-notes Dutch bodybuilding competition)

Several dealers confirmed that a reason to be active in this market was to cover the costs of their PIED use, or better said, the general expenses of bodybuilding.

[47] Lower level dealers are PIED suppliers who sell directly to PIED users and who also referred to as 'retailers', 'pushers' or 'street level dealers'.

[48] Like Chris, he relates high quality to having a trusted source, gaining muscle-wise and having no side effects.

All of the supplements, massive amount of foods, and other training expenses can become quite an investment. For example, Sacha mentioned that when he used to compete on a high level in bodybuilding he annually would spend around 15.000 to 20.000 Euros, excluding his food bills, on bodybuilding (see also Monaghan, 2001). Similar findings were highlighted in the research of Kraska et al. (2010) who maintain that the involvement of PIED dealers connected to bodybuilding and the general weight-training community is twofold. On the one hand producing and dealing is a way to support their sport activities (a "nice side-benefit"), on the other hand it is considered a type of "community service" to help those who share the same general goal of body and performance enhancement.

Moreover, several dealers mentioned that the additional tasks described earlier prevented them from pursuing a wider more lucrative career in dealing PIEDs. Users seem to expect a certain level of 'customer care' after the transaction has occurred and if this is not delivered they will often go elsewhere to obtain their products. For example, users may contact their suppliers for additional information if something goes wrong during a cycle. In Noah's case, for example, while he was being investigated by the authorities and had his phone tapped, a user called with concerns about some side effects he was experiencing. The user mentioned that, after consuming Clenbuterol, he was extremely warm, had a very rapid heart and spent the night in the garden to cool off, as he was afraid he was "going to explode". The user was particularly concerned as he mentioned that he did not experience these side effects after using testosterone. Noah reassured the user and explained the side effects of Clenbuterol, and informed him that it can indeed give you a warm feeling, but "not to worry". During my fieldwork and in several cases it became clear that users would contact their dealers in order to retrieve information, advice or other services before, during and after a PIED cycle. For small-scale dealers these additional tasks associated with dealing, and their own personal investment in bodybuilding, combined with the amount of time and work necessary to be a wholesale PIED dealer, may prevent them from going large scale. For example, one Dutch supplier named Stan suggests that it is sometimes easier to have a legal job rather than to sell PIEDs:

> "S: I just do a lot of overtime [working as a security guard] to cover all the costs from bodybuilding. *It sometimes seems much easier than supplying steroids*. You don't have the trouble, you know. I just make my hours, get paid and go home. When I sell steroids to people, they want advice, want to be coached, call me when they, for example, get worried about the side effects. It does not stop after selling that stuff." (Stan, Dutch helper, interview)

As other scholars have shown in relation to other drug markets (o.a. Bouchard et al., 2009; Hammersvik, Sandburg & Pedersen, 2012), the increased workload increases challenges that are necessary to be a skilled drug dealer who wants to provide on a large scale. Subsequently, economic opportunities are inhibited by the very nature of bodybuilding.

As the data indicates, many dealers who are connected to the bodybuilding industry are motivated to become involved in this illicit trade in order to be able to offer their clients a complete package, which providing information and PIEDs is a part of. Naturally, when considering the illegal nature of this market, the ability to hide its illicit source and to make it appear legitimate in origin is essential. The legal activities of these dealers form the ideal cover for laundering the money they obtain from their criminal activities. As the following quote illustrates there are numerous examples of this:

> "A: A known underground brand in the Netherlands is for example Generic Supplements. The man behind this is Jasper [large-scale distributor and producer]. He studied chemistry, so *he also knows his stuff*. Jasper is also owner of Endurance [pseudonym], a well-known supplement brand. In that way he *can launder his illegal revenues*. Persistence [pseudonym] also sponsors a couple of big athletes, especially bodybuilders. Those athletes *get their legal but also illegal supplements for free*. Jasper also *coaches these competitive bodybuilders*. This story is just one example of many [He continues to mention several other examples]." (Alex, Dutch helper, electronic contact)

However, the growth of the illegal activities of PIED dealers is a result of the increasing success of their legal activities. Although profit plays a role for PIED dealers to be active in this market, it clearly is also a very social activity, giving PIED dealers the chance to maintain and extend their bodybuilding and other (sport) contacts. In addition, these dealers will have financial gains from supplying the 'whole package'; not only from supplying PIEDs but also from, for instance, offering coaching services or selling supplements. These monetary gains are, therefore, not solely market driven but likewise come forward from the dealers' participation in bodybuilding and the general gym environment. Think back to Caroline, who provided a complete service to her customers, or to the comment of Sacha who obtained everything, from advice to PIEDs, through his coach. It appears that securing a profit is a means to an end (e.g. being able to compete, 'getting big', providing a full service) as opposed to seeing it as a business opportunity (Kraska et al., 2010). Even when profit becomes the primary motive, it demonstrates how sociability can remain a core element of drug dealing (Taylor & Potter, 2013).

The provision of PIEDs at a lower cost and/or additional services beyond the point of sale, illustrates 'cultural reciprocity' whereby the economic transaction becomes less significant, forming only one aspect of an enduring contract between both parties. However, as Mauss (1966) points out 'gifts are never free'. For instance, the drug dealers in Sandberg's (2008: 614) research, did not only accumulate economic capital, rather dealing likewise augments "street capital and gives 'profit' in the form of honour or prestige in a street culture". However, as Sandberg notes these actors themselves do not necessarily cognitively realise this 'advantage'. While PIED dealers may not seek profit and are often willing to provide additional services, at the same time successful clients are physical proof of a supplier's expertise, coaching abilities, and products. When customers become successful, the suppliers, and often their gyms, gain status as well.

For example, while Chris did not charge his athletes much for the PIEDs and maintained he was selling in order to protect their health, at the same time having 'good athletes' was advertisement for his gym. Thus, while Chris did not have high profit margins, he expected his athletes to come out in his name. Subsequently when his customers became successful, he, as their coach, gained status as well. Several dealers mentioned the benefits of supporting well-shaped and successful bodybuilders as physical proof of their expertise. The quote above from Alex mentions that while bodybuilders get their legal and illegal products for free, Jasper, a Dutch PIED producer and distributor, expects that they will publicly owe some of that success to him and his gym and ultimately his brand name. Therefore, these drug dealers expect some form of reward for their inconvenience and risk (Coomber & Moyle, 2014). However, this frequently transcends direct material gains (e.g. selling above the costs) and instead is often symbolic (e.g. status, acknowledgement of expertise or social acceptance). It would appear then that selling drugs and providing additional services is not as 'free and altruistic' as it seems (Belackova & Vaccaro, 2013).

Moreover, refusing or being unable to reciprocate can also lead to a person being 'shut out' of that specific circle of friends (Belackova & Vaccaro, 2013). For instance, Chris expressed his annoyance with a former friend/customer Tim, a professional bodybuilder, who he felt had been disrespectful towards him. Tim decided to go to another coach after winning several competitions under Chris's guidance. At the first competition after Tim had switched coaches he came to Chris for advice, however, Chris said he did not feel obligated to help him in any way as he mentioned:

> "C: He [Tim] decided to switch and that is fine by me, but I mean *don't expect that I will still give you advice or do anything else for you*. That ended as soon as he decided to switch coaches." (Chris, Belgian ex-distributor, interview)

By switching to another coach, Tim had disrespected Chris. Chris lost honour and status in the bodybuilding community and Tim lost the advice and PIEDs provided by Chris. What is important to note here, is that as the cultural reciprocity ended so too did the economic relationship. Similar findings were highlighted in the research of Belackova and Vaccaro (2013) on marijuana users and retailers from North Central Florida. The authors indicate that users/retailers not only share (e.g. by passing the joint) but also are expected to reciprocate in the future. If an individual is unable to reciprocate, punishment for breaking the 'rules of sharing' followed; either by being completely shut out of the group or by being required to contribute financially.

With more market oriented dealers, when the transaction is over both parties will not feel obligated to have any social relation with one another as the commitment only lies in the agreement to transfer the promised items: pay money in exchange for PIEDs. For market oriented dealers, securing profits is paramount as their involvement in dealing PIED derives predominantly from economic incentives. Instead, in these drug using subcultures, the exchange creates a social bond between seller and buyer and produces a 'friendly feeling' between the parties (Sandberg, 2012a). Thus, the symbiotic relationship between PIED users and dealers is important as it reinforces the social relationship between the two parties. Similar to the research of Belackova and Vaccaro (2013), in bodybuilding these reciprocity rules have to be maintained in order to uphold the friendship-based relations between seller and buyer. On the one hand users expect additional services after the transaction has occurred, while on the other hand dealers expect users to be loyal to them and advocate not only for their PIEDs but also for their legal services and cultural knowledge.

While conceding that, at the top of the hierarchy of drug distribution chains, profit is likely to dominate more than at the lower levels (a.o. Goode, 1970; Murphy et al., 1990; Adler, 1993; Dorn, Levi & King, 2005), the motives underlying PIED dealing in bodybuilding subcultures are complex and go well beyond pure economic rationale. Indeed, economic action, such as the dealing of PIEDs, is always and inevitably a social action. As this chapter indicates PIED dealing groups and individuals in both Belgium and the Netherlands are driven by motivations derived from their social and cultural embeddedness in the bodybuilding subculture. Specifically, these dealers are often 'over-socialized' into the structure and culture of bodybuilding, and follow the cultural scripts that come with their group affiliation and organization.

6.4 The structure and formation of PIED markets: multiple markets, various players and many motives

Grounded in findings from the extant literature on drug markets as well as my own research, I have developed a typology of PIED dealers (see figure 1) which aims to account for multiple dealer types and motivations, and in particular the

ways in which socio-cultural, economic, and market forces work together in the development, formation and sustainment of PIED markets. All types of suppliers, whether a minimal commercial or a market oriented dealer, are in need of a diffused network of social relations when operating in the PIED market. Social relations are crucial for building trust and creating criminal opportunities (Morselli, 2005; Carrington, 2011). In addition, cultural factors are essential in comprehending the market behaviour of PIED suppliers as the symbiotic relationship between users and dealers, and between dealers and other suppliers, reinforces social relationships between people. However, cultural knowledge seems to be especially essential for entry to the PIED market considering the specialised skillset required for selling PIEDs due to the huge variation of doping substances and the differentiation of goals for consumption (Monaghan, 2001; Snippe et al., 2005). Further, the demand for PIEDs, law enforcement and advances in technology are all important drivers of illicit PIED markets and their operation. The Internet is not mentioned as a separate category in this figure but should be considered as a tool that may be used by all kinds of different players in this market to sell or purchase PIEDs (it falls under 'technical innovations'). All of these aspects work together in the creation, formation, development and sustainment of the illicit PIED market.

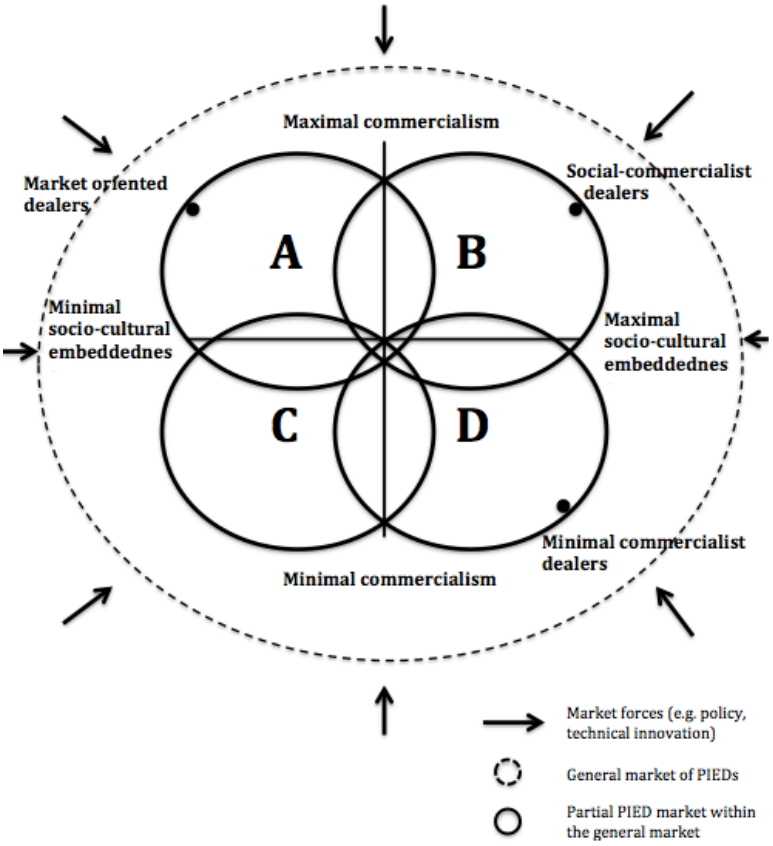

Figure 1. A typology of PIED dealers based on their socio-cultural embeddedness and commercialist interests.

The terms “general market” and “partial market” in this figure refer to Aspers (2011; cited in Sandberg, 2012a) distinction between ‘general market cultures’ and ‘partial market cultures’ and is useful when separating specific market cultures. The former refers to many markets and “can be called into action when people act and when markets are made” (e.g. what products to sell), while the latter refers to the unique culture of that market (e.g. who contacts whom), in other words, “how market actors are allowed and expected to cooperate and compete in the market” (p. 94). So while, in general, PIEDs are a saleable good that have a strong position in the market, these partial markets have particular characteristics or customs that determine the market behaviour of sellers and buyers. Moreover, a separation needs to be made between different types of partial markets (e.g. bodybuilding, cycling) as the selling of PIEDs to end consumers takes place in markets whose characteristics are often very different.

In Sandberg’s (2012a) account of cannabis markets, a distinction is made between three types of partial markets; (1) the private market in which selling takes place behind closed doors, (2) the semi-public market which is associated with clubs, pubs and cafés, and (3) the public market where selling takes place in public spaces, parks and streets (see also May & Hough, 2004; Ward, 2010). Considering the nature of the PIED market this distinction in general can be adopted as well (private, semi-public and open), the only difference being the spaces PIED users and suppliers occupy. For example, due to the different reasons for use (e.g. enhance appearance) as opposed to other illegal drugs (e.g. ‘party drugs’), the most common place to get in contact with a dealer is in a gym (Koert & van Kleij, 1998; Oldersma et al., 2002) as opposed to a club, pub or café. Thus, despite that only four partial markets are displayed in this figure, each segment may contain multiple private, semi-public or public markets. For instance, category B may include various private markets that specifically target certain using groups, such as police officers or bodybuilders, which all have their specific set of norms, values and rules. Moreover, while these partial markets all have their own unique culture that does not imply that these markets cannot overlap. For example, a large-scale distributor may deliver PIEDs to different partial markets. Indeed, the separation of different markets and types of dealers presented here seems fixed, however, this rigid explanation lacks an understanding of the heterogeneous nature of PIED using and dealing markets. Therefore some caution is warranted in the interpretation of this model.

In figure 1, minimal and maximal socio-cultural embeddedness refers to the understanding, participation and/or integration of the seller in the lives and environment of consumers and vice versa. Whereas, minimal and maximal commercialism refers to the economic interests of PIED dealers. The majority of dealers spoken to in this research fall into category D (minimal commercialism and maximal socio-cultural embeddedness) and can be best described as ‘minimally commercial suppliers’ (Coomber & Moyle, 2014) for whom securing

profits is not the primary motivation but who are involved in trafficking due to the social and cultural setting they inhabit (e.g. Eric and Roel). Many PIED dealers often appear to be part of a complex network of values and behaviours in which the production, supplying and use of PIEDs is embedded in particular cultures. Specifically, at the bottom end of the PIED market people are often involved in the supply of PIEDs to sustain their own use and/or to help friends or fellow sport buddies with similar bodybuilding-related goals.

In contrast, the top left hand corner of category A represents market oriented dealers, for whom securing profits is paramount as their involvement in trafficking derives predominantly from economic incentives (e.g. Rens). This is not to imply that the dealers who operate in segment A do not contain any 'culture' of their own. Although these dealers will engage less with their customers, they will still have certain beliefs, norms and rules when operating in an illegal market (see also Sandberg, 2012a). However, they differ from socially oriented dealers in that they have no connection with the socio-cultural environment of the user and vice versa. As soon as the transaction is over (money in exchange for PIEDs), both parties will not feel obligated to have any social relationship with one another. In addition, these dealers are also often active in a variety of illegal activities (e.g. selling of XTC) and do not solely focus on dealing PIEDs. In this research most of the dealers with "no occupation" described in chapter 5 would fall in this category.

The PIED dealers who manufacture and distribute PIEDs on a large scale (e.g. Nathan and Chris) within bodybuilding can be best classified as 'social-commercialist' dealers (Hough et al., 2003) and fall into category B (maximal commercialism and maximal socio-cultural embeddedness). The orientation of these dealers is similar to minimal commercialist dealers, as most originally started from this position, but as their legal/illegal business grew so did their economic aspirations. Moreover, as their PIED dealing scheme grew, more 'sub-dealers', 'helpers' or 'friends' were recruited to help these dealers produce and move their products (Kraska et al., 2010). However, these 'friends' have been or are used for specific skills (e.g. producing AAS, creating websites), as opposed to the usual pyramid structure (in regards to drug markets see Moyle, 2010; Buxton & Bingham, 2015). Such dealers are a hybrid in that they sell large quantities of PIEDs and are economically motivated; yet they retain a deep embeddedness in bodybuilding subcultures. While obtaining profit motivates these dealers to go large-scale, what is important is that monetary gain is not their sole reason for dealing. Rather, their motivations are as much altruistic or ideological as commercial. Such PIED suppliers are often not regarded as a 'dealer', either by themselves or their customers, but instead are seen as a 'coach' or 'friend'.

However, while the majority of sales still take place in their social network, a key difference between these social-commercialist and minimal commercialist dealers, is that the former group often supplies to those outside of bodybuilding communities and other dealers, and sometimes deal in other types of drugs (e.g.

Viagra) (see also Koert & van Kleij, 1998; Maycock & Howat, 2005). For example, Rolf supplied PIEDs to cyclists and Nathan supplies PIEDs to consumers connected to fighting sports. The fact that these dealers sell outside their social circles reflects the economic drive of this type of dealer. However, such dealers often stay quite close to their original sub-cultural group (in this case 'sport users'), and the other drugs dealt in are often related to PIED use. For instance, one dealer also supplied Viagra to help counteract the possibility of erectile dysfunction caused by the AAS. Moreover, the supply of PIEDs is still often supplemented with additional services that benefit both the user and the supplier. For example, Nathan also sets up nutritional and training programmes for these non-bodybuilding users. In addition, the success of dealers within bodybuilding allows them to expand their legal and illegal activities, as the principles of bodybuilding (e.g. how to eat and train) can also be adopted in other sports and to achieve general training goals. Therefore, these large-scale distributors have all the attributes to be successful in the PIED market: they have socio-cultural knowledge, are integrated and accepted in the subculture, have the social network to distribute their products, and have the (economic) opportunity to engage in these illegal practices on a large scale.

Finally, when both socio-cultural embeddedness and the drive for profit are absent, dealers will fall into category C. One can think of general practitioners who prescribe PIEDs to users for non-medical reasons but generate little to no profit. A reason for these physicians to prescribe may be to reduce harms that could come from purchasing PIEDs from the illicit market. For instance, as we will see in the next chapter the quality of illicit market PIEDs is generally quite poor. While I did not personally encounter these 'benevolent dealers', several Belgian cases did show that physicians were prescribing AAS for non-medical reasons to users (see chapter 5). Yet, while these physicians may have had harm reducing intentions, there was at times a monetary driver as well. For instance, in one Belgian case a general practitioner injected non-medical users with AAS (Case 26 BE). The reason given by the general practitioner was that he wanted to help people who could not increase their muscle mass with physical training alone. However, users had to pay for this service in cash so it could not be traced back to the physician. This case could be pinned to the upper-left end of category C. Nevertheless, one could also argue that this category is likely to be small when both drivers are absent, as there is no 'will' to illegally deal PIEDs.

Essentially, these are merely ideal types and multiple variations in levels of socio-cultural embeddedness and economic motivation will exist. It is imperative to note that PIED dealers may come in a variety of 'types' and that they may be motivated by a plurality of factors, often simultaneously. As Martin (2010) notes there is no standard organisational format for an illicit drug distribution network, rather, each network adapts the unique exigencies of its local market. The aim of this figure is not to confine PIED dealers to specific categories but to advance and allow for thick descriptive accounts of multiple dealer

characteristics and motivations, set within the attributes of the particular markets in which they operate. Nonetheless, despite this variability, a range of features that are common to many illicit PIED dealing networks may still be determined (e.g. the importance of trust, the threats posed by law enforcement, competition from other groups). This typology offers a tool to account for such characteristics and to aid in the exploration of PIED dealing networks.

6.5 Conclusion: the importance of socio-cultural embeddedness

The PIED markets related to bodybuilding subcultures in Belgium and the Netherlands might be described as an ordinary economy in which rational actors are in pursuit of profit; while at the same time many dealers and users are friends for whom non-commercial norms and values are central. Importantly, however, it appears that the latter characteristics, stemming from their socio-cultural embeddedness, take precedent over financial motivators, and when money is a factor it is often for reasons which lead directly back to the culture in which the dealers are also participants in. The economic transaction becomes less significant and rather forms one aspect of an enduring bond between buyer and seller. The case study presented here suggests that economic practises are imbedded in the bodybuilding subculture: they are aspects of the culture. Specifically, these PIED dealers are often 'over-socialized' into the structure and culture of bodybuilding, and follow the cultural scripts that come with their group affiliation and organization. Amongst bodybuilding subcultures in the Netherlands and Belgium not only is the use of PIEDs normalized, but also certain types and levels of dealing are seen as less deviant or problematic. In addition, in order to be successful in this market both PIED users and dealers must have certain cultural knowledge and experience, and need to reciprocate in this ongoing relation. While dealers do this by providing additional services, such as giving advice on training, nutrition and PIEDs, users do this by acknowledging and affirming the experience and skill set of these dealers, and by giving repeated business to the same dealer.

While these findings may not be extrapolated to explain the motivations behind other PIED dealing networks, they contribute to an empirical case study of the proximate realities of PIED dealing networks on which local policy may be built. More importantly, we may draw some general inferences from these findings. One could reason that a group with such high consumption rates would be the ideal target market for 'organized crime' and most of all economically rational dealers. Yet, the case study found no indications of organized crime, nor that economic incentives were the primary motivator. Most of all, the case study of bodybuilding subcultures revealed the necessity of research to identify the multifarious characteristics and motivations of PIED dealing networks in place of such totalizing claims. As Coomber (2010: 10) suggest, this "homogenization of the drug dealer and the drug market is neither accurate nor helpful". Rather, the

structure and formation of illicit drug markets are often shaped by a variety of factors including the types of drugs dealt within them, the characteristics of the users served by them, the cultural context in which the markets exist, the social structures which sustain them, and market forces (Potter, 2009). Therefore, it is imperative to identify the many characteristics and motivations of PIED suppliers and the networks in which they operate.

Chapter 7

The development and structure of Belgian and Dutch PIED dealing networks

> "J: […] We report something [to the Netherlands] when we come across it during a Belgian case, when it is apparent that a large-scale producer from the Netherlands supplies here and there [in Belgium]. *Otherwise we could send mail daily to you* [the Netherlands]. […] We looked at several 'purchase and sale websites' and there *were hundreds of ads with Dutch phone numbers*. We don't report this. *We only report things that are serious.*" (Joop, Belgian official, interview)

During my research Belgian officials often remarked that the PIEDs they came across during their investigations had a Dutch link. These officials argue that, as the Netherlands does little to address this issue, Dutch suppliers can easily produce their own AAS and distribute them through AAS selling websites, which then ultimately end up on the Belgian market. So, despite Belgium's effort to target this market, national action becomes futile and ineffective as PIEDs are easily produced in the Netherlands and sold in Belgium. This chapter seeks to explore the contours of the Belgian and Dutch PIED market, and attempts to unravel the complex relationship between the two countries. I will do this by examining the various ways in which PIEDs can be obtained, both legally and illegally, in the respective countries. In addition, particular attention will be paid to how PIED markets are structured in and between Belgium and the Netherlands, and beyond, and the underlying mechanisms that influence the formation of these dealing networks.

7.1 The various sources to obtain PIEDs

The legal status of PIEDs varies considerably depending on the context (see table 6). For instance, certain types of PIEDs (e.g. AAS) may be legally obtained through a physician, or depending on the country, the consumption and supply of these products are in fact legal. Consequently, there are many sources through which dealers and users may obtain PIEDs. Indeed, studies confirm that users

acquire their PIEDs through numerous sources including physicians and the Internet (e.g. Striegel et al., 2006; Gezondheidsraad, 2010). In recent years the Internet in particular has become a growing source to purchase and sell PIEDs (de Hon & van Kleij, 2005; Wassink et al., 2010; Cordaro et al., 2011). The Internet is of great importance in the development of drug markets, as it leaves people free to obtain 'prescription' medication from countries with markedly different drug laws (Walsh, 2011). These prescription medications can easily be shipped to the West, often from Asian countries, via online 'pharmacies' (see table 6). Further, PIEDs can be sold both legally (e.g. online pharmacy) or illegally online (e.g. AAS selling website), and can likewise come from pharmaceutical (e.g. foreign pharmacy selling PIEDs online without need for prescription) or non-pharmaceutical online sources (e.g. PIEDs that are illegally produced and then sold online). While the Internet is mentioned as a separate category in table 6, in essence it is all-encompassing as all other categories may fall within this source.

Table 6

Overview of sources to obtain PIEDs

	Pharmaceutical source	**Non-pharmaceutical source**
Legal trade	Category 1: Legally manufactured PIEDs available on prescription.	Category 2: Legal supplements containing illegal substances not mentioned on the label and/or PIEDs that are only allowed in the country in which it is produced.
Illicit trade	Category 3: Legal manufactured medicine obtained with or without a prescription (e.g. pharmaceutical companies located in countries with less restrictions or physicians who prescribe PIEDs for non-medical reasons).	Category 4: Counterfeit PIEDs and/or PIEDs produced without a license (e.g. individuals or groups who illegally produce their own PIEDs).

Category 5: The Internet

Until the late 1980s most PIEDs in the Netherlands and Belgium came from category three: the division of legitimate medicines for off-label or non-medical use (see chapter 2). These were either domestic products, for instance, PIEDs were retrieved through a Belgian physician (see chapter 5), or were purchased from countries where less regulation exists on the pharmaceutical industry. Historically, PIEDs often came from countries such as Spain and Greece, but due to the increasing regulation on the pharmaceutical industry this has shifted further east to countries such as Poland, Thailand and India. However, like many other countries (Llewellyn, 2010a; Paoli & Donati, 2014), the Dutch and Belgian

market has devolved into a market in which most PIEDs are either counterfeited or produced domestically (category 4), and are often bought or sold online (category 5). Decorte (2007) refers to this process as 'import substitution', in which the share of imported drugs is decreasing steadily and that of locally manufactured drugs is increasing steeply. A reason for this is that local prohibition policies prevent the diversion of pharmaceuticals and prevents local physicians from prescribing, which leads to a reduction in the supply of PIEDs from this source and a growth in underground production (Llewellyn, 2014, April 11). However, as we will see in the next section, an important difference between the Netherlands and Belgium is that the Netherlands has become predominately a production country while Belgium now largely imports 'home-brewed' AAS and other PIEDs.

7.2 The growth of underground laboratories (UGLs) in the Netherlands and the rise of the Internet trade in Belgium

While drug seizure statistics tell little about the amount of drugs available, but rather generally reflect the activity of police and customs, they may in combination with other data (e.g. drug use survey data) be used as an indirect source of information on the evolution of illicit drug markets, and as a tool to investigate trafficking flows and their trends. However, because the data concerning seized PIEDs has only recently been systematically and comprehensively recorded in Belgium and the Netherlands it is not possible to make general statements about the evolution of these illicit markets of PIEDs (see chapter 4). Therefore, care must be taken not to misinterpret these figures to avoid exaggerated or unwarranted claims. Nonetheless, the data does allow us to observe certain characteristics about the PIED markets in Belgium and the Netherlands.

Looking at the figures of seized PIEDs by the law enforcement agencies of both countries an increase can be noted in both final products of PIEDs and raw materials of AAS (see table 7). Statistics pertaining to raw materials consider only AAS and not other PIEDs. Moreover, the majority of seized final products in Belgium consisted of AAS, while in the Netherlands most of the seized final products consisted of other image enhancing drugs (e.g. Melanotan II[49]). In the Netherlands the amount of confiscated final products appears to remain relatively stable, however there has been an increase in the seizure of raw materials of AAS. In Belgium the opposite has occurred; while little raw materials are seized, the number of confiscated final products has rapidly increased. It seems that the Netherlands is a dominant production country in Europe when it comes to AAS, while Belgium appears more dependent on foreign sources as it imports most of its PIEDs.

[49] Melanotan II (MT-II) is an analog of the alpha-melanocyte stimulating hormone (α-MSH). MT-II is mostly used because of the tanning and pigmentation properties of the hormone.

Considering that raw material seizures consist of only AAS, and that steroids are the PIEDs that are most commonly produced by UGLs, the increasing amount of confiscated raw materials in the Netherlands may be an indicator that UGLs are becoming more prevalent. In addition, many final products confiscated by the Dutch customs service do not consist of AAS but of other PIEDs, and the seized final products in general are relatively low compared to the Belgian statistics. The lower figures may also be a reflection of the low priority PIEDs have in the Netherlands, as most agencies are not concerned with these illegal substances, which is indicated by their lack of registration and investigations (see chapter 4). Nonetheless, while this may be a result of priority issues, it also may be an indication that the Netherlands is indeed more reliant on domestically produced AAS and less on steroids from foreign sources.

Table 7

An overview of the seized final products (all PIEDs) and raw materials (only AAS) in Belgium and the Netherlands[50]

Country	Types of product	2006	2007	2008	2009	2010	2011	2012
BE	Raw material (grams)	-*	-	-	-	-	1,700	3,900
	Final products (per unit**)	38,257	31,223	47,974	41,801	65,896	90,985	221,397
NL	Raw material (grams)	n.a.***	n.a.	n.a.	2,500	4,250	15,250	21,335
	Final products (per unit)	n.a.	n.a.	n.a.	41,816	23,549	24,210	45,494

* No raw material was confiscated

** Per unit refers to the amount of ampoules or tablets that were confiscated

*** No data available

A final indicator for the growth of UGLs is that in this research at least five cases were found in which people were producing their own AAS, often on a rather large scale. In addition, I met some dealers in the Netherlands that produced their own AAS, however this was mostly to support their own consumption and/or for a small group of friends (no Belgian producers were found). Therefore, in contrast to earlier studies on the Dutch PIED market (Koert & van Kleij, 1998; Oldersma et al., 2002; Snippe et al., 2005), a sizeable amount of the production of AAS[51] now appears to occur locally instead of being imported from foreign UGLs and/or pharmaceutical sources (e.g. pharmacy).

Conversely, in Belgium many more final products are confiscated than raw materials. While in the last two years some raw materials of AAS have been

[50] The statistics of table 7 are obtained through the Hormonencel (Belgium) and the Dutch customs service (see chapter 4).

[51] The production of AAS refers to the blending of the imported chemicals.

seized, these Belgian UGLs seem to be producing and distributing on quite a small scale when compared to Dutch UGLs. Only one case was discovered in which a PIED dealer was arrested for setting up his own UGL (Case 7 BE; see section 7.3). All parties (Dutch/Belgian officials, dealers and users) included in this research confirmed that little underground production takes place in Belgium. For example, Chris, a Belgian ex-distributor mentioned:

> "KvV: Do you know people in Belgium who produce?
> C: No. I don't know anyone in Belgium who produces. *It all comes from the Netherlands*. I know a lot of people, but *nobody that produces in Belgium*." (Chris, Belgian ex-distributor, interview)

Moreover, in Belgium, seized AAS often have a Dutch underground brand name (e.g. Golden Gear, Royal Pharma, Euro Pharma) while one would be hard pressed to find PIEDs in the Netherlands with a Belgian underground brand name (e.g. Ultimate Pharma). Rather, in the Netherlands the confiscated PIEDs are either Dutch or come from a foreign country other than Belgium (e.g. the brand Aburaihan from Iran). Subsequently, Belgian users are more reliant on AAS that are produced abroad since little 'home-production' is taking place. Therefore, Belgian authorities may be correct in stating that Belgian PIED users are becoming more reliant on the Internet when ordering these illegal substances. The rapid increase of confiscations of final products in Belgium supports this view (see table 7).

Nevertheless, when comparing these figures to other confiscated illicit drugs these numbers do not seem to be very alarming from neither a legal nor a harm standpoint. For example, scientific evidence for the adverse health effects of PIEDs, in particular long-term effects, are scarce, and relatively few deaths are directly linked to PIED use (a.o., Mougios, 2004; Thevis & Schänzer, 2010; Chandler & McVeigh, 2013). In addition to this, the PIED market in the Netherlands and Belgium is still relatively small with few dealers, few consumers, and less products than other illicit drug markets. For instance, in 2012 18.179.741 grams of cocaine were confiscated by the Belgian customs service (van der Aa, 2013, December 19), and in the same year 7.937.000 grams of cocaine was confiscated in the Netherlands[52] (Nu, 2014, November 25). In contrast, in 2012 3.900 grams of raw AAS material were confiscated in Belgium and 21.335 grams of raw AAS material were seized in the Netherlands. Table 8 provides an overview of several types of drugs that were confiscated in Belgium and the Netherlands in 2012.

[52] The seized cocaine only includes confiscations done by the Dutch customs service and not from other law enforcement agencies such as the police. Thus, these numbers are even higher when these figures would be included.

Table 8

An overview of several types of drugs confiscated in Belgium and the Netherlands in 2012.

	Belgium (kilos)[53]	Netherlands (kilos)[54]
Raw material of AAS	4	21
Cocaine	18.179	7.937
Heroin	49	370
Marijuana and hash	6.103	7.672

Nevertheless, Dutch/Belgian officials often claim that the amount of confiscated PIEDs, with particular attention to AAS, does not represent its full impact. For example, Stanozolol is often used in dosages of 10 mg tablets. Therefore, 100 grams of seized Stanozolol would translate into 10.000 users' dosages (Dutch customs service, personal contact 2014, February 24). In comparison, for cocaine to be effective, a 'rookie' or occasional user would need approximately 100-200 milligrams per use[55]. Therefore, 100 grams of cocaine would translate into 667 users' dosages when taking an average of 150 milligrams per use. Thus, at first glance authorities are correct in their assumption that the users' dosages per gram of active substance are quite high for AAS. However, authorities seem to overlook important differences in consumption patterns, in particular the *total amount and period of time* that one user consumes a particular AAS (also known as a cycle[56]). For example, a normal amount of Stanozolol for one non-medical user would be around 50 milligrams a day for six weeks; meaning that one person needs a total of 2,1 grams for it to be effective[57]. Therefore, 100 grams of Stanozolol would in practice serve only 48 users' dosages. Thus, when the total amount and period of time for one product to be effective is taken into account the differences between the amount of AAS and cocaine confiscations remains significant.

In summary, both the Belgian and Dutch statistics indicate that the illicit market for PIEDs is growing, but when compared to some other illegal drugs, PIEDs appear to represent a rather small market. However, these relatively low numbers may be a result of the low priority PIEDs have in both countries. Even in Belgium, state authorities are less concerned with PIEDs than with other illegal drugs. As such, the interception rates are highly questionable as priorities and resources differ across illegal drugs. In particular, in the Netherlands it is

[53] The Belgian confiscation statistics were retrieved from van de der AA (2013, December 19).

[54] The Dutch confiscation statistics were retrieved from Nu (2015, November 25).

[55] Several websites were consulted for what the average dose of cocaine is. See, for example, www.narconon.org or www.drugscope.org.uk.

[56] A cycle refers to the period of actual AAS use; the time frame in which AAS are being administered is referred to as 'on-cycle' and when not using is called 'off-cycle'.

[57] Several bodybuilding forums were consulted for information on an average Stanozolol cycle. See, for example, steroid.com or steroidology.com.

difficult to estimate the extent of the illicit PIED market due to registration issues and the low priority (see chapter 4). However, it seems that in the Netherlands more domestic underground production is taking place, while in Belgium more illegal products are purchased over the Internet or bought through Dutch contacts. The products bought over the Internet predominately consist of (Dutch) underground brands, and to a lesser extent exist of legitimate medicines. The PIED market in the Netherlands and Belgium has changed: what started as the non-medical use of legitimate medicines has turned into a market in which most AAS are produced illegally, underground, and often sold online or bought through a personal contact. In the next chapter the role of UGLs in the Netherlands and the importance of the Internet in Belgium will be discussed in more detail.

7.3 The connection between Belgium and the Netherlands, and beyond

The criminal justice cases illustrated that the Belgian and Dutch PIED markets are highly intertwined (see table 9). For instance, in 40%[58] of the cases a connection was found between Belgium and the Netherlands. Specifically, the Belgian cases often indicated a relationship with the Netherlands (61.3%)[59], but many of the Belgian cases also found a link to other countries (45.1%)[60]. In comparison, in the Netherlands only 20.4%[61] of the cases found a connection with Belgium. Instead the majority of the cases in the Netherlands highlighted a link with other countries (63.4%)[62]. In several Dutch cases the 'foreign connection' was China and involved the import of raw materials – used to produce AAS -, therefore, explaining the higher incidence of countries aside from Belgium. Table 10 provides an overview of the source countries of the seized PIEDs, either raw materials or final products, found in this research. This table is based on data retrieved from the confiscations, the criminal justice cases and interviews. Dutch and Belgian authorities suspect that most PIEDs come from Eastern European countries (Bulgaria, Hungary and Poland) and Asian countries (India, Iran, Tunisia and Thailand), and that almost all raw materials of AAS come from China. Certain Western European countries, like Spain and Greece, used to be popular sources (see Snippe et al., 2005), but stricter controls on the medical sector have made it more difficult to obtain PIEDs without prescription at pharmacies.

[58] This figure exist of adding the 'connection Netherlands and Belgium' (23.1%) with the 'connection Belgium, the Netherlands and another country' (16.9%).
[59] This figure exist of adding the 'connection Netherlands and Belgium' (45.2%) with the 'connection Belgium, the Netherlands and another country' (16.1%).
[60] This figure exist of adding the 'connection Belgium, the Netherlands and another country' (16.1%) with the 'connection other country' (29%).
[61] This figure exist of adding the 'connection Netherlands and Belgium' (2.9%) with the 'connection Belgium, the Netherlands and another country' (17.5%).
[62] This figure exist of adding the 'connection Belgium, the Netherlands and another country' (17.5%) with the 'connection other country' (55.9%).

Table 9

An overview of the Belgian and Dutch PIED-related cases

	Connection BE-NL	Connection BE-NL, & other country	Connection other country	No connection other country
BE cases (N = 31)	45.2%	16.1%	29%	9.7%
NL cases (N = 33)	2.9%	17.5%	55.9%	23.5%
Total cases (N = 64)	23.1%	16.9%	43.1%	16.9%

In the majority of the cases, where a connection was found between Belgium and the Netherlands, a Belgian dealer would obtain his products from a Dutch contact before distributing them in Belgium. These PIEDs are illegally produced in the Netherlands and/or obtained from foreign UGLs or legal channels (e.g. pharmacy). For example, in 2006 a bag containing PIEDs was found in Belgium and traced back to a Belgian suspect (case 15 BE; Case 7 NL). An undercover operation was set up in which a Belgian agent ordered a small amount of PIEDs from the suspect. The same agent later approached the Belgian dealer again to place a larger order. The Belgian dealer then set up a deal for around 500 vials of AAS worth around 25.000 Euros, which took place in the Netherlands. In cooperation with the Dutch police the three suspects, one Belgian and two Dutch, were arrested at the moment of transaction. There were several indications that the two Dutch suspects were involved in the production of illegal underground AAS. While the main production site was never located, other clues were found. For example, at the time of arrest materials such as caps, empty vials and labels on which a Dutch underground brand was printed were found in the car of the Dutch suspects. The PIEDs were most likely produced in the Netherlands and distributed to Belgium via personal contacts and/or the Internet[63]. During my fieldwork, Belgian users and dealers likewise confirmed that they often retrieved their products through a Dutch contact. For example, Roel, a Belgian dealer, regularly drove to Dutch Limburg[64] to obtain his products. This Dutch contact distributed both Dutch (e.g. Golden Gear) and foreign (underground) brands (e.g. Alpha-Pharma from India) to Roel, and other Belgian and Dutch customers.

[63] The Belgian dealer initially contacted the Dutch dealers through a Dutch bodybuilding forum.
[64] There is also a Belgian Limburg.

Table 10

An overview of the source countries from which raw materials (only AAS) and final products (all PIEDs) are imported to Belgium and the Netherlands.

Country	Source countries	
Belgium	*Raw materials*	China
	Final products	Bulgaria, China, Czech Republic, Denmark, France*, Germany, Greece, Hungary, India, Netherlands*, Poland, Russia, Spain, Thailand, Turkey, and U.S.
Netherlands	*Raw materials*	China and Hong Kong
	Final products	Afghanistan, Belgium*, Bulgaria*, Canada, China, Egypt, Germany*, Greece, Pakistan, India, Italy, Iran, Poland, Romania, Spain, Slovakia, Sweden*, Thailand, Tunisia, Turkey, U.K.*, and U.S.

* The Netherlands or Belgium also exports PIEDs to that particular country

Furthermore, as table 10 illustrates, Belgium and the Netherlands also export PIEDs to other countries. Yet, while some cases indicated that Belgian dealers distributed PIEDs to the Netherlands and France, this seems to be rather exceptional. In particular the Netherlands plays a role in distributing PIEDs to 'neighbouring' countries: Belgium being one of the main destinations. For example, Thomas, a Dutch official, mentioned:

> "KvV: So, the Netherlands imports PIEDs and also produces their own, but is the Netherlands also a country that exports PIEDs?
> T: Yes [On a large scale?]. *No, absolutely not. But for Belgium, Germany, England, and Sweden, the Netherlands is a big player*. We often hear something about it [from other authorities], because I talk to people around the world about this topic. Some of these people email me and say, "Hi Thomas, not to be a bother but this is coming from your country… Do something about it!" (Thomas, Dutch official, interview)

Despite Belgium's efforts to reduce supply these substances may still be easily purchased in the Netherlands and other countries, making their national efforts less effective. Similar effects have likewise been noted in other drug markets (UNODC, 2013, 2014). Drug markets simply relocate to another country with less regulation and fewer controls (Costa, 2008).

Moreover, while the Netherlands is often mentioned as a source country for Belgium, this does not mean that Dutch dealers are always the main players behind the operation. In several cases Belgian and Dutch dealers worked together in supplying PIEDs to the Belgian/Dutch market. For example, in one Belgian case from 2012 the main suspect was working for two Dutch dealers and distributed PIEDs in Belgium and the Netherlands (case 7 BE). After a year he decided to set up his own UGL in Belgium and started to produce his own brand, named "Pure Pharmaceuticals". However, before his business could set-off he was arrested and spent six weeks in prison for this offence. After his release he attempted to set up a new UGL together with a Dutch dealer, which they located in the Netherlands. Both dealers were arrested when trying to sell PIEDs in Belgium. Thus, in this case, a connection was found between the two countries in which both a Belgian and Dutch PIED suspect played a central role. The case illustrates that a Belgian dealer started an UGL in the Netherlands as opposed to a Dutch dealer distributing PIEDs to a Belgian contact.

Furthermore, in some cases the two countries were connected due to the close relationship between Dutch and Belgian bodybuilding. Over the years the amount of Belgian bodybuilding competitions taking place on an annual bases have decreased significantly, to now being almost non-existent. Instead, most Belgian bodybuilders compete in the Netherlands where no doping controls are conducted. Some Belgian and Dutch bodybuilding federations now also work closely together in organizing bodybuilding competitions in the Netherlands in which both Dutch and Belgian bodybuilders can participate. An example of such a connection between the two respective countries is the Belgian case involving Rolf, a Belgian distributor (case 6 BE) (see chapter 6). Most of the Dutch/Belgian suspects in this case were involved in the board of a bodybuilding federation, competed in bodybuilding competitions and/or were bodybuilding coaches, and subsequently knew each other from being involved in the Dutch/Belgian bodybuilding scene.

Nonetheless, while the illicit market for PIEDs in Belgium and the Netherlands is highly intertwined, there are also many cases in which no connection was found between the two countries. Instead, the PIEDs in their final form, or raw materials of AAS, were retrieved from other foreign countries. Looking at table 9, in 43.1% of the criminal justice cases a connection was found with another foreign country outside of Belgium or the Netherlands. Specifically, in Belgium 29% of the PIEDs were imported from another foreign country, and in the Netherlands this figure arose to 55.9%. Further, in 16.9% of the cases there was a connection between Belgium and the Netherlands, plus an additional country. Most of these foreign countries are known to have lax regulation surrounding PIEDs. In many of the countries, mentioned in table 10, PIEDs are easily obtained through a pharmacy without a prescription (e.g. Poland). Usually the rule of thumb is, "the further away, the easier it gets" (Koert, 2000, February

23). For example, it is more difficult to obtain your PIEDs from Greece than it is from Thailand.

The PIEDs in these countries are often produced by a 'legitimate' drug manufacturer or by a pharmaceutical company that may not fulfil the standardization requirements of Western countries but may operate lawfully in their own countries (Paoli & Donati, 2014: 37). Many of these pharmaceutical companies appear to have a legal status, but are known for supplying PIEDs on a large scale to the illicit market. For example, Alex emailed me a list of several 'legal' pharmaceutical companies that are well known in the bodybuilding scene[65]. Some dealers go so far to say that the sole reason that these companies exist it to serve the illicit market for PIEDs. For example, Roy mentioned:

> "R: He [a PIED producer and distributor] started Big Pharmaceutical [pseudonym] after he betrayed Polish Steroids [pseudonym]. *He has all the licenses and produces and imports 'research' stuff to the bodybuilding market* […] He buys everything 'legally' in a corrupt land and sells everything over the Internet to other countries." (Roy, Dutch producer & distributor, interview)

These PIEDs are manufactured under legal conditions but may end up as illegal products in the final stages of the process. Despite the legal status of the companies or factories, it seems that their sole purpose is to provide PIEDs to the illicit market. According to Braithwaite (1993) the pharmaceutical industry has arguably the worst record of serious corporate crime of any industry, and as Paoli and Donati (2014), I regard their involvement in the PIED market as highly plausible and their role as highly influential.

7.4 The structure of PIED dealing networks within and between Belgium and the Netherlands

As with other illicit drug markets (a.o., Reuter, 1983; Adler, 1993; Haller, 1997; Zaitch, 2002, Morselli, 2008; Benson & Decker, 2010), the PIED market tends to be described as decentralized and comprised of largely informal or loosely structured groups. In other words, individuals and small groups populate the PIED market as opposed to massive, centrally organized groups. Most PIED dealers in Belgium and the Netherlands do not act as organizations, but as individuals relying on the networks available to them that arise from their bonds (e.g. sport connection). For example, a Dutch dealer, Erwin, imported the United Kingdom (UK) underground brand Bio-Chem to the Netherlands and distributed it to other Dutch dealers. However, in 2011 a large shipment was seized at the

[65] The names of these companies cannot be provided due to reasons of confidentiality.

Dutch border. Both parties blamed one another resulting in an end of the business and personal relationship (the contacts knew each other from bodybuilding). Erwin continues to distribute PIEDs in the Netherlands but since the incident has switched suppliers. This example illustrates how PIED dealers can easily switch to other contacts if it better suits their (economic) interests. Authorities describe the PIED trade in a similar fashion:

> "KvV: Would you describe this trade as organized?
> S: *Not very organized*, not according to what I saw. There is *little organization when compared to other criminal activities*. Everything happens through the Internet. And it is a select group, which is not widespread in the country, or who do not need in-between contacts in other countries, which you have much more of, for example, with hashish. You order a product [PIEDs], you get a product, you produce a product, and you distribute it through the Internet. So, in essence someone doesn't need any contact persons who are spread internationally, you don't need fellow perpetrators in an organisation so to speak." (Stephan, Belgian official, interview)

> "KvV: How would you describe the dealing networks in the Netherlands?
> T: It varies a lot. I know a producer who works on his own, completely alone. […] But you also have those who have a production division and a distribution division. They do not work alone. That is just a chain. They work with three or four people. […] *Whether they are big or small, they all are in their own working cells*. There can sometimes be bigger (cells) above it, because if you look at the diversity of Genesis [Hungarian UGL] then you know that they think big, and that they produce on a large scale. And then you see Dutch producers, for example, Generic Supplements. Yeah, they just offer around 10, maybe 15, different products [PIEDs] in their assortment. While Genesis is much bigger […] But if specifically that bigness [large dealing or production networks] is also in the Netherlands? No, I don't think so." (Thomas, Dutch official, interview)

On a very basic level only one other contact is needed to obtain and distribute PIEDs: a (Internet) source to order your raw material from or a local 'legal source' (e.g. physician). The former is more frequently done in the Netherlands, while the latter, although declining, plays a larger role in Belgium (see chapter 4). An example of the first source comes from a Dutch case in 2013 in which the main suspect, Dennis, ordered his raw material from China and produced the

PIEDs at home (case 8 NL). Dennis set up his own websites in order to distribute his products. An example of a legal source comes from a 2005 Belgian case in which a Belgian physician prescribed PIEDs for non-medical reasons (case 21 BE). Similar to other illicit drug markets, few links are needed in the supply chain between importation and retail level. For example, Pearson and Hobbs (2001: 24) note that in the case of heroin it can be as few as four levels: from 100 kilo upwards bulk shipments at importation; through 20 to 40 kilo wholesale dealers; to one to ten kilo middle-level drug brokers; to retail level dealers buying in ounces and selling in grams. Yet, as the PIED cases suggest, in essence one person may have complete control over the distribution chain: from producing AAS or obtaining it through a legal source to supplying it over the Internet or to other personal contacts.

Nevertheless, in most cases between three and five people were involved in the PIED dealing networks studied in this research. Dealers often need multiple contacts as there are numerous types of PIEDs and depending on the users' goal one person may need several different illegal substances. For example, an AAS cycle can exist of AAS, testosterone, GH and products that counteract the side effects of AAS (e.g. Nolvadex). In only a few exceptions was a large PIED dealing network discovered, however these were all connected to bodybuilding. For example, in the Belgian case involving Rolf, in total 127 people were involved of which 14 were considered the main Belgian suspects (case 6 BE). Nine of the 14 Belgian contacts were highly involved in bodybuilding. While the others were not involved in organized bodybuilding, three of them were 'hard-core' trainers at Belgian gyms. The PIEDs in Belgium were either obtained through a Belgian physician or through a foreign UGL or pharmaceutical source. Moreover, Rolf had at least four connections located in the Netherlands of which three were involved in bodybuilding (e.g. Noah). The fourth owned a supplement shop that is well known amongst Belgian/Dutch bodybuilders. The PIEDs in the Netherlands were either home produced or obtained through a foreign UGL or pharmaceutical source. Besides his 'bodybuilding contacts', Rolf also obtained PIEDs through other countries, such as Spain and Poland, again either through a pharmaceutical source or via an UGL. However, as Kleemans (2014) notes, social relations do not happen randomly but often obey laws of social and geographical distance. Indeed, the PIED dealers in the 'Rolf case' became members of the same criminal network due to their shared bodybuilding background. The police report also mentioned that, "the channels are difficult to comprehend because almost everyone knows one another. It often is difficult to determine who supplies to whom".

These networks in Belgium and the Netherlands initially may appear large but upon a closer look these individuals often operate alone or with a few others, and are often connected due to their shared socio-cultural background. For instance, in the 'Rolf Case' the group's active core was comprised of 14 suspects with extended contacts and little status differentiation, and it suggested that

most worked as small groups or loosely linked individuals as opposed to large, highly structured criminal organizations (see also Natarajan (2006) on heroin distribution networks). Nevertheless, it could be that these individuals or 'solo workers' might still be part of a large network, but that the extent of the networks could not be identified due to the methods adopted in this research (Decorte et al., 2013). It is difficult to examine such a broad scope based on the ethnographic fieldwork and interviews employed in this research, and the criminal justice cases are restricted as investigations usually stop 'at the border'. While dealing networks could be mapped between Belgium and the Netherlands, it remains difficult to obtain a complete overview when suspects resided in other foreign countries. Further research is needed to construct a more complete picture of the share of AAS manufacturers and PIED distributors in other countries, and their collaborations in the Dutch and Belgian PIED market.

7.5 Stable versus unstable PIED dealing networks: the growing presence of market oriented dealers and the withdrawal of socially oriented dealers

An important difference between Belgium and the Netherlands is that PIED dealing networks in the Netherlands seem to be more stable than in Belgium: often the same individuals and groups stay involved. While of course new players enter the Dutch PIED market, and old ones leave (e.g. due to arrest or a business dispute), there is a stable group of Dutch dealers that remain involved in this trade (de Hon & van Kleij, 2005). For example, Thomas mentioned the following about the Dutch PIED dealing networks:

> "T: Yes, they *are quite stable*. It *seldom happens that they split up*. Often when they split up, it is a business dispute about money. I know one group from whom the main two people separated […] now one does the distribution part while the other is more involved in the production process." (Thomas, Dutch official, interview)

Moreover, in the Dutch criminal justice cases the same suspects keep recurring but are almost never criminally pursued and/or convicted. Another indicator of stability in the Dutch market is the final destination of the packages confiscated by the Dutch customs service, which shows that the majority of the parcels are intended for the same addresses/areas, implying that the same individuals or groups remain active in the PIED market. Previous research (Koert & van Kleij, 1998; Snippe et al., 2005) likewise confirms that the same individuals stay involved in the Dutch PIED market.

Indeed, during my fieldwork Belgian and Dutch dealers and users confirmed that the same people are involved in this trade for quite some time. The reason for this stability may be that there are few incentives for Dutch

dealers to leave the market. For example, Alex, a Dutch helper, confirms that law enforcement personnel in the Netherlands pay little attention to PIEDs:

> "A: It is an attractive trade [PIEDs], because *the risks are less big* when, for example, compared to [illegal] drugs. If you engage with heroin or cocaine the penalties are much more severe. *It (PIEDs) has no priority within the Justice department*. […] Sometimes I wonder, because they [PIED dealers] stay out of range, if they have a deal with the government that they pass certain information or something. Well it has clearly no priority, when you are in this trade *it is also less dangerous than hard drugs*. Also, you have *to fear less of your competitions or rip deals*, so in that sense it is attractive." (Alex, Dutch helper, interview)

During the interviews Dutch officials seem to be quite aware of the activities of certain PIED manufacturers and dealers but mention that due to low priority these dealers are not criminally pursued. So, while higher penalties were implemented in 2001 (e.g. maximum of six years of imprisonment), most suppliers still have a much lower risk of imprisonment and lower arrest and assets seizure than suppliers of other illegal goods and services. In addition, several of these dealers are ingrained in the socio-cultural environment of users (e.g. easy access to users, high trust), and the ease of setting up your own UGL (e.g. cheap production), provides such suppliers with an ideal position in the Dutch PIED market to conduct their illegal business.

Nevertheless, de Hon and van Kleij (2005) noted that a new kind of dealer appears to be on the rise over the last few years. Due to the lack of enforcement and the potential profits to be made the PIED market has become interesting for what in this research is labelled as 'market oriented dealers'. Market oriented dealers are suppliers for whom securing profits is paramount as their involvement in dealing PIEDs derives predominantly from economic incentives (Category A of figure 1; see chapter 6). These dealers are very different from the 'traditional' dealers or 'socially oriented dealers' discussed above who often combine the sale of PIEDs with advice on dietary and training issues. Such illegal entrepreneurs often have no direct link to the gym environment, and are attracted by the money to be made. For example, in the same interview with Thomas, he mentioned the following:

> "T: You also see Bulgarians and people of former Yugoslavia who are active in this world. Well there is money to be made and that attracts those people. If you saw what we intercepted on the A2 (Dutch highway), that was a Bulgarian truck." (Thomas, Dutch official, interview)

The cases lend further conformation that people from other countries and/or with no connection to the users' environment are increasingly becoming involved in the Dutch PIED market. For example, in one Dutch case from 2009 a Polish suspect was arrested for possessing 15,400 AAS tablets (case 24 NL). Another example is the earlier mentioned case involving the Dutch suspect Dennis who produced his own AAS and distributed them over the Internet (case 8 NL). The problem of the rise of these market oriented dealers is that they bring with them a host of increased risks such as the loss of expert advice (e.g. cycles), PIEDs of bad quality and a 'hardening' of the market (de Hon & van Kleij, 2005). However, these traditional dealers (e.g. Nathan) in the Netherlands still have a dominant position in this market due to their high socio-cultural attachment to the users' environment (e.g. easy access to users, high trust, cultural knowledge) and the low priority amongst investigation services. Consequently, as these socially oriented dealers have such a solid base in the PIED market, along with little incentive to leave, it is more difficult for other, 'newer' dealers to compete and to monopolise this illicit market, which in part explains the more stable structure of Dutch PIED dealing networks, despite the rise of market oriented dealers.

In contrast, the Belgian market is less stable and more susceptible to change. An important reason behind this lack of stability is that, like the Netherlands, market oriented dealers are a growing presence in the Belgian PIED market. Indeed several recent Belgian cases confirm that PIED dealers who have no connection with the socio-cultural environment of the user, and more often are active in other illegal practices (e.g. sell other illegal drugs), are increasingly becoming involved. For example, in one Belgian case from 2011 a Belgian suspect was arrested for producing AAS in his metal factory and distributing them over the Internet. In addition, raw material of amphetamines and amphetamine tablets were found as well (case 8 BE).

However, a difference with the Netherlands is that at the same time the more socially oriented dealers seem to be retreating from the Belgian market. One reason for this is that (sport) physicians are increasingly being targeted both in the world of sport and by law enforcement. Consequently, these 'medical experts' are withdrawing from the market and demand may be progressively fed by suppliers operating in the illicit PIED market (Fincoeur et al., 2014). These white-collar offenders are more deterrable than underground criminals because they have more to lose by criminal conviction or informal means of stigmatization (e.g. status, a job) (Paoli & Donati, 2014). The following two quotes illustrate the growing presence of market oriented dealers and the withdrawal of socially oriented dealers in the illicit PIED market:

> "C: […] In Belgium when they arrest you, and you right away are behind bars for a couple of years. In the Netherlands that is not the case. They take your stuff, and then they [PIED dealers] can

> just stay with their friends. […] I did not make much money with it. […] *So it is not worth the effort, for the risk you take*. […] It used to be people who had knowledge, for example, of what the product contained [including himself], *and now it basically can be anyone*.
> KvV: Did that affect the quality of the steroids?
> C: Yes, I think that most groups who now are involved *just are interested in profit, and not in the progression of the athletes*." (Chris, Belgian ex-distributor, interview)

> "R: […] People come to the Netherlands because there are *too many risks in their own country*. I knew a very big guy who dealt steroids [in Belgium]. And *he quit because it was not worth it*. And that was a sport guy who did competitions on a national and international level and he just found it too important. So now he just takes care of himself and the rest he withdrew from. […] Other guys are also now meddling, like the ones they recently arrested. Those were *Moroccans who were described as dangerous and armed*. *Well of that kind of guys you now have enough of them* [in Belgium]." (Roy, Dutch producer & distributor, interview)

In addition, in the Flemish part of Belgium in particular the withdrawal of these socially oriented dealers seems to be related to the increased doping controls conducted in certain gyms since 2005-2006. The Flemish and French national anti-doping authorities (NADOs) performs these doping controls in collaboration with the police. Often gyms are targeted where there is a suspicion of PIED use and/or trafficking practices. In the majority of the cases the targeted gyms specialize in (competition) bodybuilding, and/or other weight-training sports (e.g. power-lifting) (Flemish Parliament, 2013, July 2). When tested positive the police are allowed to intervene and, are able to conduct house searches in an attempt to discover trafficking activities.

As a result of this targeting, dealers involved in gym or bodybuilding subcultures are retreating; as the potential profits made from this illicit trade are not worth getting caught trafficking by the police. For these dealers bodybuilding is their way of life and the dealing of PIEDs is easily given up if it interferes with their bodybuilding activities. In addition, like the medical experts, these PIED dealers are more deterrable than market oriented dealers as they have more to lose. For example, as the quote above from Chris illustrates, he stopped dealing PIEDs as it became too risky for him to be involved in this trade. Chris also has been investigated by the police but in the end was only convicted for possession, as there was not enough evidence to pursue him for dealing. Nevertheless, it made a big enough impression to deter him from dealing PIEDs. Both Belgian/Dutch users and suppliers mention that it is increasingly more difficult

to obtain PIEDs through a personal (e.g. bodybuilding coach) or legal contact (e.g. physician) in Belgium, and instead resort to the Internet where more market oriented dealers are present. It seems that these interventions in Belgium have been successful in eradicating the least harmful and most easily deterred suppliers and instead has may be attracting more dangerous individuals and groups, inadvertently provoking harm.

A similar development was established in the research of Kraska et al. (2010) who investigated the U.S. PIED market. The authors conducted interviews with their contacts a year after their research and found the PIED dealing network under study had changed dramatically. Their central informant had completely given up bodybuilding, no longer obtained raw AAS from foreign websites, his PIED dealing operation had been reduced by 90%, and he had reverted back to converting cattle steroids in order to pursue his new lifting passion, power-lifting. The explanation for this change was that he was no longer able to maintain his underground business because of a recent federal law enforcement control effort (operation Raw Deal). Nevertheless, it may also just appear that socially oriented dealers or traditional dealers are withdrawing from the PIED market. For example, Snippe et al. (2005) remarks that after the amendment of the Dutch Act in 2001 Dutch suppliers simply started to become more careful. This amendment led to more severe punishments and the possibility to deploy more investigative tools (see chapter 2). Therefore, it could be that these socially oriented dealers are not necessarily withdrawing from the Belgian market, but have just become more selective in their choice of customers. Either way, obtaining PIEDs through these dealers has simply become more difficult for (certain) users.

In a similar vein the increased law enforcement in Belgium has raised the stakes of participation in the PIED market. As dealers leave the market, those willing to work in a high-risk environment move in (Werb et al., 2011). These market oriented dealers calculate the legal penalty as a professional hazard, and if necessary use (the threat of) violence to protect their market share. Similar effects have long been well established in other illicit drug markets (o.a. see Dorn & South, 1990; Caulkins & MacCoun, 2003; Decorte, 2010). The increased law enforcement activity in Belgium has created pressure to change. As a result, the Belgian PIED market is susceptible to shifts as dealers weave in and out of the trade, and constantly move up or down in this market. In addition, the growing use of the Internet makes it easier for all kind of dealers to enter the market (Buxton & Bingham, 2015). For example, having a well-trained body or cultural knowledge is now less essential, or has no advantage, as there is no personal contact with the buyer. As such, the dynamic influence of both technology development and law enforcement has affected the structure of the PIED market in Belgium.

In addition, several scholars note that the increased risks imposed by the police on suppliers may translate into higher drug prices (e.g. drugs becomes

less available) which could attract more market oriented dealers and 'organized' criminals who are willing to take risks (Kerr, Small & Wood, 2005; Reuter, 2010). The higher prices function as a premium charged for the high risk that drug dealers take. According to this reasoning the prices of PIEDs in Belgium should be higher due to their intensified enforcement efforts, therefore, attracting more risk-taking dealers who charge higher prices due to the increased risks. However, this scenario was not established in this research: rather, prices have remained quite stable in both the Netherlands and Belgium. Initially PIEDs prices were set quite high since there were only a few illegal sources from which to obtain these products (Koert & van Kleij, 1998). Yet, as the share of (foreign) underground laboratories (UGLs) and later AAS selling websites started to grow prices began to fall again.

Similar effects were noted by May and Hough (2004) who found that the prices of illegal drugs in Britain have either been stable or falling. They argue that this insensitivity of prices to enforcement may be due to dealers being "'profit satisfiers', not maximisers" (p. 559). Meaning that drug suppliers set their prices based on their experience in what has worked well in the past. Similarly, PIED dealers know that setting a higher price may lead to users going to the cheaper competition. The ease with which PIEDs can be produced and obtained and the large demand results in an extremely broad supply base, making it difficult to affect the price through enforcement methods (ACC, 2011; Paoli & Donati, 2014). Paradoxically, the very act of sustaining prices may actually stimulate the illicit PIED market in Belgium by attracting entrepreneurial dealers. By sustaining prices and by increasing risks of criminal sanctions, the PIED market becomes a more lucrative business for dealers who are willing to take risks (e.g. getting caught by police, market violence). Such PIED dealers are driven by the great demand for PIEDs and the financial rewards it brings.

In sum, the data suggests that PIED dealing networks in the Netherlands seem to be more stable than in Belgium. The reason for this stability may be that there are little incentives for Dutch dealers to leave the market (e.g. low priority amongst law enforcement, little violence). These PIED dealing networks in the Netherlands remain relatively stable as traditional or socially oriented dealers hold a strong position in the market (e.g. easy access to users, high trust), making it more difficult for other, 'newer' players to compete. In contrast, the repressive climate in Belgium has supported the withdrawal of socially oriented dealers, and provided more market oriented dealers with the opportunity to fill this gap. These socially oriented dealers are withdrawing from the market as they are increasingly being targeted and sanctioned both by the world of sport and by law enforcement (Fincoeur et al., 2014). Finally, the growing use of the Internet has made it easier for all kind of dealers to enter the market. This advancement in technology is restructuring the market for PIEDs by diminishing the role played

by socially oriented dealers, and provides more market oriented dealers with an ideal platform to grow their business.

7.6 The role of violence in the PIED market

A particular concern of the growing share of market oriented dealers in the illicit market for PIEDs is that it will lead to an increase in violence. Literature on drug trafficking illustrates that these kinds of dealers often do not shy away from using (the threat of) violence if it means that favourable positions will be secured (a.o., Caulkins, Reuter & Taylor, 2006; Jacobs & Wright, 2006; Werb et al., 2011). In particular, violence is increasingly understood as a means used by individuals and groups to gain or maintain market share of the lucrative illicit drug trade (Werb et al., 2011: 87). However, several studies have shown that violence amongst drug traffickers is not as common as originally thought. Rather, dealers often consider this bad for business and therefore as something to be avoided (Dorn et al., 1998; Pearson & Hobbs, 2001; Morselli, 2001; Desroches, 2005).

The suppliers of PIEDs in Belgium and the Netherlands are reported to rarely use violence to solve market-related disputes (see also Paoli & Donati, 2014). In general both Belgian/Dutch authorities and dealers describe the PIED market as non-violent.

> "T: The violence against Noah, that was very extreme. Well, that was probably something he caused, because otherwise four people would not think of taking his life, and that is what happened. *But much violence, no not really*." (Thomas, Dutch official, interview)

> "KvV: Would you describe the [PIED] market as violent?
> S: No, no, no, absolutely not. I mean it is such a small world and most are just normal people. I *never have been threatened or anything*." (Sammy, Internet dealer, interview)

The use, or threat, of violence seems to be rather exceptional and market-related disputes appear to often be resolved by other forms of informal control (see Jacques & Wright, 2011). Using violence is usually not the preferred way to handle a conflict because it, for example, is likely to attract unnecessary attention from the police. These PIED dealers, therefore, prefer to run their business in a non-violent manner in order to prevent exposure of their covert PIED dealing operations. For example, PIED manufactures of an original underground brand, who are being 'knocked off', incorporate more sophisticated techniques (e.g. put in code online to check authenticity) to separate their products from counterfeit instead of trying to eliminate their competition through the threat or application of violence.

In a timespan of ten years (2003-2013) only two Belgian and two Dutch cases report violence. Moreover, the field contacts informed me of one other case in which a Dutch PIED dealer was killed, bringing us to a total of five violent incidents in ten years. Dutch officials often refer to the 2006 'Pinkie' case, in which three Belgian suspects cut a Dutch man's pinkie finger off and cut the hair of his girlfriend short (Case NL 23). However, the interviews with the authorities revealed that the Dutch man did not have anything to do with the PIED market, but instead was caught in a love affair. One of the Dutch suspects called "Freeky Freek" was in love with the partner of the victim. As revenge, Freeky Freek told another Dutch PIED dealer that the victim supposedly owned an UGL named "Feralab", and was manufacturing and selling PIEDs cheaply on the Internet. Freeky Freak hoped that the girlfriend of the victim would hear of this and as a result would leave the victim. Instead the Dutch Dealer became angry over the victim's alleged PIED dealing and informed Belgian suppliers about the situation. These Belgian dealers were related to the Flemish neo-Nazi group "Blood, Soil, Honour and Loyalty" (BBET) and were not unfamiliar with violence. The Belgian suspects went to the victim's house in an attempt to deter the supposed competition. One Belgian example is from a case in 2009, in which a Belgian bodybuilder, Walter, was killed during a robbery at his house. The Saturday before Walter was murdered, two of the perpetrators went by his house to purchase AAS. During the visit Walter showed the two Russian suspects a large sum of money that he had earned from dealing in these products. The two suspects decided to rob Walter of his money and they returned to his home together with two other men. The four burglars used such excessive force that Walter eventually died (Bos, 2011, September 1).

The three other cases were directly related to other illicit drug markets and personal conflicts, and had little to do with the PIED market. For instance, one Belgian suspect who produced his own AAS was shot to death by two drug dealers in the Netherlands because of his involvement in the illegal drug trade (speed) (case 8 BE). Nevertheless, while the actual use of violence in the PIED market rarely occurs, threats of violence were reported more frequently. Importantly, it appears that individuals and groups who operate in other drug markets are the ones that that experience and/or use (the threat of) violence, rather than those who solely operate in the PIED market (e.g. Chris). The main drive to commit these violent acts seems to be related to money. Similar findings were found in the research of Decorte and Paoli (2014: 7) on cannabis production in Belgium. The authors report that among the survey respondents who grow for profit, a higher proportion experienced threats and use of violence and physical consequences of violence, than those claiming to grow for other reasons (either as an offender or victim). They argue that financial matters are an important reason for conflicts: in that sense, people who do not grow for profit are less likely to end up in such conflicts. Therefore, it could be that as this share of market oriented dealers grows in Belgium and the Netherlands the

threat or use of 'systemic violence'[66] (Goldstein, 1985) may become more prevalent.

Nevertheless, in general this form of control by violence is less common and PIED dealers seem to prefer to handle conflict through toleration or avoidance (see Jacques & Wright, 2008 in regards to drug markets). The fact that violence is less frequent may also be a result of the integration of PIED dealers in the users' environment. For instance, the PIED dealers connected to bodybuilding have a legal profession that often requires them to interact with users and other dealers, even after the transaction has occurred. These dealers are usually friends or 'friends of friends' and interact with these users on a daily or weekly basis. For example, the coach who supplies PIEDs to bodybuilders often still needs to help these users in other areas (e.g. nutrition, training). The use of violence may undermine the identity and status of the dealer, and could hamper both his legal and illegal activities. Moreover, the fact that violence is rarely reported also reflects the white-collar background of many PIED suppliers (e.g. physicians) (Paoli & Donati, 2014).

Importantly, several studies have shown that an increase in drug law enforcement interventions to disrupt drug markets may actually increase violence rather than reduce it (e.g. Decorte, 2010; Bowling, 2010; Werb et al., 2011). A repressive approach might lead to a 'tougher' PIED market, with more criminal organizations and more criminality. The previous section confirms that other individuals and criminal groups are becoming more interested in the PIED market. Roy has contacts all over the world and reported that in the more repressive countries more dangerous groups are involved in the PIED market:

> "R: Where they have zero-tolerance towards the trade such as Sweden and Denmark, just to name a couple, the profit increases along with the [increased] risks (longer prison sentence). The dealers are *much more dangerous boys*, Angels and Bandidos and organized crime. I have helped Simon [pseudonym] (Hells Angels Sweden) a lot with information and analysis [of the quality of PIEDs]. I have a video of the raid with automatic and semi-automatic machine guns. They also *often kill the competition or rob a pharmaceutical company.*" (Roy, Dutch producer & distributor, electronic contact)

In a recent report of Interpol (2014) Sweden, Canada and the United States (US) were also mentioned as countries in which the Hells Angels have been involved with the manufacturing and distribution of counterfeit PIEDs and the robbing of

[66] Systemic violence is a type of violence associated with "traditionally aggressive patterns of interaction within the system of drug distribution and use" (Goldstein, 1985: 497). Examples of systemic violence are retribution for failure to pay debts and territorial disputes (Goldstein, 1985).

trucks transporting various prescription medicines. While organized crime figures and the use of violence are not that prevalent yet in both the Netherlands and Belgium, it may be that the PIED market will head towards this direction if law enforcement pressure continues to grow and crackdown on socially oriented dealers, or if the market remains unregulated as in the Netherlands, allowing market oriented dealers free rein.

7.7 Conclusion: Belgium, the Netherlands and the illicit PIED market

Until the late 1990s most PIEDs in the Netherlands and Belgium came from a legitimate medical source. These products were obtained either through a local pharmaceutical source or through a country in which there was less regulation on the pharmaceutical industry. Initially Belgium played a role in the Dutch market due to its accessibility of PIEDs through these legal sources (e.g. Belgian pharmacies). However, after stricter regulations were imposed on the pharmaceutical industry these roles have reversed. Like other countries (Llewellyn, 2010a; Paoli & Donati, 2014), the Dutch and Belgian market has devolved into a market in which most PIEDs are either counterfeited or produced illegally, and are often sold online or through a personal contact. However, a difference is that the Netherlands seems to be more reliant on the domestic production of AAS, while Belgian users are increasingly going to the Netherlands or other countries to obtain PIEDs or order it online through a (Dutch) AAS selling website. In the next chapter I will expand on why UGLs play such a large role in the Netherlands, while in Belgium the Internet seems to be more popular.

Further, the data indicates that the Belgian and Dutch PIED market are highly intertwined. In the majority of cases a Dutch dealer produced and/or distributed PIEDs to a Belgian dealer who then supplied the products to other Belgian dealers or users. Nonetheless, there were likewise cases in which no connection was found between both countries and instead the PIEDs in their final form or raw materials of AAS were obtained from other foreign countries. In these countries there is often less regulation on the pharmaceutical industry, making it easier to illegally produce and distribute PIEDs. It seems that the pharmaceutical industry plays a rather large role in the global PIED market. Finally, PIED dealing networks in Belgium and the Netherlands are often composed of a number of smaller cells and co-offending groups that engage in PIED production, distribution or other illegal PIED-related activities (e.g. money laundering) and operate independently of a larger structure. While initially mainly socially oriented dealers occupied the PIED market in Belgium and the Netherlands, illegal entrepreneurs or market oriented dealers have seen the potential to start a PIED dealing business as the trade has become bigger and more profitable. Both countries have attracted more overtly criminal types driven by profit, who are linked to other criminal activities (e.g. selling other

illegal drugs), and who are more prepared to use (the threat of) violence to protect their market share. However, Belgium is seeing socially oriented dealers retreating while such dealers in the Netherlands still hold a dominant market position. This may in part be explained by the risk (e.g. enforcement pressure) of participating in this market, and the growing role of the Internet.

Chapter 8

The Dutch paradise for home producers and the digital 'gold rush' in Belgium

Whereas in the late 1980s the Dutch and Belgian PIED market was supplied predominantly by pharmaceutical sources, initially domestic (e.g. Belgian physicians) and later foreign (e.g. Polish pharmacies), a major shift occurred in the mid-1990s. Nowadays PIEDs are predominantly obtained through UGLs located both domestically (e.g. brand Generic Supplement in the Netherlands) and manufactured and supplied by foreign sources (e.g. Alpha-Pharma from India). As the previous chapter highlighted, in the Netherlands the domestic production of steroids has grown over the years while in Belgium this only occurs on relatively small scale. Alternatively, the Internet trade appears to be a more rapidly growing source to purchase and sell PIEDs in Belgium. This chapter explores the production of AAS and the Internet trade in more detail, and attempts to further unravel the complex relationship between the Netherlands and Belgium.

In the first half of this chapter I will explore the factors that contribute to the growing domestic production of AAS in the Netherlands. Particularly, this chapter examines the various steps individuals must undertake to set up their own UGL, and the issues that arise from underground production. UGLs produce, in particular, AAS and are often also referred to as underground *steroid* labs. Therefore, in this chapter the term "AAS" or "steroids" will be used instead of PIEDs when discussing UGLs. In the second half of this chapter I will account for the growing role of the Internet as a medium for Belgian users to order PIEDs, and for (Dutch) dealers to sell their products (often on the Belgian market). Specifically, I will examine the attractions of ordering and selling over the Internet, and discuss several problems that result from these AAS selling websites.

8.1 How to start an UGL: the ordering of raw materials

Most raw materials that are imported to the Netherlands and Belgium come from China. For example, the statistics of the Dutch customs service show that 95% of the raw materials confiscated originated from China. However, the fact that

China is one of the main suppliers of raw materials of AAS is not unique to this market, and thus is not unexpected. In general there is the issue of counterfeit or substandard medicine[67], medicinal powders (Pincock, 2003; Lewis, 2009) and new psychoactive substances (NPS) (Sumnall, Evans-Brown, & McVeigh, 2011) coming from Asian countries, and in particular China. In 2001, it was estimated that China had roughly 500 illegal medicine manufacturers (Pincock, 2003; Lewis, 2009). Due to the limited regulation of counterfeit or substandard medicine in China and other Asian countries, combined with the high demand in Western countries, it is difficult stop this illegal trade (Lewis, 2009).

In the course of this research I approached an Asian pharmaceutical company in order to develop a better understanding of these distribution channels. By typing in Google.nl and .be "order raw materials steroids" several websites popped up through which raw materials could be ordered. After browsing through several websites and consulting with some of my contacts, I decided to electronically contact a company that was located in China. In my initial email I asked for information on the price of various types of raw materials of AAS and what the shipping procedure was. Specifically, I mentioned that the raw materials needed to be shipped to the Netherlands, to which they responded: "We have rich experience in shipping powders to Netherlands. Until now, the customs clearance rate is 99.9%. Here are recent tracking numbers for your reference [several tracking numbers are attached]" (Agnes, raw powder supplier, electronic contact). The tracking numbers mentioned in the email indeed existed and showed that recently several packages were shipped from China to the Netherlands. When contacting Agnes, a raw powder supplier, under a different e-mail address, acting as a Belgian customer, he/she noted that the Netherlands would be easier to ship to than Belgium, as the packages were more likely to be confiscated in Belgium. No tracking numbers were provided to indicate that Belgian packages arrived from China. Nevertheless, he/she assured me that if chose to ship to Belgium, the shipping methods would conceal the nature of the powders, and therefore would likely not to be discovered by Belgian officials.

After the first contact was made with Agnes, I started to receive emails every day for around two weeks. Agnes offered me discounts[68] and included proof that his/her raw materials were of good quality. For instance, Agnes sent me pictures of semi-finished AAS that were produced from their powders, showed me lab results of steroids to verify the quality, and was even willing to ship a free sample containing five grams of testosterone enanthate. Finally, to guarantee me that the shipping methods they used were safe, Agnes included several pictures of how the products would be shipped (see picture 2). In addition, other services were offered to help start up my business. For example,

[67] AAS is considered medicine.
[68] Agnes would give me a 3-6% discount if I would order in bulk.

Agnes offered to send me instructions to show how to make AAS. Moreover, all the necessary equipment to produce AAS could be ordered through them as well (e.g. needles, vials, tablet press machine). This example illustrates how relatively easy and safe it is to order raw materials, in particular to the Netherlands.

Picture 2. Example products of how the raw materials are packaged and shipped.

During my research, Dutch officials often mentioned that the lack of regulation of the raw material of AAS facilitates the growth of UGLs in the Netherlands. Prior to 2013, raw material could be legally imported to the Netherlands and it only became a criminal offence when the raw materials were processed into a pharmaceutical form (e.g. tablets, injectable AAS). Because of this the Dutch customs service was not allowed to confiscate raw materials unless they could prove that they were to be converted into a pharmaceutical form of AAS. In contrast, in Belgium you are not allowed to import or possess raw materials of hormones (including AAS) since 1974. However, in the Netherlands by the end of 2013 an additional measure was adopted and implemented to control for the import of raw materials of medicine. While before anyone was free to order these raw materials to the Netherlands, you now need to be registered at Farmatec[69] to be able to import these substances. Without this licence the customs service is allowed to confiscate the package and ultimately destroy it if the receiver does not claim it. Nevertheless, some Dutch officials mention that it is quite easy to register with Farmatec and wondered if this barrier will truly have an effect on the existing and/or potential UGLs in the Netherlands. For instance, the problem still exists that the producer of AAS often cannot be located (raw materials are often sent to fake addresses). It seems that the lack of regulation and control of raw materials in the Netherlands facilitates the unauthorized production of AAS, resulting in the growth and stability of UGLs. Future research is needed to examine if the new measure adopted in 2013 is effective against this type of crime.

[69] Farmatec is concerned with the quality, availability and affordability of medicines, medical devices and blood products. Farmatec's responsibilities include, for example, providing pharmaceutical permits and opium exemptions. For more information see: http://www.farmatec.nl/.

After receiving your raw materials and gathering all other equipment (e.g. filters, oil) that is needed to produce your own AAS, the process can begin. One thing that surprised me during my research is that the production of your own AAS is presented as a relatively easy process. On many bodybuilding forums a 'steroid guide' can be found to make your own oral and/or injectable AAS. In fact, the production for own use almost seems to be promoted on these forums, as it is perceived as a safer method as opposed to ordering final products. For instance, a well-respected member of a bodybuilding forum mentioned that it was "cheaper, assured delivery [of raw materials] and less chance to be stopped", and, "no chance that legal actions are taken against you" (Dutchbodybuilding, 2002, October 22). The general consensus on these forums is that it is a cheap method that excludes potential problems such as availability and uncertainty as to the legitimacy of the product, not least to mention law enforcement. Roy, the Dutch producer and distributor mentioned earlier, is a trained chemist and suggested that his background gives him very little advantage in the field. He mentions that due to availability of information and scientific research anyone can basically start an UGL. The fact that someone does not have to acquire specialized knowledge for producing AAS also becomes clear in the following quote:

> "A: The last two decades *underground labs pop up "like mushrooms out of the ground"*. The principle is very simple: you order (through the internet) your raw material from China, for example here [link of website included]. From that you make your "orals" (pills) or "injections" (fluids, to inject). *You don't need to have studied chemistry for that, or to invest in expensive equipment*. In the most unfortunate cases (think of producing in a sterile environment) something is just brewed in the bathroom." (Alex, Dutch helper, electronic contact)

Together with Alex, I undertook all the necessary steps to set up my own UGL. We contacted several companies in order to get all the supplies (e.g. bottles for filling, caps), calculated what our costs would be and how much we could sell the product for on the current market, gathered information on how to produce, created a brand, etc. In short, we did everything in order to start an UGL, except for actually ordering the raw materials and producing the product, as this would be considered a felony. This experience taught me how easy and cheap it is to manufacture your own AAS. In addition, it allows for personal specifications in the sense that I could make any steroid of various strengths depending on what my goal would be for using these products. The point being that the minimum know-how to manufacture AAS is now easily available though the Internet and word-of-mouth among friends (e.g. see Decorte (2010) in relation to cannabis

cultivation). Basically anyone can start his or her own UGL with very little knowledge, effort or risk.

8.2 Producing your own steroids: the growing underground market in the Netherlands

Belgian officials have claimed that most PIEDs in Belgium are coming from Dutch UGLs, and have suggested that in the last two years (2012-2013) these Dutch UGLs have doubled from four to eight (*KRO*, 2013, February 28). While Dutch officials do not confirm this exact number, they do agree that Dutch UGLs are becoming more prevalent. The former claim is also supported by the seizure statistics (see chapter 7). For example, Thomas, a Dutch official, mentioned the following about Dutch UGLs:

> "T: There are at least two [UGLs active in the Netherlands]. Generic Supplements is definitely from Dutch ground. However, Genesis is not, but DNA Pharma, yes. When you search for DNA Pharma you find it nowhere else in the world, except here." (Thomas, Dutch official, interview)

Dutch dealers also validate that there are several big UGLs active in the Netherlands. For example, Roy stated,

> "R: There are actually a couple of big labs: Golden Gear, Euro Pharma, Generic Supplements and Hardcore Labs. And then you have Win labs in Belgium, but they are not really big. And DNA [Pharma], but that actually originates from England, but is also produced here [in the Netherlands]." (Roy, producer & distributor, interview)

This last quote also illustrates that it is difficult to pinpoint from what country a particular underground brand originates. While Thomas was convinced that DNA Pharma is a Dutch company, Roy suggests that this brand originally was produced in the United Kingdom (UK). Further, Roy explains that he produces AAS and distributes the same product to different dealers in different countries. These dealers put their own brand on the product before distributing it. This means that the same illegally produced steroids from the same UGL can have two or more different brands, and are sold in multiple countries. These products are made by the same AAS manufacturing lab but are sold under the own proprietary brand of these PIED dealers. Nonetheless, while the exact number of UGLs is unknown, it is clear that these underground producers are becoming more prevalent in the Netherlands. In addition to the large UGLs, there are many individuals who manufacture AAS for their own use and/or supply to a small

group of people. For example, Joost, the friend of Alex mentioned in chapter six, mostly produced AAS for himself, but sometimes also distributed to his friends. Similar developments can be noted when it comes to the cannabis cultivation market (e.g. see Hough et al., 2003; Potter, 2007; Decorte, 2010; Decorte et al., 2011). There are many cannabis growers who primarily grow for personal consumption and to share with friends. Thus, if these individuals, who also produce PIEDs, would be included in the amount of UGLs, the figure would likely exceed the eight described by the Belgian officials. Nonetheless, when compared to other illicit drug markets this number - the eight Dutch UGLs according to the Belgian officials - seems to be relatively low. For instance, in 2013 44 drug labs (XTC and amphetamines) were discovered and disabled in the Netherlands, compared to 29 in 2012 and 24 in the year before that (van Wely, 2014, May 6). Officials suggested this to be just the "tip of the iceberg" considering that the police in 2013 discovered 'drug waste' from illegal drug labs in 150 cases (Van Wely, 2014, May 6).

In contrast to the Netherlands, in Belgium little domestic production seems to take place. While some UGLs exist in Belgium, the difference is that these Belgian UGLs seem to be producing and distributing on a rather small scale when compared to the Dutch UGLs. In a couple of Belgian cases there were indications that suspects were manufacturing their own AAS and selling it to customers. However, only in one case in 2011 was substantial evidence found that a Belgian suspect was producing and distributing AAS on a larger scale (Case 8 BE). Another example is the case of a Belgian suspect who had everything in place to start his own UGL (e.g. raw materials of AAS, two tablet press machines, a professional mixer, wrapping material) before being arrested (Case 7 BE; see chapter 7). Belgian officials recently arrested this suspect again for the same offence, the only difference being that he changed the brand name of his product from "Pure Pharmaceuticals" to "Ultimate Pharma" (UP) (see picture 3).

Two factors specifically contribute to the growth of UGLs in the Netherlands. First of all, the growth of UGLs is facilitated by the lack of regulation on the raw materials of AAS in the Netherlands. Second, the relative ease of producing your own AAS contributes to the growth of UGLs. However, this is not specific to the Dutch situation and applies to the production of AAS in general. As Kraska et al. (2010: 171) mention, these opportunities "to create whatever AAS" at "a greatly reduced price" are attractive for dealers wanting to set up or expand their PIED dealing businesses. UGLs allow PIED dealers to manufacture nearly any AAS on the market, and at whatever strength is needed to get impressive results (Kraska et al., 2010). However, due to lax regulation in the Netherlands UGLs are able to promote and market their products, focus on brand recognition, and do not have to go to great lengths to hide their practices (see also Llewellyn, 2010a on UGLs in the US). Thus, the ease with which these raw materials can be ordered to the Netherlands, combined with the relative simplicity of converting

these cheap precursor chemicals into potent and profitable AAS, makes the Netherlands an interesting production site for PIED dealers to settle.

Picture 3. The left-upper corner is a picture of vials containing AAS from the brand UP, the right-upper corner is a sky view of the suspects' lab, and the bottom pictures are tools to facilitate AAS production (a scale (left-bottom) and a tablet press (right-bottom)).

However, the growth of UGLs in the Netherlands is not simply a consequence of their lack of policy. In countries with a repressive or 'zero-tolerance' approach a growth in domestic production is recorded as well. For instance, a similar trend was recently noted in Australia, where the use and possession[70] of PIEDs is criminalized (Goldsworthy & McGillivray, 2015, May 20). Indeed, the expansion of domestic AAS production is not just a Dutch development, but is a growing problem in many countries (Llewellyn, 2010a; Paoli & Donati, 2014). Even in Belgium the domestic production of AAS is slowly rising. In both Belgium and the Netherlands, and other countries, there is a significant demand for PIEDs, which is likely to grow in the upcoming years (Sagoe et al., 2014a). In addition, 'production techniques' are no longer monopolized by the pharmaceutical industry or a small group of illegal producers, but are now easily available through the Internet, allowing for many individuals to enter this market. As long as the demand for PIEDS remains strong the illicit production and supply of PIEDs will continue to exist, regardless of the legal barriers present in a country.

[70] In the Netherlands it is only illegal to possess PIEDs if there is intent to sell. In Belgium someone may be prosecuted for possession, however, this is rather exceptional and someone will in general only be criminally charged if there is a suspicion that the AAS or other PIEDs are being trafficked (see chapter 2).

The increase in steroid production, therefore, cannot be explained alone by the lack of regulation in the Netherlands and the over-regulation in Belgium.

8.3 From counterfeit production to manufacturing your own brand

An entire underground industry exists in the Netherlands in which PIED producers and distributors compete to have their brand leading the market. Initially most illegal PIED producers copied the packing of legitimate AAS products, also known as counterfeiting (Llewellyn, 2012, June 29). A popular AAS often copied was Deca-Durabolin (or nandrolone decanoate) from Organon (a legal pharmaceutical company). However, the most popular method used nowadays in the Netherlands and Belgium is to create your own unique underground name. For instance, there are now numerous nandrolone decanoate versions on the illicit market which all have their own underground trade name. This is not to imply that no counterfeit AAS exist as authorities still confiscate these products. These counterfeits are often so good that it is difficult to distinguish the fakes from the real ones: even the pharmaceutical company that produces the brand often cannot separate the two. At first glance, these illegal products are identical and basically the only reliable method to decipher between them is to test the confiscated items in a lab. However, pharmaceutical companies have never manufactured the underground brands of these UGLs and they only exist in the underground economy. Creating your own underground brand seems to be the most abundant one in the current PIED market (Llewellyn, 2012, June 29). Users are aware that these AAS are produced underground, but do not seem to care, and in some instances even prefer these brands.

Many market practices in the PIED market are similar to the legal promotion of goods: e.g. the use of brand names, offering deals, and the visual appeal of the product (Dawar & Parker, 1994). Brand names specifically have been found to be important in indicating product quality for PIED users. Favourable brands positively influence perceptions of quality and value, and a users' willingness to buy these illegal products (Dodds, Monroe & Grewal, 1991; Desai & Waller, 2010). Examples are Golden Gear (GG) and Generic Supplements (GS): two underground brands that are quite popular among Belgian and Dutch users. Some of these Dutch brands are even well known in other countries outside of Belgium. For example, on a U.S. bodybuilding forum a member mentions, "*No kidding. You are talking about Generic Supplements Europe. The guy who runs it is a trained chemist who has access to a fully functional lab. They [Generic Supplements] are the Cadillac of the underground, but the real stuff rarely makes it over here. It's all over Netherlands when I was there and a lot of top fighters use their brand. If you are in Europe you are lucky because these guys are a top-notch organization* (MESO-Rx, 2012, April 22). Due to the success of these UGLs, there are now even UGLs that counterfeit these popular underground brands as opposed to counterfeiting real pharmaceutical brands:

> "R: The real brand does not say anything. Generic Supplements is also counterfeited and is completely different from the real one. That garbage has not been tested yet but probably will be bad. Maybe they [the illegal producers] do it to damage the real brand or simply to make money." (Roy, producer & distributor, interview)

In the PIED market these brands are powerful, valuable tools for PIED dealers. However, in contrast to a legal business these illegal brands can easily be duplicated, as PIED dealers cannot take formal steps/measures to stop someone from copying their brand. Consequently, aspiring PIED dealers take advantage of a brand's good reputation to either eliminate competition or to earn money off its established name.

PIED dealers and users seem to alternate between products which are domestically manufactured by both small- and large-scale producers to AAS which originates from foreign countries. A reason for this is that users perceive these foreign products as being of 'pharmaceutical quality', also referred to as 'human or pharmaceutical grade' quality in bodybuilding communities. Users believe that these steroids are produced under Good Manufacturing Practices (GMP) including, for example, frequent drug testing, production in sanitary conditions and using the highest quality ingredients. For example, Aburaihan from Iran and Alpha-Pharma from India are popular brands amongst Belgian and Dutch bodybuilders. One of the Dutch officials also mentioned that he never tests Alpha-Pharma as it "is always of good quality". These foreign products can also often be tested for authenticity, giving users more insurance that the product is at least authentic. For instance, on Alpha-Pharma's website users may insert a serial number and authentication code to ensure product authenticity. Roel, a Belgian dealer, gave me a vial of this brand to test if the product was authentic. When I typed in the code on Alpha-Pharma's website it confirmed that the product was manufactured by their company. In these countries there are less restrictions on the pharmaceutical industry making it easier for individuals and groups to produce AAS and other PIEDs for the illicit market which are manufactured under GMP conditions. It may be that the quality of these steroids is better as opposed to the domestically produced brands in Belgium and the Netherlands. Nevertheless, as we will see in the next section the quality of illicit market products in general is quite poor: regardless of whether they are of domestic or foreign origin (Mußhoff, Ritsch & Daldrup, 1997; Ritsch & Mußhoff, 2000; de Hon & van Kleij, 2005; Graham et al., 2009; Llewellyn, 2012, June 29).

In this research two types of producers were found, on the one hand you have small-scale domestic producers who start producing AAS to satisfy their own needs or that of a small group friends. The most common reason for producing given by these dealers was that they started manufacturing their own

PIEDs to have better control over the quality of the product, and because it is cheaper (e.g. Joost) for personal consumption. These dealers and users are not looking for monetary gains, but rather seem to be more interested in guaranteeing the quality of the AAS. On the other hand, there are the more commercialised producers who manufacture AAS on a rather large scale and who are less interested in the quality and predominately care about the financial profits they can generate. An example is the Belgian suspect who produced his own AAS in his metal factory (case 8 BE), and the Dutch case in which Dennis produced his own steroids at home and sold them over the Internet (case 8 NL). The semi-legal pharmaceutical companies that produce PIEDs in countries with less strict regulations also fall into this category. Currently, we do not know the share of non-commercial or socially oriented producers in the PIED market, and whether this has increased or decreased. More research is needed to examine the precise ratio of small-scale production to professional large-scale production in the PIED market.

Similar findings were found in the cannabis market where on the hand you have old-school 'idealistic' cultivators and small-scale growers who aim to grow a product of higher quality. And on the other hand, you have more commercially oriented players who are not always interested in quality and in knowledge about the possibilities of the plant and are only interested in generating profit (Maalsté & Panhuysen, 2007; Decorte, 2010). However, Tom Decorte (personal communication, 2014, May 28) explains that this idea of 'idealistic' versus 'commercial' is a rather false dichotomy and that many growers fall into a 'grey zone'. For instance, he mentions Cannabis Social Clubs (CSCs), which are private organizations, or clubs of users that produce cannabis for non-profit distribution to adult members (Decorte, 2014). CSCs organize the professional, collective cultivation of small amounts of cannabis to cover the personal needs of their club members. CSCs are not necessarily 'idealistic' cultivators who grow cannabis for pure personal use or a small group or friends, but likewise do not fall in the more commercially oriented group of players as little to no profit is made. Indeed, in the PIED market there seem to be various types of AAS producers. For instance, consider Roy who produces AAS for monetary reasons while at the same time he is highly engaged in the users' environment and cares about their wellbeing. The motivations for manufacturing AAS vary; while some will clearly manufacture on a commercial scale, with profit as the main motive, others will simply produce AAS for their own use, often to control for the quality of AAS. Thinking back to figure 1 in chapter 6 these producers may come in a variety of 'types' and are motivated by a plurality of factors, often simultaneously. There seem to be more than these two ideal types ('idealistic' versus 'commercial') and multiple variations in levels of socio-cultural embeddedness and economic motivation exist.

8.4 The quality of illicit market steroids in Belgium and the Netherlands

A particular concern of Belgian and Dutch officials is that illegally produced AAS are of poor quality, as they are not manufactured according to pharmaceutical standards, leading to increased health risks. The quality of AAS is determined by several factors such as the purity of the raw materials and the sterility of the work environment. There are many potential differences between medicines made by registered pharmaceutical companies, and those made in illegal underground manufacturing operations. Pharmaceutical companies must adhere to very strict rules and regulations when manufacturing medicines (e.g. clean manufacturing rooms, use of sterile ingredients and post-production testing), while UGLs are left to themselves to assure product quality. Most users and dealers do not have the economic resources to test these underground products in a lab to see whether or not the quality is good. Almost all underground brands earn their reputation through trial and error, and the trust in a certain brand is heavily dependent on how users respond to the product. On bodybuilding forums brands are widely discussed and compared. Users post pictures of the products they purchased for others to comment on their authenticity, and to share their experience with it.

The term underground *labs* is also misleading as it implies that the steroids are produced under pharmaceutical conditions. Nevertheless, as the cases illustrate, these illegal substances are often produced at home in a non-sterile environments (see picture 4). For example, the first picture is from a Belgian case from 2011 in which the suspect produced AAS in his metal factory (case 8 BE). The Belgian police found boxes containing injection needles, empty bottles, caps, etc., a tablet press (right side, on the shelf), different types of AAS injectables (e.g. Stanozolol, Sustanon) and other illegal drugs (amphetamines). The second pictures were taken during a Dutch case from 2013 in which Dennis produced his own AAS at home (case 8 NL). The Dutch police discovered kitchen utilities used to produce AAS, raw materials of steroids, packaging material, etc. The house of the suspect was described as highly unhygienic; e.g. used injection needles were found in the production room[71]. However, the suspect displayed the production site on his website as being of high standing quality. For example, Dennis showed pictures of a pharmaceutical laboratory in which the AAS was supposedly produced. Yet, the suspect stole these pictures from another website - a licensed pharmaceutical company - and photoshopped his own brand name in the pictures (e.g. the logo and name of his brand was put on the uniform of the workers). Roy owned the only UGL I came across during my fieldwork in which AAS was produced under relatively sanitary and sterile conditions to guarantee the best possible produced quality. Roy sent me pictures of his lab, which he asked me not to publish, which suggested that the steroids were produced in

[71] The suspect was addicted to morphine.

quite sterile and safe circumstances. Other contacts that know Roy indeed confirmed the professional conditions in which Roy produces AAS. However, UGLs of this kind are unfortunately atypical and rather seem to be an exception to the rule (Llewellyn, 2012, June 29). So, while some UGLs are professional, with high standards of production (e.g. sterile environment, proper equipment), there are many who just produce at home in their 'kitchen sink'.

Picture 4. The picture on the left is a Belgian UGL discovered in a metal factory (Case 8 BE), and the pictures on the right are of a Dutch UGL discovered at the suspects' home (case 8 NL).

To test the quality of Dutch and Belgian underground products steroids, samples were collected in 2013-2014 and analysed in a professional laboratory (from hereon, lab). The lab wished to stay anonymous but is an accredited lab in the Netherlands. During my fieldwork I collected 32 samples from both Belgian/Dutch officials and dealers: 12 samples originated from Belgium and 17 from the Dutch PIED market. Additionally, a Dutch official sent me two test reports stemming from two 2013 PIED-related cases, which included 14 different products (all AAS): bringing the sample to a total of 43. The Belgian and Dutch officials granted me official approval to have such a large amount in my possession for research purposes. Furthermore, the fact that the AAS originate from the Dutch or Belgian market does not mean that the illegal substances are produced in those countries. The products were simply obtained from either the Dutch or the Belgian market, for example, through a Belgian or Dutch dealer. All the tested products consisted of AAS, except for one product, which was Clenbuterol[72].

[72] Clenbuterol is used to treat chronic asthma, but off-label this drugs is used for its fat burning effects. It has some similarities to Ephedrine but is far more effective.

The substances were tested to determine whether or not the products matched the ingredients on the label. An ultra-performance liquid chromatography coupled with electrospray time-of-flight mass spectrometry (UPLC-Q-TOF/MS) technique was used to test for the effective content of 43 products. This instrument separates different active components (chromatography) used in the tested products. The separated components are detected based on the retention time (in the chromatographic system), ultraviolet absorption, and mass spectrometry. The substances can be identified and quantified with a high precision and accuracy based on these three characteristics. The UPLC-Q-TOF/MS technique is very sensitive, in the sense that low concentrations can be measured (in the milligram range), and selective, in the sense that different components can be separated and identified from each other. This research applied a deviation of 10% from what was declared on the label. While this is a broad range, as the pharmaceutical industry applies a much lower percentage, the Justice department in Belgium and the Netherlands uses this threshold to increase the punishment in the case of counterfeit drugs. Thus, everything within this 10% range is considered authentic (Koert & van Kleij, 2005).

The analysis indicated that of the 43 tested products only 65% effectively contained the declared active substance (see figure 2)[73]. However, in 49% the declared ingredients were different from the actual content: 40% were under-dosed and 9% were over-dosed. In addition, 16% of products contained another substance all together and in all of these cases these substances were under-dosed. The contents of the products matched the label in only 16% of the cases (see figure 2). There were no significant differences between the substances that were obtained from the Belgian and Dutch markets.

[73] Appendix II provides a more detailed overview of the tested substances and their actual content.

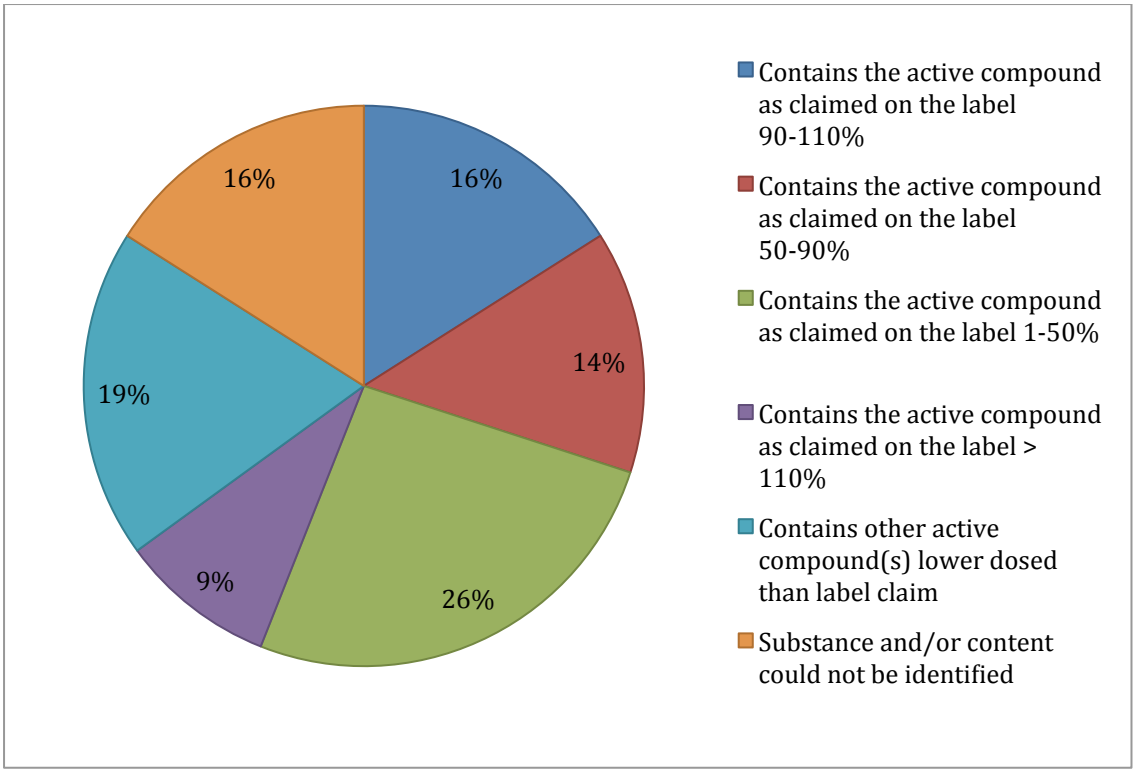

Figure 2. The quality of the Belgian and Dutch illicit PIED market (N=43).

These results resemble those of Koert and van Kleij (2005) who analysed the quality of illicit PIEDs in the Netherlands confiscated in 1998 (N=98) and between 2000-2003 (N=203). The authors found that between 50-60% of the products did not match what was on the label. A difference between the work of Koert and van Kleij (2005) and this research is that the former found that in several cases the products did not contain any active compound (17% in 1998 and 7% in 2000-2003), while in this research all products had an active ingredient. While it is difficult to make a comparison, as the products were obtained through different methods, it seems that the illicit PIED market has come to sell more products that do contain actual AAS (Llewellyn, 2010a).

The problem with incorrectly labelled PIEDs is that they may have a negative impact on someone's health. In the case of over-dosing it is clear, as the chance of side effects of using AAS may increase. For example, in an extreme case, one analysed AAS contained 267% more than was claimed on the label. Nevertheless, under-dosing can also be dangerous. For instance, an individual may get used to a dose of 10-50% but if the illegal substance in the next cycle does contain the declared content (90-110%), the risk of side effects increases again (Koert & van Kleij, 2005). Another problem users should be aware of is the potential that underground steroids are contaminated with dangerous substances (a.o., Hartford Courant, 2005, November 6; Llewellyn, 2010a). For example, Llewellyn (2012, June 29) tested 14 illicit market samples (Europe) in 2007 and found that 21% contained heavy metals and 57% contained another type of contamination. In 2010 he conducted a new analysis of 24 underground

samples (Europe) and found that 25% contained bacteria and 71% of samples had other contaminations. These samples did not contain heavy metals but other unusual, and less dangerous ingredients were found such as BHT (a food preservative) and Bis (plastic chemical) (Llewellyn, 2012, June 29). Other studies of human enhancement drugs (HEDs) such as weight-loss drugs (e.g. Venhuis et al., 2009) and sexual enhancers (e.g. Jackson et al., 2010) show similar results regarding the doses of active pharmaceutical ingredients, contaminations and replacement of other alternative ingredients (see also van de Ven & Mulrooney, 2015, May 5).

During my fieldwork I discussed these results with users. In general users were aware that the quality of underground products was poor, but despite this knowledge PIED users still purchase and use these products. Due to the inaccessibility of medical sources and a lack of testing services and other health care services, users incorporate their own 'risk management strategies' (Kimergård & McVeigh, 2014) to reduce the risk of using steroids and other PIEDs. When it comes to the quality of AAS, this generally comes down to finding a supplier that can be trusted or by 'self-experimentation' either on yourself or a friend. However, despite attempts by users to reduce the risk of consuming illicit market AAS, it is impossible for users to know exactly what substances they are taking, impeding the successful self-management of risks in users (Kimergård & McVeigh, 2014: 5). In the research of Kimergård and McVeigh (2014) AAS users would often dismiss speculation regarding the quality and safety of the steroids because they trusted the person who had sold them. The authors remark that the potential for serious adverse health consequences due to poor manufacturing of products is not generally perceived as a major issue. Instead the main concern of users regarding an unregulated market was the chance of being 'ripped off' or at the very least failing to make the desired gains. The fact that users accept the quality of PIEDs in the illicit market may have important consequences both for their personal consumption and for policy strategies.

8.5 The booming Internet trade for PIEDs in Belgium

Initially the Internet, or the 'clearnet'[74], was predominantly used as a source to obtain information on PIEDs (de Hon & van Kleij, 2005; Perry et al, 2005; Wassink et al., 2010). For example, Larance et al. (2005) reported that of the 60 participants involved in their research study, 62% sought information about PIEDs from Internet sites. In particular, the Internet is an important source for finding information about the types of AAS that are available on the illicit market (Kimergård, 2014b). The Internet is not only a source of information for users, but also provides aspiring dealers with the technical knowledge to start an UGL (see previous section). However, more recently, the Internet has also become an

[74] The 'clearnet' refers to websites that are openly available on the Internet.

increasingly used medium to sell and purchase PIEDs (de Hon & van Kleij, 2005; Kraska et al., 2010; Wassink et al., 2010). Some even suggest that the Internet is now possibly the primary means for buying and offering PIEDs (e.g. see Cordaro et al., 2010)[75]. For example, Cohen et al. (2007) conducted a survey amongst 1955 US-based male non-medical AAS users and found that more than half of the participants had purchased steroids over the Internet.

Aside from the risk of buying poor quality PIEDs, one of the main issues with buying PIEDs on the Internet is that users run additional risks following the advice given (Wassink et al., 2010). Information on PIEDs is displayed in a predominantly positive light (e.g. limited adverse effects, good results) and recommended doses are often much larger than those indicated for therapeutic purposes (Cordaro et al., 2010). Subsequently, the growing role of the Internet decreases many protective factors which may have been provided previously by socially oriented dealers, including medical advice, expert guidance, and access to clean PIEDs, while simultaneously increasing many risk factors, such as the availability of poor quality PIEDs and attracting more dangerous criminal groups (de Hon & van Kleij, 2005). However, others argue that the Internet may actually reduce multiple risks, such as violence and exposure to other drugs, and instead may function as a form of harm reduction as many users encourage and facilitate information about drug practises and drug effects (e.g. see Martin, 2014; Buxton & Bingham, 2015).

In Belgium, the authorities suggest that the Internet is becoming the main tool for PIED purchases and sales (Hormonencel, 2013). For example, Vera, a Belgian official, estimates that around 50% of PIEDs are purchased from the Internet and that this figure will "keep growing". When looking at the Dutch market a growing trend can be noted as well (Koert & van Kleij, 1998; Oldersma et al., 2002; Snippe et al., 2005; Wassink et al., 2010). The most current estimation is that 30% of the Dutch PIED users obtained their products through an AAS selling website (Gezondheidsraad, 2010). However, de Hon and van Kleij (2005) mention that the Internet appears to be utilized more often as a source of information in the Netherlands, and that purchasing PIEDs through a personal contact is still preferred to the Internet. Similar results for the Netherlands were found in this research. Users regularly mentioned that they regarded a personal contact as more 'trustworthy' as they often knew this person, could literally see the products to check if they were 'legit', and because the supplier often used the products him or her-self. Whether or not the quality of these products is really better, users *perceived* these products as being more reliable, which has important consequences for their personal patterns of consumption (see also Coomber et al., 2015).

[75] For an analysis on the visual display of different types of AAS selling websites (e.g. picture, use of text) see Cordaro et al. (2010) and Wassink et al. (2010).

In eleven of the 31 Belgian criminal justice cases a connection with the Internet was established: either the Belgian dealer distributed through a website (4), or the dealer ordered through a Dutch website to re-sell the PIEDs in Belgium (7). These Internet cases began to appear in 2006, but really began to take off after 2010. In contrast, in only three Dutch cases there was a connection with the Internet, and in all cases the dealer distributed the PIEDs over a website, in particular to Belgium. For example, in the Dutch case involving Dennis, an Internet dealer who produced his own AAS, the main group of buyers were located in Belgium (case 8 NL). Moreover, during this research I interviewed Sammy, a Dutch Internet dealer who owns one of the most popular Dutch AAS selling websites. He mentioned the following about the people who order from his website:

> "S: […] But there is just so much demand and there *are so many people who buy through the internet, especially the Belgians,* they often *cannot buy at a gym because the law doesn't allow it*[76]. So they massively buy through the Internet." (Sammy, Dutch Internet dealer, interview)

Finally, the varying role of the Internet within these markets is further highlighted by a Google search of "buy" or "buying steroids". In google.be (Belgium) several Dutch AAS selling websites pop up which promote that they ship to Belgium as well. However, when these same words are typed in google.nl (Netherlands) no Belgian websites can be found that offer PIEDs. This may be an indication that Dutch PIED sellers are more active on both markets as opposed to Belgian suppliers who appear to be largely only active in the Belgian market. In addition, according to the Hormonencel, Dutch PIED dealers own many of the AAS selling websites they encounter during their investigations. In total this would be around twenty websites (*KRO*, 2013, February 28). Nonetheless, while most AAS selling websites seem to be owned by Dutch dealers, it appears that Belgian users are one of the main target groups of these Internet dealers. For instance, one Dutch AAS selling website mentions the following:

> "*Do you want to buy steroids in Belgium? Then you are at the right address here! We want to provide every private individual and business customer in the Netherlands, Belgium and Germany with the best quality steroids, the best free cycling advice, and with the quickest service to ship your products.*"

[76] In Belgium the police may take legal action and/or national anti-doping agencies of the French and Flemish community may undertake disciplinary actions against recreational athletes (e.g. people who train in gym) for using or possessing PIEDs. In the Netherlands this is not the case.

Ultimately, purchasing PIEDs over the Internet seems to be a more popular method amongst Belgian users and dealers when compared to the Netherlands. This is also somewhat logical as users in the Netherlands have greater accessibility to personal contacts, due to the low legal priority this trade has in the Netherlands, and therefore users have less need to order PIEDs online. However, the adopted methods in this research are not suitable to estimate the proportion of the Belgian market that is being supplied PIEDs by (Dutch) Internet dealers, and the proportion of 'personal' sources. In addition, there are no empirical studies in Belgium in this area, which makes it impossible to verify this development.

Nevertheless the bigger, and faster growing role of the Internet in the Belgian PIED market may be prompted in part by the greater emphasis on supply reduction strategies. For example, as Sammy mentions in the above quote, users in Belgium have more difficulties in obtaining PIEDs through conventional methods and instead resort to the Internet. During my fieldwork, several Belgian bodybuilders also mentioned that they will still offer expert advice, but were not willing to supply PIEDs anymore and instead would recommend for users to order from the Internet or to go personally to the Netherlands to obtain PIEDs. However, it may be that these contacts said this out of protection of their source. Illicit markets can easily cope with repressive policies and often simply adjust their distribution methods and distributors (May & Hough, 2004; Decorte, 2010): in the case of Belgium the Internet becomes the new virtual safe haven. It seems that the capacity of PIED users and dealers to adapt to the policing in Belgium has been greatly facilitated by the emergence of the Internet. The pace of change may be accelerated in Belgium due to the repressive climate and the need for Belgian users to look for alternative sources.

However, this is not to imply that the Internet does not play a role in the Netherlands. While users may be making less use of the Internet to purchase products, Dutch dealers have capitalized on the Internet to distribute their products, in particular to Belgium and other European countries. The Internet in general is increasingly being viewed as the driver of contemporary illegal drug markets (Corazza et al., 2011, 2012; Vardakou, 2011; van Hout & Bingham, 2013). The virtual drug market is dynamic and innovative in its capacity to distribute illegal drugs, create new substances and circumvent legislative controls (Inciardi et al., 2010; van Hout & Bingham, 2013). It is clear that the Internet is becoming a growing source for PIED users and suppliers, however the Dutch and Belgian markets are different in this regard, not least due to PIED policy or lack thereof.

Finally, it is increasingly apparent that illicit drugs are purchased, distributed and discussed amongst users of the 'darkweb'[77] (van Hout &

[77] The 'darkweb' is a "virtual marketplace, which is inaccessible by web search, and where it is difficult for law enforcement authorities to identify website owners and users, as their identities remain hidden by means of sophisticated concealment methods" (UNODC, 2014: xii).

Bingham, 2013; van Buskirk et al., 2013). The United Nations Office on Drugs and Crime (UNODC) (2014) reported that the darkweb is an increasingly used tool by individuals or groups to distribute illegal goods and services. These websites are not openly available on the Internet, and require specific software to access them (e.g. Tor anonymizing software). However, as PIEDs receive relatively little attention on a global scale from law enforcement agencies there is often less need to undertake such sophisticated measures to conceal illegal activities. With more concealing, there are more barriers for customers to enter this dark space (e.g. installing and using Tor, buying and using Bitcoins) and to purchase the products. There currently seems to be little advantage for PIED dealers to use the darkweb. When searching (01 March 2015), for example, on Nucleus, a darkweb market, twelve different types of drugs were promoted: benzos, cannabis, dissociatives, ecstasy, opioids, prescription, psychedelics, steroids, stimulants, tobacco, weight loss and other. Of the total amount of ads, cannabis accounted for the majority (25.3%), followed by ecstasy (16.4%) and stimulants (14%), while steroids only accounted for 4.4% of the ads. Dutch vendors placed 2.4% of these ads, and none originated from Belgian vendors. Comparably, Polish vendors placed 20% of these ads and vendors from the United Kingdom accounted for 16.1%. While the overall proportion of PIED transactions that take place in the darkweb is unclear, it appears to play a minor role in the Dutch and Belgian PIED market and for this reason will not be addressed in detail in this chapter.

8.6 Different types of websites on the virtual PIED market

The Internet has provided an unbounded global marketplace for the purchase and sale of PIEDs. An advantage of the Internet is that, compared to a traditional market, both buyers and sellers are less visible to the police (May & Hough, 2004; van Hout & Bingham, 2013). The Internet allows for these individuals and/or groups to conduct illegal operations and to remain unidentifiable. For instance, Roy mentioned that "the anonymity and the lawlessness" makes it easy to distribute over the Internet. Moreover, as Alex mentions:

> "A: […] PIEDs are increasingly being purchased on the Internet. *The choice is bigger*, *the prices are lower*, and *the ordering convenience is high* […], *it is anonymous, and many sites ship within the EU, so no trouble with customs service*. I, for example, know two guys who were preparing for a bodybuilding competition. They bought stuff via the Internet. Their coach told them how they had to use those substances. *So, he doesn't sell them anything, but just makes money off the coaching* […] I have the impression that these *organized Internet shops are increasingly taking over a bigger share of the market*. The little dealers will always exist, just like

> the coaches who give advice, but in many cases the *users can also go without them, and that is happening more often*." (Alex, Dutch helper, electronic contact)

As the quote illustrates the Internet has many advantages and increasingly is taking over the role of personal contacts as everything can be easily found on these AAS selling websites. As Alex mentions the ordering convenience is high: e.g. you can pay in various ways (e.g. Western Union, PayPal, Bitcoins or cash), there is a larger selection and it is quick (e.g. you do not have to pick up the products) and relatively 'safe' (e.g. lower detection rate). Another advantage is that many illegal PIEDs go unnoticed by custom services due to the 'open borders' of the European Union. For example, authorities of both countries suspect that many PIEDs come from Eastern European countries (e.g. Bulgaria and Poland), but they cannot systematically keep track of this due to European Union regulations. Thus, everything that is shipped within Belgium and the Netherlands, and between the two nations and the rest of the European Union countries is unknown, giving these web shops quite an ideal market position.

However, in the research of de Hon and van Kleij (2005) PIED users mentioned that they preferred personal contacts to the Internet, as the chances are smaller that the products will be confiscated and that the quality is better, in the eyes of the buyer, when buying directly from a PIED dealer. The authors tested the reliability of ordering through the Internet and found that only in four of the eighteen (22%) attempts to order AAS were the products successfully delivered. However, the fourteen failed attempts had little to with being seized but had different causes: e.g. websites did not reply after the order or there were payment problems. Another aspect the authors mention is the difference in price between the Internet trade and the 'traditional' trade. Several participants in this research likewise mentioned that "in principle all products on the Internet are more expensive than on the market" (Johnny, Dutch helper, field-notes Dutch bodybuilding competition). Nonetheless, while the Internet is perceived as more expensive by some users, a closer inspections reveals that prices are in fact quite comparable to a personal contact. Alex even thinks that the Internet is cheaper than a personal contact. The main difference seems to be that prices fluctuate more on the Internet; so one may need to spend more time to find a reliable and less expensive source.

Despite these trust issues the Internet is an appealing source to quickly, easily and anonymously purchase PIEDs: in particular for the group of users who, for example, have no connection to a gym environment or who feel too 'embarrassed' to go to the physician to ask for these substances. In a Belgian documentary on PIED use one of the reporters anonymously offered AAS on a 'buy and sell website' to see if people would contact him. In the two weeks before his ad was removed 18 people contacted the reporter about being interested in purchasing PIEDs (Koppen, 2010, March 4). Whether or not they would have

gone through with the transaction is unclear, however, what is interesting is that in a short time span many people showed interest in buying these substances over the Internet. These temporary websites are often referred to as 'ghost sites', which advertise illegally and take money, but have no intention of delivering a product: either by not sending anything at all or by delivering 'fake' products (e.g. no active substance or alternative substance) (Home Office, 2014). Nevertheless, it may be questioned how successful these temporary ads or websites are. Internet dealers of a ghost sites have to constantly switch virtual locations and, more importantly, have to always persuade new buyers that they can be trusted to deliver PIEDs of good quality.

Like traditional illegal drug markets, similar types of markets (May & Hough, 2004; Ward, 2010; Sandberg, 2012a) – public, semi-open and private – can be found on the Internet (see chapter 6). The public market refers to the easily accessible websites that are open to everyone (e.g. ghost websites) – the ones that appear when you type certain words in a search engine -, the semi-open market resembles the online trade through forums – buyers do not need a personal invitation but certain rules do apply -, and the private market refers to the websites that are only accessible to a select group of people (e.g. websites with accounts) – buyers can only access these websites if they have been invited by previous visitors. Several users mentioned that usually the inexperienced PIED user order through these 'ghost' ads and websites (the public market) as, "they do not know better" (Eric, Dutch dealer, field-notes Dutch supplement shop). More experienced users know that these websites are not reliable and mention that some research is needed to know which sites are safe. For example, Coen, a Dutch helper, mentioned:

> "C: A friend of mine had a friend who used [AAS] quite a lot. And he *ordered through a reliable website so now I also order from that website*.
> KvV: How did you know that this website was reliable?
> C: I think he *just tried it* and noticed that *it was good stuff*. He got a *good service and stuff like that*, and he kept using it." (Coen, Dutch helper, interview)

The website Coen is talking about is a 'closed' website in the sense that you need an account to access it (the private market). This website will not appear if you type terms such as "buying steroids" on Google, and can only be accessed through a gatekeeper. For example, Coen's friend provided him with his login details. However, not all reliable websites are closed and the majority of websites seem to be accessible to anyone. 'Quality websites'[78] usually last much

[78] Quality in this context refers to the trust customers have in these websites, and does not necessarily reflect the quality of the illegal product itself.

longer before being shut down, if they ever are. For example, several websites that were mentioned in the research of Wassink et al. (2010) still exist today, meaning that these AAS selling websites have been online for at least six years. Moreover, in contrast to ghost websites, 'quality' AAS selling sites do not only create customer value but also sustain it, building a large customer base over the years. These websites offer a complete 'customer experience' and try to build rapport with their buyers (Home Office, 2014). The idea is that satisfied customers will more likely develop feelings of obligation towards the AAS selling website with the chance that they keep ordering through their website and recommend its goods and services to others.

8.7 Quality websites and the adoption of gift-giving strategies

'Quality' websites seem to make use of "gift-giving strategies" (Gus, 2008) as a means to personally bind PIED users to their site and retain a large customer base. For example, on 'quality' websites, return polices are offered, contact information is provided and information on AAS is supplied in order to make customers feel appreciated (e.g. see Cordaro et al., 2010; Wassink et al., 2010). Moreover, the password login of some of these 'quality websites' makes them more exclusive and cultural as only certain people who are engaged in a PIED using subculture have access to these websites. In order to build trust these websites incorporate concepts such as experience, reputation and trusting propensity. For example, Sammy mentioned the following about satisfying customers:

> "S: Look when people have complaints then we are absolutely not difficult. So we are *fine with sending, free of charge, another brand*, which is no problem at all. That only occurs sporadically and you also keep customers. I mean you can say it is your own fault, figure it out, but then they don't come back. And well, since they [websites] are popping like mushrooms out of the ground, they [customers] *are quickly gone when you don't treat them well*." (Sammy, Dutch Internet dealer, interview)

Drug users will more likely buy from sellers who they trust and feel personally connected to rather than from individuals or websites they know nothing about (May & Hough, 2001; Belackova & Vaccaro, 2013). These owners of quality websites intend to give the best possible service to their customers, and attempt to reduce risks associated with the use of PIEDs. Similar to socially oriented dealers, these "quality" Internet dealers provide some protective factors such as providing information on PIEDs, and seem to reduce certain risk factors such as opportunities for violence. For example, Sammy informed me that he will not sell brands that have a bad reputation and that he will never purposely adulterate or

sell poor quality PIEDs, as it is bad for business: “Well, of course you are never certain about everything. It is just that everything is done to guarantee quality. I mean it is no use to sell garbage and people get sick and don’t come back anymore”. Providing this ‘customer service’ is essential as there are multiple sources (e.g. pharmacy, gym contact and Internet) through which PIEDs can be obtained, and buyers will quickly switch when not satisfied. Therefore, websites that incorporate gift-giving strategies have a better chance of generating higher revenue in the competitive PIED market.

Internet dealers may have features resembling those of socially oriented dealers, but differ in that they are highly interested in increasing profit margins. For example, Sammy started dealing PIEDs because he could obtain discounts if he ordered large amounts and then resold them for the original price to make a profit. Moreover, in some Belgian and Dutch cases the Internet dealers were involved in other illegal activities (e.g. selling other illegal drugs), had little experience with PIEDs themselves and/or were absent from the users’ social environment. For example, Dennis had never used PIEDs, had no socio-cultural connections to the users’ environment and was associated with other more dangerous criminals (case 8 NL). In general these Internet dealers care less about the users’ wellbeing and will only provide good customer service if it benefits their illegal business. They are less interested in the quality of the PIEDs and knowledge regarding the different types of AAS and other muscle enhancing drugs, training, nutrition and other training-related attributes, but in principle only care about the financial profit they are able to generate. In other words, they are only offering all this extra quality care for one reason: customer retention.

On the Internet a wide variety of PIED dealers are involved. On the one hand, you have ghost websites owned by individuals who appear to be only interested in quick money. While on the other hand, there are the ‘quality’ websites that try to increase the ‘customer experience’ by offering additional services. By adopting gift-giving strategies these ‘quality’ websites partly take over the role of traditional dealers or socially oriented dealers. However, certain socio-cultural attributes, such as having cultural knowledge or a well-trained body, are not required as there is no personal contact with the customer (see chapter 6). The Internet is no longer just an information source, but is increasingly being used to order and distribute PIEDs, and in the near future may even become the main tool for buying and selling PIEDs. Indeed, Internet dealers seem to be replacing personal contacts as the Internet allows for various types of PIED dealers to enter the PIED market.

8.8 Conclusion: the Dutch underground culture and the digital trend in Belgium

The mild political climate surrounding PIEDs in the Netherlands and the relative ease of producing AAS has made it a welcoming environment for individuals and groups seeking to produce their own steroids. In addition, the minimal 'know-how' needed to produce steroids and the technical equipment is easily available through the Internet. However, the growth of UGLs is not just a Dutch development, but is an increasing problem in many countries (Llewellyn, 2010a; Paoli & Donati, 2014). The expansion of domestic AAS production, therefore, cannot be explained alone by the under-regulation of PIEDs in the Netherlands. There is a significant demand for PIEDs, not just in Belgium and the Netherlands but on a global scale, which only seems to be growing. A particular worry of these UGLs is that the quality of illicit market products in general is quite poor (de Hon & van Kleij, 2005; Graham et al., 2009). The data shows that in only 16% of cases did the content of the products match the label; often products were under-dosed but is some cases they were over-dosed, or replaced with another active substance all together. It is important to raise awareness regarding the potential health consequences of adulterated PIED usage, and to implement harm reduction strategies such as testing services in order to promote and protect the health of users (Kimergård & McVeigh, 2014).

Comparably, the domestic production of AAS in Belgium remains relatively low, and instead the Internet seems to be gaining ground. Belgian officials suggest that the Internet is becoming the main tool for PIED purchases and sales. The growing role of the Internet in the Belgian PIED market may be prompted by the greater emphasis on supply reduction strategies. Research on drug markets has shown that repressive policies simply lead to an adjustment of distribution methods and distributors (May & Hough, 2004; Decorte, 2010). Indeed, Belgian users seem to have less accessibility to personal contacts, and instead resort to other sources such as the Internet. However, this does not mean that the Internet does not play a role in the Netherlands. While Belgian users may be making more use of the Internet to purchase PIEDs, Dutch dealers seem to have adapted this tool to distribute their products, in particular to Belgium and other European countries. One of the main issues with buying PIEDs on the Internet is that users run additional risks following the advice. However, some scholars argue that the Internet may function as a form of harm reduction as many users encourage and facilitate information about drug practices and drug effects (e.g. Martin, 2014; Buxton & Bingham, 2015). Therefore, it is essential to examine both the positive and negative influence of the Internet on AAS use, and to develop strategies in public health that make use of this medium in order to reduce the risk of PIED use.

Chapter 9

What are the 'harms'?:

Anti-doping, domestic policies and the PIED market

In both Belgium and the Netherlands no research has been carried out to systematically assess and account for the harms associated with the use, production and distribution of PIEDs. Nevertheless, the fact that there is little evidence pertaining to the harms of PIEDs is one of the very reasons Belgium calls for stricter measures to regulate PIEDs; while, on the other hand, the Netherlands uses this lack of substantial evidence as an argument for giving PIEDs minimal policy priority. Although the Netherlands has adopted some harm reduction strategies (e.g., opening up an AAS clinic) in contrast to Belgium, in general very little is done to regulate this market (see chapter 2). Importantly, studies focused on drug markets have illustrated that both over-regulation (e.g. see Costa, 2008) and under-regulation (e.g. see Palamar, 2011) may lead to harmful effects (see chapter 2). Therefore, establishing the harms caused by certain criminal activities and their regulation is essential for justifying, for example, the criminalization of such an activity (Belgium), or deciding to leave it alone (the Netherlands) (e.g. see Greenfield & Paoli, 2013). An assessment of the harms may in fact provide the evidence needed to start the discussion on how best to regulate this market (e.g. criminalization, depenalisation or legalization), and whether or not Belgian officials are right in calling the Netherlands the "weak link" in the international fight against doping and PIEDs (KRO, 2013, February 28).

In this chapter 'harm' refers, on the one hand, to the harms caused by the criminal activity itself: in this case the production and trafficking of PIEDs. This includes harms such as the use of violence in drug markets, the quality of illegally produced drugs, and the advice given on drug-selling websites (Greenfield & Paoli, 2013). On the other hand, it also refers to the harms caused by control policies: in this case the 'under-regulation' in the Netherlands and the 'over-regulation' in Belgium. For example, the move of drug users and suppliers to other countries and the displacement of substances for a drug that is less controlled (Costa, 2008). However, this separation is not always so strict as certain harms may be a combination of different factors. For example, while the

quality of illegally produced steroids in general is poor, which potentially could harm steroid users, the growth of these underground labs is partly also a result of the more stringent controls on the medical sector. Moreover, in this chapter I will look to a lesser extent at the harms caused by the substance itself, for example, if the use of steroids may lead to aggression or violence, depression or other individual or social harms. However, compared to other drugs, steroids are ranked as a group of drugs with a relatively low harm; based on the scores for acute and chronic adverse health effects, the prevalence of use, social harm and criminality (Van Amsterdam et al., 2009). For more detail on this discussion, I would like to refer to the work of RIVM (2009), Tsitsilonis and Perrea (2009), and van Amsterdam et al. (2010).

This chapter assesses the harms related to the production and distribution of PIEDs highlighted in this research, and explores the effects that the contrasting policies adopted by these two countries may be having on this illicit market. This chapter is organized as follows. In the first section I describe the different levels of enforcement adopted in Belgium and the Netherlands and assess whether they are effectively reducing the supply of PIEDs. After this, I explore if PIED producers and dealers are able to generate high profits, regardless of the enforced policy, and whether or not they have infiltrated the legal economy (their money laundering practises). Thirdly, I will examine the potential harms that come from the Internet trade. In the fourth section I will explore the role of organized crime in the PIED market, the potential dangers, and its connection with (elite) sport. In the last sections attention is given to the efforts being made in both countries to reduce the harms of PIED use, and how anti-doping regulations and national policies may impact harm reduction strategies and exaggerate harm.

9.1 More investigations, more cases, more trials, more impact?

An important difference between the Belgian and Dutch policy responses to the PIED markets is that Belgium utilizes law enforcement strategies significantly more than the Netherlands (see figure 3). For instance, the amount of recorded PIED violations[79] in Belgium has gradually increased over the years: from 19 PIED violations in 2003, to a high of 343 in 2010, before dropping slight to 295 in 2012. The lower number of violations in the early years may be explained in part by start-up problems (e.g. setting up cooperation with different partners) and new policy developments (e.g. intensifying of doping controls in gyms), while the peak in 2010 may be attributed to the high amount of confiscated postal packages and home searches undertaken in that year.

[79] The violations are based on proof of sale of illegal substances, confiscations, border controls, home searches, control of mail, food and vehicles, infiltrations, received samples, postal shipping and road controls.

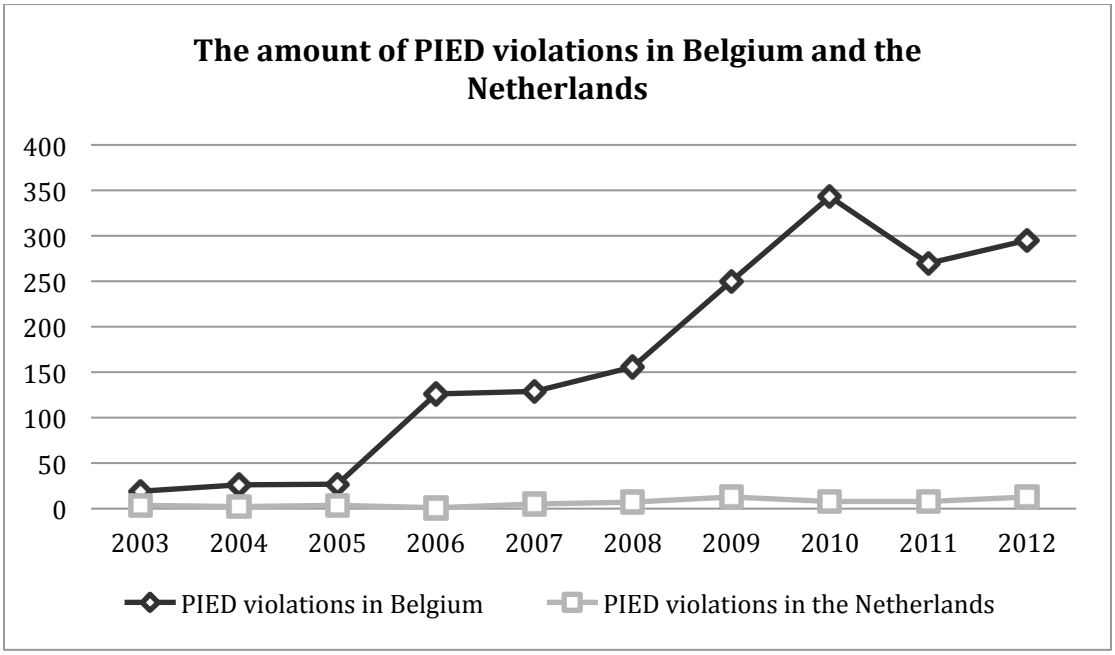

Figure 3. The amount of recorded PIED violations in Belgium and the Netherlands recorded in 2003-2012.

By contrast, in the Netherlands there were only four cases in 2003 and only 13 cases in 2012. The figures reveal that despite the intentions of the amendment of the Dutch law in 2001, very little action is undertaken to reach this policy objective[80]. Few police investigations focus on PIEDs and ever fewer people are eventually prosecuted and punished for this type of crime. Therefore, the amendment of the Dutch legislation is ultimately symbolic, as it has largely gone unenforced. However, the reliability of the Dutch figures is questionable as it is quite difficult to track down records specific to PIED dealing due to the low priority given to this illicit trade (see chapter 4). Nevertheless, the lack of registration and data collection itself indicates a disregard for efforts that seek to control the production and distribution of PIEDs. So, while both countries focus on reducing criminal activity and safeguarding public health via legislation aimed at supply reduction strategies, it is only Belgium that readily enforces these measures in practice.

Despite the different approaches adopted in Belgium and the Netherlands, PIEDs in general have little to no priority amongst both national police forces and other investigative units. This is reflected by the fact that in only a handful of investigations are suspects actually charged for PIED dealing activities (e.g. production and/or trafficking), while even less are prosecuted, and when sanctioned the result is often a fine or a relatively low prison sentence (when compared to other illegal drug offences). For example, in a Belgian case from

[80] In order to more effectively combat the illegal PIED trade and the involvement of criminal organisations in the Netherlands the Dutch government amended the law in 2001 (see chapter 2). As a result of this amendment punishment has been increased and authorities have gained more investigative powers (e.g. surveillance teams, wire taps).

2012 one suspect was charged for illegally producing and selling PIEDs resulting in a remanded sentence of six weeks. Later he was arrested for the same offence for which he was required to serve four months in prison (Case 7 BE). As evidenced above, in the Netherlands even fewer investigations take place, and when suspects are charged for PIED dealing activities most receive a relatively low sentence, if any. If a sentence is handed down then it is often for possession with the intent to sell. For example, in an undercover operation set up by Belgian police officers, in which a Belgian suspect contacted two Dutch dealers, the Dutch dealers ended up only receiving a fine for possession of PIEDs (with an intent to sell) and not for distributing these illegal substances (Case 15 BE; Case 7 NL). The hearing of the Belgian suspect was dismissed because the judge found that the charges were not proven as the police provoked the suspect to arrange the deal.

However, while PIEDs in both countries have a relatively low priority amongst investigative units, Belgium maintains a more repressive climate towards possession and even consumption. The literature on drug market enforcement indicates that, in general, a repressive approach does not lead to the arrest of upper-level producers and/or distributors, but rather involves the frequent arrest of small-scale producers and/or suppliers, and drug users (Dixon & Coffin, 1999; Kerr et al., 2005). Indeed, the statistics in figure 4 show that the majority of human PIED violations in Belgium are not related to the (large-scale) production and/or distribution of PIEDs and instead involve rather small incidents such as the import of AAS or other PIEDs[81]. In addition, only a handful of cases included production and/or trafficking violations and here too, most concern small-scale dealing networks. Consequently, it is predominately PIED users and small-scale producers and/or dealers, as opposed to large-scale dealers and/or producers, who end up being the target of investigations in Belgium.

[81] The data is based on records found in the Belgian Police National Database, which was retrieved through the Hormonencel. Doping violations can be recorded as 'use of doping in sport', 'possession of doping' and the 'production and distribution of doping'. The latter was used to count all violations that involved the production and/or supply of PIEDs.

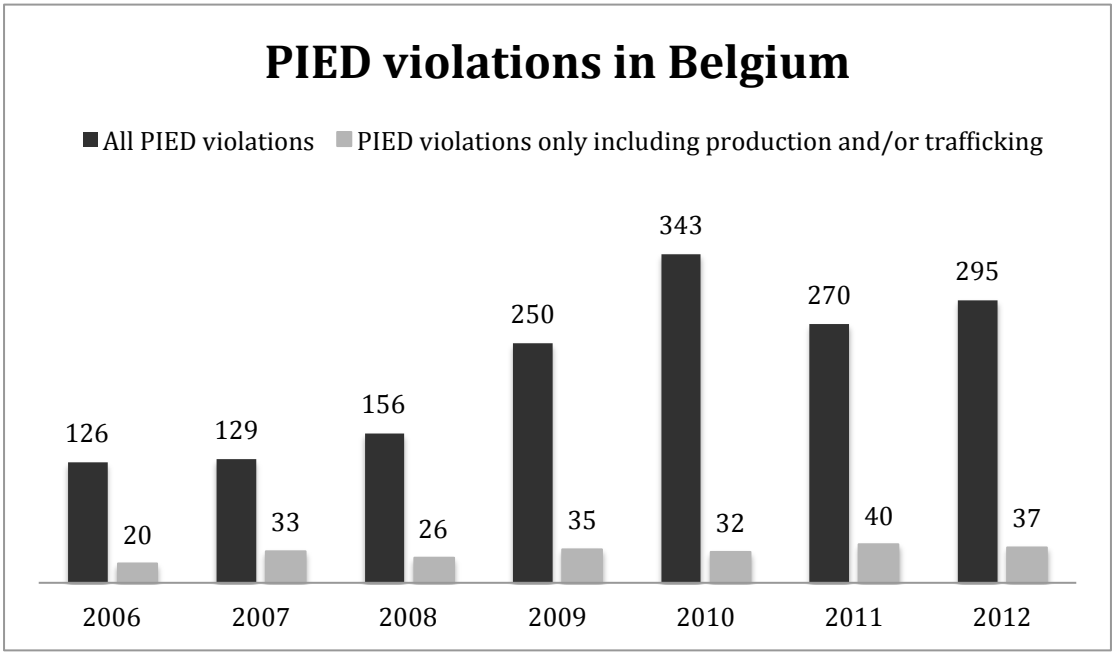

Figure 4. An overview of all Belgian PIED violations and which cases involve the production and/or trafficking of PIEDs.

In Belgium anti-doping officials, together with the police, perform doping controls in gyms (see chapter 2). Based on a positive test the police are allowed to start a trafficking investigation. For example, in one Belgian case a member of a gym called the police to inform them that the manager was supplying PIEDs to fitness trainers (Case 5 BE). Based on this tip the police started an investigation and conducted a search at the gym in cooperation with NADO Flanders. In total fifteen fitness trainers were tested for doping of which six were found positive, including the main suspect. While the manager received a conditional prison sentence for supplying PIEDs, the other 'suspects' were convicted for possession: six received a fine, one community service and three a suspension of their sentence. The fine was to be replaced for a prison sentence of several days if the suspects were unable to pay it. While the intention of these doping controls is to deter people from using and to find the 'big fish' behind the dealing operations, one can speculate as to whether this is an effective strategy for disrupting the illicit PIED market. Ultimately, the evidence suggests that it is often users and small-scale dealers who are charged and punished as opposed to large-scale producers and/or traffickers. Unless networks are disrupted and the revenues of top-level producers and distributors are identified, the arrests of these retail dealers are unlikely to have any long-term effect on the market. However, as the criminal justice cases show most 'masterminds' seem to reside in the Netherlands, therefore, Belgian officials are somewhat correct in suggesting that better international cooperation is needed to target these large-scale production and distribution networks.

9.2 Production, distribution and profit: the PIED market, an untapped 'gold mine'?

The research of Koert and van Kleij (1998), Oldersma et al. (2002) and de Hon and van Kleij (2005) show that the annual revenue of the Dutch PIED trade between 1998 and 2005 has grown slightly. In 1998, Koert and van Kleij (1998) estimated that the annual revenue of the PIED market was between €70 and €90 million. This estimated figure was based on the confiscations of one particular case that occurred in 1994 (Case Gorilla). Likewise, in the research of Oldersma et al. (2002) and Snippe et al. (2005) participants (mostly authorities) estimated that the revenue of the PIEDs market was around the same as it had been in 1998, with some slight growth. According to the authors this increase was largely the result of higher doses consumed by users and increasing market prices. However, it is suspected that the participants based this estimation on the qualitative information found in the report of Koert and van Kleij (Snippe et al., 2005). Therefore, one can speculate whether or not the illegal revenue of PIED production and distribution has grown.

Using seizure statistics to estimate the market value of drugs brings with it a gambit of discrepancies and inconsistencies. Therefore, Koert and van Kleij's estimations may not be representative of the wider PIED market. Indeed, it could be that this was by chance a very large, yet uncommon, find. In the cases analysed for this research no large financial revenues were uncovered. Furthermore, as suggested above, seizure statistics in general tend to reflect the activity of police and customs, rather than the amount or value of the drugs available on the market. Moreover, the argument that the annual revenue is growing due to increasing market prices must consider that PIEDs are relatively cheap, especially when compared to other illegal drugs, and that these substances are becoming more readily available as a result of their being sold on the internet (Paoli & Donati, 2014). Rather, it seems more likely that prices have dropped due to their ready availability of PIEDs (Paoli & Donati, 2014). Finally, the way in which these calculations have been made and are being interpreted is problematic. In both the Netherlands and Belgium, the street value of the confiscated products is often mentioned in official reports or media articles as a marker for the value of the drugs seized and to illustrate the profitability of this market. For instance, in 2013 a dealer was arrested who sold Melanotan and research chemicals online. In a short time span he built a clientele of 800 people in Belgium and over the course of twenty months it was estimated that he had generated a revenue of €133.000 (Hormonencel, 2012). In the Netherlands a truck containing a "massive amount" of AAS, was estimated to be worth €81.000 (Rijksoverheid, 2009, March 13). While these amounts indeed 'sound' substantial there are two issues with these estimations.

First, my calculations found the value of the seized PIEDs to be lower than those estimated by officials or mentioned in the official reports and media

articles. For instance, a Dutch official provided me with a list showing part of the confiscations made in 2013 with the estimated revenue, which the official had calculated himself and had prepared for a meeting earlier in that year. However, upon closer examination it appeared that this official had made a common mistake in his calculations. Specifically, he had not taken the total amount of ampoules the AAS were sold for into account. To illustrate this, I have taken one of his calculations from his overview which involved the confiscation of 400 grams of testosterone enanthate. He calculated this to be worth €63,320. Testosterone enanthate is usually sold on websites for €40 per 10 millilitres (250mg/ml). However, the authority in question thought that 250 milligrams of active ingredient was sold for €40 on the website. Yet, the substance is actually sold in boxes of ten ampoules of one millilitre each containing 250 milligrams of testosterone enanthate. This means that in total there is 2,500 milligrams of active substance in ten millilitres. Therefore, from 400 grams you can make 160 vials (400,000 milligrams/2,500 milligrams) or 1.600 ampoules, which may be sold for an estimated €6.400 (160x€40). Quite a substantial difference compared to his estimation of €63,320. Another example comes from the 2008 annual report of the Hormonencel. The Belgian customs service seized 60 kilos of testosterone enanthate and estimated this to be worth €3.264.000. However, according to my calculations – based on the same method described above - this would be really only worth approximately €960.000, which again is quite a significant difference from the calculations of the authorities. My intention here is not to criticize the methods used by the Dutch and Belgian officials, but to point out that these statements regarding the illegal revenue should be interpreted with care, and may differ depending on what calculations are being used.

The second issue is that while Internet dealers, large-scale distributors and importers may be able to generate considerable revenues; these are not sensational especially when compared to other illicit drug markets (Paoli & Donati, 2014). For instance, Paoli and Donati (2014) estimated that the yearly revenue generated by the Italian market for PIEDs is an estimated €537 million. While this is quite substantial, the revenues generated by the market for PIEDs remain considerably smaller than the revenues of, for example, the illicit drug market for cocaine. To illustrate this point, the authors estimated the retail revenues of the Italian cocaine market to be approximately €3.685 million, nearly seven times as large as the PIED market. When looking at the Dutch and Belgian situation, the street value of 1 gram of cocaine costs around €53 in Belgium (*Nieuwsblad*, 2014, April 14) and around €55 in the Netherlands (Trimbos, 2014, August 7). If we multiply this with the amount of cocaine seized in Belgium (18.179.741 grams) and the Netherlands (7.937.000 grams) in 2012 (see chapter 7), the revenue generated from this trade is an estimated €963 million in Belgium and in the Netherlands approximately €436 million. Most importantly, note that this is *the revenue made for one particular illegal drug*,

while Koert and van Kleij (1998) estimation of €70 to €90 million constitutes of *a variety of different types of PIEDs* (the main one being AAS).

Nonetheless, according to Belgian and Dutch authorities interviewed in this research, dealers can "generate massive, massive amounts of money" (Thomas, Dutch official, interview), especially by producing their own AAS. Producing your own AAS may become quite profitable due to the ease and low price at which raw materials can be purchased for, the relatively simple process of producing AAS, and the increasing use of the Internet AAS as a point of sale (see chapter 8). For instance, in the case of Dennis, who was arrested for illegally producing AAS and selling them over the Internet, the authorities discovered that in a four-year period (2009-2013) he had generated an illegal profit of at least €230.000 (Case 8 NL). This calculation was based on his in- and out-going bank transfers. The authorities suspect that this amount is most likely even higher as no cash transfers were taken into this calculation (in the home of the suspect envelopes with cash and customers' orders were found). Moreover while, Roy, a Dutch producer and distributor, did not want to mention the amount he makes as it "only wakes 'sleeping dogs' and there are people who also would like to ride that wagon", he did indicate that he makes quite a substantial amount, or at least earns enough to live "a comfortable life". For these individuals who produce on a large scale in the Netherlands, dealing PIEDs may be a profitable business. However, more data is needed to assess the profit margins of large-scale producers and distributors and their market share.

In general, in both Belgium and the Netherlands, the revenues generated by the production and distribution of PIEDs is relatively modest, particularly when compared to other illegal drugs. Further, the Dutch and Belgian cases illustrate that most earnings seem to be invested in regular living expenses and luxury goods (e.g., car), or to support their own consumption. Little evidence was found which suggests 'real' money laundering, such as investments in legal businesses or buying real estate. In some cases a PIED dealer did set up a fake pharmaceutical company in order to import (raw materials of) PIEDs and to distribute them in Belgium or the Netherlands, but this was rather exceptional (e.g., case 23 BE; case 39 NL; Case 40 NL). In addition, some dealers and producers (partly) owned a legal company such as a supplement shop or a pharmacy in relation to their legal profession. However, these businesses were often owned before they began dealing PIEDs. This is not to say that these legal businesses are not used to launder money, but that they were not specifically set-up for their dealing practices. Rather, as indicated in the previous chapters their dealing practises have derived, in part, from their legal activities. There was little evidence found in this research to suggest that these 'investments' of PIED producers and distributors have been able to infiltrate or affect any sector of the Dutch and Belgian legitimate economy.

9.3 The PIED market and the harms of the Internet

Despite enforcement efforts, illicit drug markets have proven to be quite resilient (a.o., Hough & Natarajan, 2000; May et al., 2000; Sterk & Elifson, 2000; Pearson & Hobbs, 2001; Strang et al., 2012). For example, several common effects are that open markets transform into closed ones (Edmunds et al., 1996; May & Hough, 2001; May & Hough, 2004), and that changes are made in the methods and types of distribution, such as the use of new technologies (e.g. mobile phones) (Aitken et al., 2002; Caulkins & MacCoun, 2003; May & Hough, 2004) and the increasing sophistication of drug markets (e.g. complexity in use of personnel) (Maher & Dixon, 2001). Such effects have been noted in the previous chapters as well: suppliers increasingly make use of the Internet, dealers start to produce their own PIEDs in order to avoid detection and to assure quality, and specific markets become less accessible for certain users (transform from open to closed markets) (see also Koert & van Kleij, 1998; Oldersma et al., 2002; de Hon & van Kleij, 2005; Maycock & Howat, 2007; Kraska et al., 2010; Wassink et al., 2010).

Due to these market changes it becomes more challenging to effectively target this illicit market, the Internet being the prime example. Nevertheless, Belgian officials are highly active in targeting the online market for PIEDs. The Hormonencel, for example, blocks AAS selling websites to prevent people from buying PIEDs. Belgian users who go to an illicit website are redirected to a 'stop page'[82] from the government. Despite their efforts, however, it seems to have had very little impact, in particular when it comes to foreign websites, as there are many ways to by-pass the blocking action of the Hormonencel (e.g., the use of a proxy server). Yet, the Hormonencel continues this approach as the fact "that there are many ways to get around this limitation, is no reason to do nothing" (Flemish Parliament, 2013, August 22).

However, doing nothing may in some cases be a better option as enforcement activities may actually increase security and counter surveillance of regular or darknet websites. For example, Buxton and Bingham (2015) found that closing down Silk Road, a darknet website, had no effect on preventing the sale or purchase of drugs, but rather drove communications between buyers and sellers further underground and led to a rise in registrations on other darknet sites. In response to the seizure of Silk Road, new decentralized open source markets are emerging, and the darknet has actually strengthened as a result of law enforcement efforts. The effects and consequences of these new Internet markets have yet to be established. Similarly, the enforcement activities in Belgium may lead to a plethora of new AAS selling websites. The growth of Dutch AAS selling websites active on the Belgian market illustrates this point (see

[82] A big red 'Stop' signal is displayed with the text, "You are redirected to this website because the website your are trying to visit holds a content that according to the Belgian law is illegal. In case you are the manager or owner of the website and feel that this measure is unjustified please contact us by calling this number [number is provided]".

chapter 8). Belgian and Dutch users seem to purchase PIEDs predominantly through conventional websites, but it may be that closing these websites down will simply result in a growth of people buying PIEDs from the darknet or other more clandestine sources (e.g., ghost websites).

In contrast, the lack of regulation in the Netherlands has resulted in the proliferation of AAS-selling websites, which in some cases have existed for several years. While a particular concern of buying over the Internet is that the quality of PIEDs is poor (de Hon & van Kleij, 2005; Wassink et al., 2010), these websites are becoming increasingly sophisticated with review systems, ratings, return policies, and so on. Importantly, through these user-ranking systems, both based on Internet reviews and word of mouth advertisement, users have a more reliable way of determining the quality and purity of the product (e.g. trusting the feedback of previous users). For example, even illicit drugs purchased on the darknet appear to contain the expected substance more often than alternative sources (e.g. personal contact) (Global Drug Survey, 2015). Indeed, these long lasting AAS-selling websites in the Netherlands seem to deliver relatively 'good' quality PIEDs (see chapter 8), which is one reason why they have lasted so many years. The websites have built up a good reputation amongst their customers due to delivering their products and giving positive results (see chapter 8). Therefore, closing down these websites may actually have a negative impact as it could give rise to new ghost websites of which users are unsure of their reliability and quality of the products sold.

9.4 Organized crime, sport and the PIED market

Armed with the evidence of various scandals (e.g. Balco scandal, operation Gear Grinder) and a growing body of research (Donati, 2005, 2007), the media, sport officials and government agencies around the world assert that the illicit market for PIEDs is driven and controlled by 'mafia-type' organized criminals (see chapter 1). For instance, David Howman, general-director of the World Anti-Doping Agency (WADA), suggests that, "the biggest threat to sport is organized crime", and that "those who are distributing drugs, steroids, HGH [Human Growth Hormone] and erythropoietin [EPO] and so on, are the same characters who corrupt athletes and pay money to fix games" (The Guardian, 2014, October 7). Further Sandro Donati, the former coach of Italy's national athletics sprint team and current WADA consultant, identified the PIED trade as a "mafia-type" organization during his speech at the 2005 "Play the Game" conference and suggested that "mafia families" are in full control of the "black market". Subsequently, the anti-doping movement has called for greater coordination among law enforcement, and the establishment of legal frameworks at the domestic level aimed at the production and trafficking of PIEDs (Hoberman, 2012).

In Belgium, concerns were raised about the involvement of organized crime when a government livestock inspector was murdered in 1995 by the "hormone mafia" (Gollin, 2002, April 15). In response the Hormonencel was created that year to control for the use of hormones in the livestock scene, and in 2003 the PIED market for human consumption was included in their task description (see chapter 2). When looking at the first two annual reports of the Hormonencel (2004 and 2005) these criminal groups are described as "organized crime" with a "hierarchical structure" which is displayed in "the form of a pyramid. The higher in the pyramid, the smaller but more specialized the actors become" (Hormonencel, 2004, 2005). However, after 2005 this model was abandoned and the word "organized crime" is rarely used in reports, except in relation to pharmaceutical crime.

In the Netherlands, the government began to undertake action due to the growing evidence of non-medical PIED use (e.g. Vogels et al., 1994) and, more importantly, the establishment of the growing illicit market for PIEDs (e.g. Koert & van Kleij, 1998). Consequently, the law was amended in 2001 in order to more effectively combat the illicit PIED trade and specifically to curb the involvement of criminal organisations (Snippe et al., 2005). In 2002 several participants in the research of Oldersma et al. indicated that the PIED trade in the Netherlands was coming to be under the control of organized crime. However, Snippe et al. (2005) suspect that this assumption was based on one particular case in 2000 in which a criminal organization distributed PIEDs on a large scale. I have also spoken to an official who was involved in that particular investigation who remarked that he would not describe the suspects as organized crime; "Yes, it was organised, but there was nothing more to it" (Dutch official, field-notes police station). Although Snippe et al. (2005) did find some indications for the involvement of criminal organisations, this was rather minimal. In only four of the 21 cases were indications of organized crime found. However, of the four cases three were still running during the research of Snippe et al. (2005), and the one case concerned the case described above of which it may be questioned if it truly involved organized crime. Nonetheless, in both countries in the end of 1990s and early 2000s the fear of growing organized crime was prompted both Belgian and Dutch politicians to prioritise the repression of PIED production. This is quite typical for that time period as organized crime appeared high on the political agenda in the Netherlands (van de Bunt, 2004), and Belgium (Fijnaut & Paoli, 2004). In both countries politicians and the general public were concerned about the problem of organized crime and were in favour of far-reaching measures. Thus, it not surprising that these worries were likewise projected onto the illicit PIED market.

However, in Dutch and Belgian studies on organized crime and in police reports this type of crime is rarely linked to the PIED market, or even the broader spectrum of human enhancement drugs (HED) (for the Netherlands see van de Bunt, 2004; Kruisbergen et al., 2012, and for Belgium see DSB-SPC, 2010).

This finding has likewise been confirmed in the research of Paoli and Donati (2014) and in other official documents (e.g. see ACC, 2011; Interpol, 2014). Rather, research on the global markets for PIEDs has consistently indicated that organized crime plays a limited role due to the ease at which these drugs can be obtained, and the wide user base, which results in an extremely broad supply base. As a result, the ready availability of these drugs *reduces opportunities for organized crime groups to control or have significant influence* in this market" (ACC, 2011: 70; emphasis added). Likewise, in this research PIED dealing networks in Belgium and the Netherlands were predominantly described by authorities as 'single-working' cells, loosely structured and non-violent (see also chapter 7). For example, Vera and Joop mention:

> "KvV: Organized crime?
> J: Sometimes.
> V: Well, in Belgium less than in other countries.
> J: *The market is too small here*. If you focus on the Dutch speaking parts [in Belgium] then in the best situation it is Belgium and the Netherlands [to which PIED dealers supply their products], and that is it. I don't think they [Belgian PIED dealers] will succeed in the Netherlands, because there is already enough [sources to obtain PIEDs]. So it is quite small. *I think that you have to look at bigger producers, like in Germany, the former Eastern Bloc*. There you have bigger illegal laboratories that bring their own brand on the market. I think that will be more structured." (Vera & Joop, Belgian officials, interviews)

Interestingly enough, almost all participants, dealers, users and authorities, suggested that organized crime was 'not present here but elsewhere'. For example, anti-doping officials in both countries said there was no organized crime involved in elite sport but only in recreational sports, and often bodybuilding was mentioned as an example. While, bodybuilders said that there were no organized crime figures within the bodybuilding world, but that those "Internet dealers are definitely organized crime" (Bodybuilder, Belgian user, field-notes Dutch bodybuilding competition). Officials stated that there was little to no organized crime involved in the Belgian or Dutch PIED market, but that it definitely played a role in other countries, in particular the former Eastern Bloc and Asian countries were frequently mentioned. However, when asked for concrete examples none of the parties could provide one.

The 'external threat' narrative of organized crime is nothing new and can be traced back to the American conception of ethnically defining groups who act against the integrity of Western political economies as organized crime (Edwards & Gil, 2003). As Edwards and Gil explain, "whilst different outsider

groups, such as the 'Colombian Cartels', 'Chinese Triads' and, more recently, the 'Russian Mafia' have been added to the longer-standing suspicion of the 'Italian Mafia' and their US relations, the 'Cosa Nostra', this alien conspiracy theory has remained the connecting thread in the crime control policies of post-1945 US Federal Administrations" (2003: 267). The successful generalization of this theory is essential for understanding the emergence of (transnational) organized crime as an object of global governance. Indeed, the expansion in focus from the doping practices of athletes to the machination of what is presented as a global criminal mafia which is in control of the PIED market, has served to both justify failure and re-enforce the need for a larger and more potent anti-doping movement (Hoberman, 2012). Thus, whether or not organized crime is really involved, labelling it as such gives way to implement harsher measures and sanctions.

Furthermore, as bodybuilders form one of the largest using groups in the PIED market it would not be unreasonable to suggest that bodybuilding subcultures are an ideal target market for organized crime, and most of all economically rational dealers. Yet, in this research there were no indications of organized crime, nor that economic incentives were the primary motivator for dealing, even on a wholesale level. Indeed, the data clearly suggests that bodybuilders often buy PIEDs from within their own subcultures and in many instances produce their own AAS. These PIED suppliers are often neither (solely) motivated by profit nor are part of a larger dealing network. Rather, these dealers are often 'over-socialized' into the structure and culture of bodybuilding, and follow the cultural scripts that come with their group affiliation. Likewise in the elite sport scene much of the available evidence would suggest that the problem of doping supply is *internal* to the world of sport (Fincoeur et al., 2014; Paoli & Donati, 2014). While, the dealing of PIEDs has been fashioned as a problem of 'outsiders', the ways in which sport structures create and promote doping opportunities have been ignored, thereby neglecting the *problem of insiders*. For example, when looking at several recent large-scale doping scandals such as the Armstrong affair, or the recent revelations of anti-doping corruption in Russia the accused are predominately sport physicians, coaches, anti-doping officials and the athletes themselves.

Indeed, in several Belgian PIED cases included in this study, connections were drawn between elite sport and the health care sector, such as sport physicians, general practitioners and pharmacies (see chapter 4; see also Paoli & Donati, 2014). For example, in 2010 a cyclist was discovered who obtained a large amount of PIEDs through a general practitioner. The cyclist also ordered the PIEDs through foreign pharmacies located in Italy, Spain and Switzerland (Hormonencel, 2010). While no cases were found which related back to the elite sport, Dutch officials did confirm that when something is discovered there is often a connection between the medical and/or sport sector:

> KvV: […] what about elite sport [talking about the connection with the black PIED market]?
> T: No. They have a complete different source. A user, like a cyclist or something, is supervised in a complete different way. They don't dare to take those kinds of products [illicit market products]. That is just too diffused. You don't see that.
> KvV: Do you see where it comes from?
> T: Very seldom, very seldom. Often it involves a physician or it comes through a coach […]." (Thomas, Dutch official, interview)

These cases and interviews indicate that most elite athletes retrieve their products from someone close (e.g. coach, physician) or through regular medical channels (e.g. general practitioners).

However, the expansion of anti-doping to include doping suppliers appears to be deterring the medical experts from staying in the market (Fincoeur et al., 2014). Consequently, a change has occurred in the market; whereas PIED suppliers related to elite sport were traditionally 'cultural products', use is now often a secretive practice and socially oriented suppliers (e.g. sport physicians, coaches) are no longer prepared to take risks of supplying PIEDs. The clandestineness of doping practices has led elite athletes who dope to increasingly consider the illicit market or other semi-legal channels (e.g. veterinarian) as a potential source for PIEDs (Fincoeur et al., 2014). In three Belgian PIED cases (two in 2006 and one in 2010) cyclists were discovered to have obtained their PIEDs through an illicit market source. For example, Rolf, a former competitive bodybuilder, supplied PIEDs, mostly EPO, to cyclists in Belgium (Case 6 BE; see chapter 5). Rolf also gave nutritional advice to several elite cyclists who all tested positive for doping. Doping in elite sport, for now, appears internal to the world of sports, and despite the claims of anti-doping officials, seems to be far less related to the 'criminal underworld' and 'organized crime'.

In addition, this shift from medical products to illicit market sources in both Belgium and the Netherlands has led to increased health risks (e.g. poor quality of illicit market products) and the rise of suppliers devoid of social and cultural characteristics. Chapter seven suggested that the stricter regulation in Belgium may be facilitating the replacement of socially oriented dealers by more overtly criminal types who do not care about the well-being of the user. Moreover, as Belgium has become more repressive towards the use, production and sale of PIEDs, Dutch dealers have capitalized on the opportunity to expand their dealing activities. Because of its geographic location along the Belgian border, the Netherlands is susceptible to the possible undesired effects of Belgian supply reduction strategies. A growing illicit market has developed from the simultaneous over-regulation in Belgium and the under-regulation in the Netherlands. Similar displacement effects have long been well established in

other illegal drug markets (e.g. see Dorn & South, 1990; Caulkins & MacCoun, 2003; Decorte, 2010). Most importantly, pushing socially oriented dealers out of the market, such as bodybuilding coaches and medical experts, enhances opportunities for monopolization and the risk exists that 'non-experts', 'real dealers', or 'organized criminals' will replace this type of supplier. These criminal individuals and groups are attracted to the market due to the potential profits, and these criminal entrepreneurs often have links to other criminal activities (e.g. drug trafficking) and often do not shy away from using (the threat of) violence to protect their market share (chapter 7). The problem with the rise of these market-oriented dealers is that they bring with them a host of increased risks such as loss of expert advice (e.g. cycles), PIEDs of bad quality and a 'hardening' of the market in general (de Hon & van Kleij, 2005).

9.5 Anti-doping, public health and recreational PIED use

There seems to be a tendency amongst policy makers to frame PIED use outside of elite sport as an issue within sport, and to call for the same types of policies that are being used in anti-doping (Kimergård, 2014a). This is most readily evidenced by the overlap between anti-doping initiatives and national drug laws in Belgium and in particular the relationship between national anti-doping agencies and the police. Indeed, the national efforts in Belgium and the Netherlands to address the recreational use of PIEDs are interwoven with sport policy. However, the problem is that when the concept of 'doping' is transferred directly from elite sport to describe the recreational use of PIEDs in gyms, policy naturally attempts to tackle the issue with the same punitive approach as is done in elite sport (Christiansen, 2011: 139). Looking at the Dutch and Belgian situation PIED-related initiatives tend to focus on prevention (the Netherlands and Belgium) and deterring users with doping tests and monetary sanctions or suspensions (only Belgium), while limited attention is given to harm reduction programmes (some in the Netherlands). Authorities and policy makers in both countries have largely transferred anti-doping practices to tackle the use of PIEDs by the general population; resulting in a focus on fitness groups while ignoring other PIED using population that are not connected to recreational sport.

Currently the main target group of doping controls and preventive work in the Netherlands and Belgium are male AAS users who regularly train at the gym. It is not unusual that anti-doping or PIED campaigns would focus on gym-related groups such as male fitness trainers and bodybuilders. A number of studies have shown that men who do weight training use AAS more often, and more frequently, than women or people who do not go to gyms (e.g. Leifman et al., 2011). However, this persistent bias towards male AAS users in a fitness context results in an ignorance of other non-athletic using groups (e.g. police officers, students) and the use of different types of PIEDs (e.g. stimulants) (e.g. see

Detmar et al., 2005; Christiansen, 2011; Thualagant, 2012). For example, while in principle doping controls in Belgium are meant to be random, it is often male weight trainers with a more muscular appearance who are likely to be subject to these tests (see also Christiansen, 2011). More precisely, it is often bodybuilders and other 'hard core' weight trainers who become the target of anti-doping and police investigations. The unusual look (size) of many bodybuilders and the 'suspect' nature of their subcultural affiliations often raise suspicions (Monaghan, 2001). As a result 'Lombrosian practices' are employed in Belgium (mostly Flanders) whereby police and anti-doping officials are 'muscle profiling' to identify PIED users and dealers (Mulrooney & van de Ven, 2015, January 21). For example, Pim, a Belgian official, mentioned:

> "KvV: Is there a minimum or maximum amount of people you test [during a doping control in a gym]?
> P: We always get an order. On the order form it is noted that, "you have to check that many persons". In addition, the physician has the right to select someone extra if he has a suspicion. So, if we, for example, have to control twelve people, we selected the twelve people, *but when someone walks in with a certain posture* [more muscular]… Well, the *physician has the right to select additional people for the doping control*." (Pim, Belgian official, interview)

In addition to the targeting of doping controls in Belgium, preventive work and information campaigns in both countries tend to focus on male fitness trainers. For example, the primary target group of the True Strength campaign in the Netherlands are gym members. While the goal is to reach different types of people (non-users and potential users), the main target group again seems to be (young) male weight trainers who are considering using AAS. As a result of this gender and sport bias, the largest segment of the PIED using population is neglected: adult non-athletes (e.g. see Cohen et al., 2007). For example, Vera and Joop, two Belgian officials, mentioned:

> "J: It is *not just athletes*. It is just *easy to go to an athlete with the anti-doping authority*, and it is *easy to go to a fitness centre*.
> KvV: But aren't many investigations based on controlling a gym? If there is no profile, shouldn't you then also control other locations?
> J: *The problem is that the anti-doping authority has to do it*. And they have to go to athletes.
> V: It is just the easiest way.
> J: It is a *bit of ignoring of the rest of the problem*, which I regret. It *focuses too much on the athlete*." (Vera & Joop, Belgian officials, interview)

One could argue that focusing on certain 'high-risk' groups is necessary and effective as male bodybuilders and other weight trainers have a higher risk of using these substances. However, from a public health perspective, having such a sport-focused policy is irrational in the context of fighting recreational PIED consumption, as the use of PIEDs by this group has a different purpose from the use of doping in elite or even recreational sports. For example, Christiansen (2011) explains that many stimulants on the banned list (e.g. ephedrine) of WADA are used by woman – as well as by bodybuilders – in their pursuit of losing weight. However, as a consequence of the Danish testing regime being bound to the World Anti-Doping Code (WADC) particular types of PIEDs are not tested for which are more common in non-athletic using groups (e.g. weight-loss drugs). Yet, the adverse health effects of these types of PIEDs are not believed to be less serious, and in fact maybe even more dangerous, than those of steroids (Christiansen, 2011). For instance, 2,4-Dinitrophenol (DNP), an illicit weight-loss drug, has been linked to 62 deaths (Grundlingh et al., 2011). Furthermore, Stubbe et al. (2005, 2013) also showed that the use of stimulants to lose weight had a higher prevalence than that of AAS, and recommended that preventative health work should not solely focus on men who use AAS, but should include interventions focusing on the use of stimulants to burn fat. My argument here is not that Belgium should expand their testing regime, but that both Belgium and the Netherlands fail in achieving their goals, as they tend to overlook other populations that may use PIEDs by over focusing on a sport driven anti-doping model.

Another consequence of this fusion with the moral and ethical norms and values of sport is that it hinders medical studies to conduct research in this area. For example, Ryan, a Dutch physician, mentioned that,

> "R: The problem is that we are *not allowed to do scientific research*. There are a lot of advantages to be gained with steroids, but every time when we write a proposal the ethical commissions terminates it [KvV: why?]. They just say that, *"doping is too dangerous"*. […] *The ethical commission finds it 'unsportsmanlike', and that is really a problem*. Scientific research could bring so much to light." (Ryan, Dutch physician, interview)

In similar trend Pim de Ronde, the head endocrinologist of the Dutch AAS clinic, suggest that, "*When you as a physician engage with doping, you quickly raise suspicion. That is also the reason that the serious medical science uses stays far away from doping and doping use. That is why it is so important to be transparent about the goals of the clinic*" (Parool, 2013, February 9). Due to ethical requirements of clinical trials and negative publicity, at this point it is unlikely for medical studies to gain approval to test the safety of AAS and other PIEDs

(see also Palamar (2011) on the ephedrine market). However, such medical studies could be beneficial as they may affirm or rule out the adverse effects of long-term PIED use, while simultaneously monitoring the health of its users.

Finally, this intertwinement of anti-doping and national PIED policies hinders the development of harm reduction initiatives. Christiansen and Bojsen-Møller (2012) argue that politicians are reluctant to implement harm reduction measures as this may send confusing signals in respect to their stance on the doping issue, and a change in the guiding principles is judged to lead to additional ethical dilemmas (e.g. the approval of harm reduction measures for PIED users). Nonetheless, educational campaigns, treatment options and other measures need to be in place in both countries to cope with the potentially diverse population of PIED users, and the rising use of HEDs in general (e.g. use of Ritalin by students). Consequently, due to a general lack of public health care services, users often create and adopt their own guidelines in an attempt to reduce risks (Dennington et al., 2008; Kimergård, 2014b). During my research, for instance, users often mentioned that they set up personal rules in an attempt to identify better quality PIEDs (e.g. ordering from so-called 'trusted' sources), going for medical check-ups and using other PIEDs to counteract the side effects of steroids as opposed to stopping their consumption. Some of these harm reduction strategies currently employed by users are not evidence based and may not be effective, or in some cases may even lead to greater harm (Kimergård, 2014b).

So long as national efforts to address the use of PIEDs remain interwoven with sport policy, measures are inclined to overlook other PIED using populations, hinder research, and will hamper harm reduction initiatives. Therefore, I argue that it is necessary that anti-doping campaigns and their controls in elite sport be separated from public health policies directed at recreational PIED users.

9.6 Doping controls and the displacement of Belgian users

In Belgium, and particularly in Flanders, doping tests are performed in gyms and at bodybuilding competitions; while in the Netherlands this is not the case (see chapter 2). The goal of these doping controls in gyms is ultimately to protect an individual's health by deterring them from using PIEDs out of the fear of being banned from competitions, gyms and/or other organized sports and/or having to pay a fine. For instance, several policy documents of the Flemish Commission for Culture, Youth, Sport and Media (CYSM) mentioned;

> "Control them [amateur/recreational athletes], because *it is for their own health.*" (CYSM, 2010, February 25)

> "In the past I also addressed the problems of sports such as bodybuilding and fitness. The annual statistics show that the problems stay severe. […] If so many people are using doping *than it actually is a plague*. I want to highlight that concern. I regret that in the fitness world, of which in principle *the mission is to improve health*, the plague is just as severe. We really *have to enforce* [anti-doping], minister, in order to completely - or in the degree possible - *eradicate it* [PIEDs]." (CYSM, 2013, February 7)

While this study focussed on recreational and competition bodybuilders, some other recreational weight trainers were spoken to (e.g. people who regularly train at gym, power-lifters), both users and non-users, who work out in Flemish gyms as well. Most of these weight trainers are not really aware that doping controls may take place and did not seem overly concerned both in the sense of being tested or sanctioned. In a preliminary research involving six Flemish recreational weight trainers who currently use or had used PIEDs in the past, the participants noted that they would not stop taking PIEDs despite the controls (De Kock, 2013). While this was a small sample and therefore not representative of the entire Flemish gym population, it suggests that some recreational trainers who use PIEDs do not seem to be deterred by the doping controls. Furthermore, Ask Christiansen has conducted research on the effects of doping tests in Danish gyms (e.g. see Christiansen, 2011) and did not find evidence for the effectiveness of these controls. Rather, he argues that the possible unintended outcomes of a positive test are that users will simply join another gym (which do not test), start to train in basements and private clubs, or stop training altogether (Christiansen, n.d.). Likewise, during my fieldwork Belgian bodybuilders in particular mentioned that people are increasingly starting to train at home, or arrange a training location together with other bodybuilders. However, I did not encounter these 'private clubs' and the people I talked to were still often training in regular gyms. Whether or not recreational trainers really move to different locations, doping controls do not appear to deter people from using PIEDs.

In addition, in recent years Belgian and Dutch bodybuilding federations began to cooperate and now are organizing bodybuilding competitions together, which of course all take place in the Netherlands. Belgian officials are not allowed to test across the border, therefore, decreasing the chance that bodybuilders will be tested (they can still be tested at national competitions and in gyms in Belgium). One example, which illustrates that Belgian bodybuilders do not refrain from using steroids and other muscle drugs, was when Belgian anti-doping officials unexpectedly showed up at a Dutch bodybuilding competition to control Belgian bodybuilders. As soon as the anti-doping officials arrived the Belgian bodybuilders that competed that day fled to their cars to avoid being tested (HLN, 2009, May 18; NOS, 2009, May 18). This was a one-time exception

and Belgian authorities are no longer allowed to test at Dutch competitions. Moreover, Belgian bodybuilders mentioned that they sometimes advertise fake locations, or the event is moved at the last minute to avoid doping controls. Belgian officials confirmed that it has happened in the past, that they went to the place where the competition was supposed to be held, nobody was there upon arrival. In addition, while little empirical research exists on the prevalence of PIED use in bodybuilding in Belgium and the Netherlands, the studies that do exist show that steroid consumption amongst recreational and competition bodybuilders is high in both Belgium (Delbeke et al., 1995; van Eenoo & Delbeke, 2003) and the Netherlands (De Boer et al., 1996).

Nonetheless, during my attendance at a Belgian bodybuilding competition Belgian athletes were generally much 'smaller' than Dutch bodybuilders. The decrease of positive doping tests seems to confirm this view: from 75.9% bodybuilders testing positive in 2008 (N=29) to 21.1% in 2014 (N=38) (Dopinglijn, 2008, 2014). Therefore, while Belgian bodybuilders do not necessarily halt their consumption, it may be that they are using less PIEDs and/or use better concealing methods. Several Belgian bodybuilders confirm that these bodybuilders who only compete at Belgian competitions (and not internationally) are smaller as a result of using no PIEDs, less PIEDs, or different types of PIEDs to avoid positive tests. The following quotes illustrate this point:

> "C: You can really see *a difference between bodybuilders who compete in Belgium or the Netherlands*. They [Belgian bodybuilders] are *much smaller*. In the Netherlands the athletes are much bigger both the Dutch and the Belgian athletes. Here they are much more careful because they don't want to be tested positive.
> KvV: Would you say that these bodybuilders competing here [at Belgian competitions] are using less or nothing at all?
> C: Yes, they are *using less but as soon as they can compete elsewhere this changes*." (Chris, Belgian ex-dealer, field-notes Belgian bodybuilding competition).

> "L: Just look. They are *much smaller* [Belgian bodybuilders], and the ones that are using steroids you can pick out right away. In the Netherlands they [bodybuilders] use much more. Because there are no [doping] controls.
> KvV: So, are these 'smaller' bodybuilders not using anything?
> L: I am *not saying nothing but probably less or just differently*.
> KvV: Differently?
> L: Well, in the sense that they would *use different products or use different methods to avoid being tested positive*." (Lidia, user, field-notes Belgian bodybuilding competition)

Belgian bodybuilders first need to compete in Belgium in order to be qualified to compete in the Netherlands or in other countries, and to compete on a higher level. So, as soon as they are allowed to compete in the Netherlands or in other countries it could be that these bodybuilders start using (more) PIEDs to be able to keep up with their Dutch competitors. The Belgian bodybuilders I met at Dutch bodybuilding competitions were often bigger (muscular wise) compared to the ones only competing on a national level, which suggests that these bodybuilders may increase their consumption when competing abroad. However, the fact that these bodybuilders are more muscular does not only have to do with consuming higher amounts of PIEDs. Indeed, competing on a higher level also involves more training and more nutrition resulting in more muscle mass.

This 'displacement' of bodybuilders has been noted in Sweden as well. On a bodybuilding forum one of the moderators writes about how the restrictive laws for both using and selling AAS in Sweden has affected bodybuilding (Eskilsson, n.d.). One of the consequences mentioned is that some bodybuilders have chosen to move to Norway because of their more permissive laws towards steroids. The fear of getting caught does not seem to be an important reason for bodybuilders to stop using doping, or to stop after being caught. A repressive approach will most likely not impact PIED use, as users continue their use and simply pursue their bodybuilding passion elsewhere or in another manner. Moreover, this displacement of drug users to less repressive countries, in particular to the Netherlands (Downes, 1988; Chatwin, 2011), and even specifically between Belgium and the Netherlands (Decorte, 2007, 2010), is well established in relation to other drug markets and is not unique to the PIED market.

In addition, many bodybuilding forums note that bodybuilding federations often lack the finances or will to conduct proper doping controls (e.g. only in-competition testing and no out-of-competition testing), and that there are many ways to beat the system (e.g. timed cycles, micro-dosing)[83]. During my fieldwork a Belgian bodybuilder, and coach, mentioned that, "you just need to know the tricks" and that it is "easy to avoid positive tests". He did not want to discuss these "tricks" with me as revealing these practises could give him a disadvantage in the field of anti-doping. Bodybuilding is aligned with dominant frames of human performance and sport competition (e.g. testing the limits of human nature, winning) (Liokaftos, 2013, August 15), and, therefore, it is no surprise that bodybuilders will resort to similar practices as elite athletes to get around the doping system. By the time substances are banned and tests are developed to detect them, athletes are taking more experimental drugs that tests cannot detect or are not calibrated to detect (Coakley, 2009), or may be using dangerous

[83] For instance, see "How natural is natural bodybuilding" and "Beating the CrossFit drug test" on T-nation. T-nation is a popular bodybuilding website which amongst others writes on strength training, bodybuilding, nutrition, supplements and PIEDs.

masking agents to avoid positives (Smith & Stewart, 2008). So, while these Belgian bodybuilders initially may refrain from using PIEDs or may use less drugs, it could also mean that health risks are increasing due to the use of experimental drugs or masking agents in order to avoid positive tests. Due to the absence of empirical research, it is difficult to estimate to what extent bodybuilders and other non-medical users using experimental drugs or masking agents.

As a consequence of pushing PIEDs and PIED-like behaviour underground Belgian users seem to be willing to go to greater lengths to obtain PIEDs. In particular the heavy users such as bodybuilders - who are often the target of doping controls - resort to other methods (e.g. the use of experimental drugs) or sources (e.g. Internet) to obtain their products. This is also the very group that may suffer the most harm due to the high amounts they consume and the wide variety of products they take (Kanayama et al., 2008; Meinik et al., 2007). Therefore, the current Belgian approach may lead to more adverse health effects rather than preventing them. Doping controls are invasive, are limited in their testing capacities (e.g. difficult to detect substances naturally produced by the body), and are expensive (Coakley, 2009). The money spent on doping tests can be better used to fund health education for non-medical users, and to teach users about health or how to set health priorities when playing sports.

9.7 Reducing the harms of PIED users: a medical barrier?

Prevention and treatment research in the area of PIEDs is undeveloped and many questions remain unanswered as to what measures are effective in limiting and treating PIED-related problems (European Commission, 2014; Kimergård, 2014a). There is particularly very little knowledge on the success of intervention programs aimed towards PIED users. For example, it is unknown if the doping controls in Belgium have a deterrent effect on users, and if it is sufficient enough to reduce the amount of users. While evidence and support for harm reduction for other illegal drugs is growing, it is far behind in terms of interventions directed towards PIED users.

The Netherlands is actually one of the few countries to implement educational campaigns in recreational sports (see chapter 2). Aside from educational programmes (e.g. True Strength), a health clinic opened in 2010 which specifically targets this type of illegal drug user. The 'steroid clinic' (*de 'Anabolen Poli'*) was established to minimise the harms of PIEDs and to research the nature, size and adverse health effects of AAS use in the Netherlands. The progress of the clinic appears to be positive as people from all over the country are attending it (Anti-Doping Denmark et al, 2012). However, an issue users mentioned during this research is that the clinic only treats people who have medical problems and does not help ongoing users who seek medical advice and/or check-ups. In an interview with the *Parool* (2013, February 9), Pim de

Ronde, the head endocrinologist of the steroid clinic, affirms this reluctance to help:

> "*We monitor no one and do not give advice about use. This could lead to users starting to experiment with higher doses or new substances as long as the health checks allow for it. I do not wish to participate in this. People who with full knowledge continue to use steroids, I rather not see. We don't want to facilitate use*". (Parool, 2013 February 9)

Subsequently, ongoing PIED users have limited possibilities in the Netherlands to reduce any (potential) harm that may come from their consumption. The Dutch television program "Nieuwsuur" (News-hour) recently examined to what extent physicians encounter PIED consumption in their practice. To get a general idea the *Vereniging van Artsen Automobilisten* (VvAA) (Association of physicians and drivers) (2013) conducted a survey among physicians and found that of one of every three physicians (35%) is confronted with doping-related issues. During the program a doctor, specialising in this topic, was interviewed who mentioned that colleagues often referred patients to him, due to their inexperience with PIED patients and because they simply did not want anything to do with them (Nieuwsuur, 2013, February 27). A previous study confirmed this unwillingness of physicians in the Netherlands to help PIED users as well (Hartgens et al., 1998). This more 'hostile attitude' of physicians was often noted by Dutch bodybuilders, for example, Nathan, a PIED producer and distributors, mentioned;

> "N: In the Netherlands *doctors are always so judgemental*. There are only *a very, very few doctors that are willing to help* and that *actually know what they are talking about*. I mean that is also a problem that doctors just don't know to what to look. They don't know how to read the values on how to give advice. *Most doctors just don't want to help you and just say, "don't do it"*." (Nathan, producer & distributor, field-notes Dutch bodybuilding competition)

In contrast, in Belgium, users often mentioned that they had a relatively positive experience with general practitioners. Users mentioned that physicians were often willing to medically monitor them and in certain cases were even prepared to prescribe PIEDs. However, the PIEDs that were prescribed are usually products that counteract the side effects of AAS or other muscle-enhancing drugs, and usually not the illegal substance itself (e.g. AAS). For example, Roel, a Belgian dealer, mentioned,

> "R: Quite some physicians here in Belgium at least are normal. *They*

> *help you out* by testing your blood and stuff. Of course not all physicians are willing to help, and *you need to know to which one to go to*. A lot of bodybuilders, including me, go to doctor Klaas [pseudonym]. He tests your liver values and that sort of thing. He *also gives advice on what better not to take*, depending on the side effects you have. Everyone goes to him because he just knows a lot."
> (Roel, Belgian dealer, interview)

Without consciously acknowledging harm reduction practices, Belgium reduces the harm of its users by having relatively accessible medical services, so long as you know to which general practitioner to go. However, Belgian physicians seem to be becoming less willing, or more careful, in medically supervising non-medical users and prescribing PIED-related medicines due to the increased police interventions (see chapter 5) (Fincoeur et al., 2014). In addition to this, since 2013 the Belgian NADOs have been encouraging sports physicians to sign charters whereby they commit to fight doping in sports by all means. While this charter is mostly directed at elite sports, it may be questioned to what extent this will affect the medical supervision of other non-medical users.

The rationale not to supervise or treat ongoing users in Belgium and the Netherlands is that it could be seen as a sign of approval, therefore, encouraging users to continue their use or even to engage in more dangerous practices. In addition to often being unwilling treat PIED users, physicians also tend to have very little experience with PIEDs. Indeed, general practitioners and other health services often lack the specialist knowledge to meet the needs of people who use PIEDs (Dennington et al., 2008; Chandler & McVeigh, 2013; Iversen et al., 2013). The health professionals' lack of knowledge forms a significant barrier for users to access appropriate heath care (Dennington et al., 2008; Chandler & McVeigh, 2013). Nonetheless, PIED using groups are also vulnerable to infections and other health risks, but are often overlooked due to a lack of epidemiological data. For instance, a UK study indicated that the overall prevalence of HIV among men injecting PIEDs was similar to that among those injecting psychoactive drugs in England and Wales (Hope et al., 2013). Of the participants 9% had shared injecting equipment (including drug vials), which is significant, but a frequently overlooked HIV transmission risk. Targeted interventions may help PIED users reduce this associated risk. Importantly, a Dutch study indicated that offering medical examinations actually brings more responsible use in terms of choice of substances and reduction of the amount of PIEDs consumed (van Kleij & van Kernebeek, 1995). Demand (e.g. educational campaigns) and harm (e.g. providing clean injecting supplies to users) reduction strategies may be mutually advantageous as they support and encourage healthy behaviour and therefore prevent potential problems, while also providing an opportunity to scientifically study the (long-term) effects of AAS and other PIEDs.

9.8 Assessing the harms of PIEDs in Belgium and the Netherlands

Table 11 provides an overview of the market areas in which authorities intervene, and whether Belgium and the Netherlands are effectively targeting that section of the PIED market. In this table "minimal" intervention is used if little to no effort is undertaken in this area, "medium" intervention is used when some strategies are implemented in this area, and "maximal" intervention is used when a great deal of attention is given to this area. The data shows that the PIED market has generated limited harms for both the Netherlands and Belgium. In both countries organized crime groups seem to be play a limited role, little profit is made, and almost no violence or corruption seems to occur in relation to the PIED market. The main harm seems to come forward from the large-scale production of PIEDs, which largely takes place in the Netherlands, however 'hard' conclusions cannot be made. Despite the poor quality of illicit market PIEDs, their production seems to generate a small set of notable harms to individuals. For instance, while the Dutch producer Dennis was convicted for knowingly producing poor quality AAS, there were no reported victims that suffered from using his products (Case 8 NL). In both countries there seemed to be little to no reported victims or PIED-related deaths, and society in general does not appear to be agitated by PIED consumption (e.g. the growth of secondary crime in order to finance use).

In contrast, Belgian officials are quite efficient in targeting small-scale producers and dealers, but fail to catch the individuals and groups that operate on a large scale. An important reason for this is that most large-scale producers and distributors reside in the Netherlands or other countries with a lax regulation. Moreover, Belgium does not seem to effectively prevent or lower PIED use, as users simply resort to different sources to obtain PIEDs (e.g. the Internet) or will use other, more dangerous types of PIEDs that are not (yet) detectable by tests. In the case of bodybuilders users simply go to the Netherlands or other countries to avoid doping controls and, ultimately, continue their use. While general practitioners in Belgium seem to be more willing to help PIED users, in general there are no health care services available for this group of users. In contrast, the Netherlands undertakes little effort to target both small- and large-scale producers and dealers in general. Due to the limited priority of PIEDs in the Netherlands a complete underground culture has grown in which individuals and groups manufacture their own AAS and distribute them online. While some demand (e.g. True Strength campaign) and harm reduction strategies (e.g. AAS clinic) are being implemented to prevent PIED use (with a focus on adolescents) and to minimise harms, in general this is quite limited, in particular for ongoing users.

Table 11

The areas in which authorities intervene, and whether or not Belgium and the Netherlands are effectively targeting that section of the PIED market.

Type of Enforcement	Type of Intervention	Belgium	Netherlands
Supply reduction	Arresting and sanctioning small-scale producers and dealers	Medium	Minimal
	Arresting and sanctioning large-scale producers and distributers	Minimal	Minimal
	Preventing growth of UGLs	Medium	Minimal
	Preventing use of Internet	Minimal (Users)	Minimal (Dealers)
	Preventing growth of illicit market	Minimal	Minimal
Demand reduction	Decreasing PIED consumption	Minimal	Medium
Harm reduction	Access to medical facilities	Minimal	Medium
	Providing health education	Minimal	Medium

The Dutch attitude, to not prioritize the PIED market, to a certain extent seems to be justified, as it appears to cause little harm (RIVM, 2009). Moreover, Belgian officials have to accept that their policies can have only a limited impact on the distribution and production of PIEDs in Belgium, as most illegal activities occur outside of the Belgian border. As long as the demand persists, producers and dealers may move from one location to the other; depending on the enforcement action undertaken in that particular region or country. This "balloon effect" has been well established in the drug literature (Costa, 2008; Greenfield & Paoli, 2012; Decorte & Paoli, 2014). Nevertheless, the fact that there is no concrete evidence does not mean that the problem is non-existent. PIEDs are not a visible problem because surveys rarely, if ever, assess for PIED production, supply or use, so statistical evidence of any harms is limited. On an international level there are increasing reports that people who inject AAS are a growing population in needle and syringe programs (e.g. Dawson, 2001; McVeigh et al., 2003; Iversen et al., 2012; Kimergård, 2014b), indicating that the PIED market is becoming a public health concern. In both countries there is a need for evidence-based, non-judgmental, practical information that addresses areas of interest and concern to PIED users and health care professionals (Dennington et al., 2008: x; Kayser & Smith, 2008).

However, as Hans Nelen and Wim Huisman (2008) describe in their article "breaking the power of organized crime", it is difficult to gather data and

establish causality between interventions and effect. It remains largely a matter of belief that there is some effect. Indeed, not all harms discussed here are necessarily confirmed in this research with 'hard' data. We need to acknowledge that it is notoriously difficult to establish cause and effect of particular interventions, and to interpret these results with caution. It is, therefore, useful to make a distinction between observed outcomes and plausible effects – including the unexpected and counterproductive ones – of these outcomes on the illicit PIED market. For example, an observed phenomenon in this research is the rise of underground labs in the Netherlands, which is illustrated by the case files, interviews with authorities and dealers, and my fieldwork observations. An observed phenomenon in Belgium is that Belgian bodybuilders have 'moved' to the Netherlands in order to avoid doping controls. This phenomenon is not only confirmed by the data from my fieldwork and interviews, but is likewise mentioned in Belgian policy reports.

Regarding the plausible effects, it is important to comparatively look at existing literature on PIED and other drug markets (since the literature on illicit PIED markets is limited), and to learn from previous research and experiences. A plausible effect, therefore, is that the move of Belgian bodybuilders to the Netherlands, the most heavy using groups, may increase health risks as there is no oversight on this group of users whatsoever. For example, Hope et al (2013) show that 1.5% of the steroid users in the UK who inject steroids and other muscle drugs had HIV, and drug literature indicates that intensified supply control measures could increase the spread of HIV among drug users. Another example is that Belgium and the Netherlands both seem to provoke the criminal market by attracting more dangerous individuals and groups (the market-oriented dealers), which may lead to an increase in the threat or use of 'systemic violence' (Goldstein, 1985). Literature on drug trafficking shows that both under- and over-regulation (e.g., Decorte, 2007, 2010) may attract these kinds of dealers and that these suppliers often do not shy away from using (the threat of) violence if it means that favourable positions will be secured (e.g., Caulkins et al., 2006; Werb et al., 2011). Therefore, while the use of violence is not that prevalent yet in both the Netherlands and Belgium, it may be that the PIED market will head towards this direction if law enforcement pressure continues to grow in Belgium, or if the market remains unregulated as in the Netherlands, allowing market oriented dealers free rein. However, one needs to be careful to not only attribute these effects to policy alone and to also look, for example, at the role of technical innovations. Indeed, the growing use of the Internet makes it easier for all kinds of dealers, including market oriented dealers, to enter the illicit PIED market in Belgium and the Netherlands. So, while certain harms are not necessarily established in this research (e.g., the spread of HIV among steroid users, an increase in violence), certain conclusions may be drawn based on these 'plausible effects' by learning from previous research and experiences.

9.9 Conclusion: is the PIED market an issue for concern?

Both countries do not seem to be successful in disrupting the illicit PIED market. So far, Belgium and the Netherlands have greatly reduced the supply of pharmaceutical regulated products, created a market for unregulated manufactured PIEDs which are either domestically produced (Netherlands) or imported (Belgium), and reduced the likelihood that PIED users are able to obtain medical supervision and advice. In Belgium the demand for PIEDs seems to be unaffected by the threat of criminal penalties or disciplinary measures and continued enforcement may worsen present health risks. However, due to the limited priority of PIED production and/or distribution in the Netherlands a large underground culture has developed, stimulated by the Internet, in which individuals and groups manufacture and distribute their own AAS. Although the involvement of organized crime is limited in Belgium and the Netherlands, both models seem to stimulate this criminal market by attracting more dangerous individuals and groups. Looking at the history of other illicit drug markets (e.g. Decorte, 2007, 2010), this could potentially evolve into a hardening of the PIED market (e.g. increase in systematic violence), resulting in less control over the quality of PIEDs, and ultimately increasing risks for users. Therefore, both the regulation and law enforcement practices around PIEDs in Belgium and ignoring the problem in the Netherlands may contribute to more harm and exacerbated existing ones.

In Belgium and the Netherlands there is a need for demand and harm reduction services to help keep PIED users healthy and safe. Without health care services dangerous practices may arise, such as sharing injection equipment, leading to risk of HIV or hepatitis virus infection. It is imperative that these health care institutions provide a service that recognises the diversity of the PIED using community including, for example, women who use weight-loss products to burn fat. However, as long as national efforts to curb PIED use stay interwoven with sport policy, measures are inclined to (1) focus purely on sport-related groups (male weight trainers), and (2) hinder the exploration of alternative approaches. It is time to rethink our approach to curbing PIED use in society. A good place to start would be to move away from ethically and morally charged sport driven anti-doping policy towards the development of local policy centred around public health and founded in the proximate realities of PIED dealing networks and consumption patterns. To adjust PIED policy accordingly there is a necessity for reasoned evidence gathered about health harms and PIED-related risks in both Belgium and the Netherlands. Further, in order to educate recreational PIED users we need to consider harm reduction policies in contrast to the often applied zero tolerance approach in elite sport (Christiansen & Bojsen-Møller, 2012).

Chapter 10

Conclusion

This research has explored the ways in which PIED dealing networks form and develop in Belgium and the Netherlands. In particular, it has sought to fill a gap in the extant empirical literature on the supply side of the illicit market for PIEDs in a number of ways. Firstly, by exploring the characteristics of persons involved in these markets, why they are involved in these markets, their dealing strategies and the cultural and social dimensions of PIED markets. Secondly, by examining how PIED markets are organised and structured (e.g. horizontally/vertically), and how relationships are formed and developed across both the national and international contexts. Finally, by analysing anti-doping and PIED policies adopted in Belgium and the Netherlands and their implications on these illicit markets in both countries.

In these concluding pages I will summarize the main empirical findings of this research, and consider their implications for PIED-related policies and for future research. To do so, I will first reflect on the three research questions by providing an outline of the main findings of my work. Second, I will discuss the practical implementations of this work in the Dutch and Belgian policy context, and what lessons may be drawn from these findings. Finally, I will address the limitations of this dissertation and provide suggestions for a future research agenda.

10.1 The market culture of PIEDs

The first research question was: what are the fundamental characteristics of PIED suppliers, their modus operandi and motivations in the contemporary illicit PIED market? The aim of this question was to explore the nature of PIED dealing and the characteristics of the individuals who are attracted to it. Specifically, I strived to differentiate the PIED market from other illicit drugs markets, to reveal attributes specific to the Dutch and Belgian context and to highlight the differences between the two countries.

An essential element of Belgian and Dutch PIED markets found in this research is the *market culture* in which PIED dealers operate. The data indicates that all of the characteristics highlighted in this research are ultimately a product of the type of market, or the 'nature' of the product we are dealing with; PIEDs and, in particular, AAS. First of all, the embeddedness of PIED dealing networks as legitimate social networks is critical for understanding this illicit market. The

data suggested that the legal professions of PIED suppliers were often directly related to their illegal activities. Indeed, there is a very fine and ambiguous line between the illegal and legal activities of PIED suppliers. For instance, the largest group of PIED dealing suspects in both countries were those who had a professional connection with the general gym environment (e.g. personal coaches, gym owners). These dealers made use of their connections in the gym environment, along with their knowledge on training, nutrition and PIEDs, to supply these illicit substances within Belgium and the Netherlands. The data also indicated that many PIED dealers were already devoted to a gym, sport, medical, or other subculture before becoming involved in dealing. Most importantly, these dealers often developed high levels of knowledge and skills due to the legal activities they were involved in, which transferred directly to dealing PIEDs.

However, a core difference between the Dutch and Belgian market is that in Belgium PIED suppliers with a medical profession (e.g. physician) were more frequently involved. One important reason for this is the difference in medical cultures in Belgium and the Netherlands. First of all, prescribing medication is more normalized and 'ingrained' in the Belgian medical culture, and, second, Dutch physicians are more restricted by general guidelines and rebuked when they deviate from these rules. The cultural differences, along with state guidelines, seemed to play an important role in the variations in (il)legally prescribing PIEDs between Belgium and the Netherlands. Nevertheless, not all PIED suppliers included in this research held a distinctive profession. The cases and data derived from the field show that certain groups of dealers did not have a specific (personal) connection to the sport or gym environment, but rather made use of locations, such as gyms, to distribute their products. The growing role of these dealers has also been noted in previous research on the Dutch PIED market (de Hon & van Kleij, 2005; Snippe et al., 2005; Paoli & Donati, 2014).

All of the other characteristics uncovered in this research likewise refer back to the market culture of PIEDs. The majority of PIED dealers were men; did not have a criminal record; were quite mature in age (on average 35 years); and were Belgian or Dutch (depending on the country in which the dealing took place). These attributes are somewhat logical considering most steroid users are male, specific knowledge is needed to participate in this market (e.g. different types, strengths and amounts) and the general lack of regulation surrounding PIEDs (on all fronts). However, the focus of this research was more so on AAS and drugs that often are taken in combination with these products. Therefore, it could be that if, for example, weight-loss drugs, which also fall under the PIED category, were more central to this work, more female suppliers would have been present in dealing networks. For future research it may be beneficial to take a more focused approach on female PIED users in order to obtain more insight into PIED dealing networks, in particular when it comes to PIEDs outside of AAS such as weight-loss drugs.

Second, the data indicated that a mixture of financial and non-financial interests drive PIED producers and dealers. The limited literature that exists on illicit PIED markets (e.g. Koert & van Kleij, 1998; Paoli & Donati, 2014) shows that profit is an important driver for PIED producers and dealers to engage in these illegal practices. However, the data and reviewed literature (e.g. De Boer et al., 1996; Gezondheidsraad, 2010) suggested that there are also many PIED suppliers who supply to friends and have little or no interest in making profit. Consider the case study of PIED dealing networks amongst bodybuilding subcultures in the Netherlands and Belgium. Here, PIED dealing networks appear structured and driven by their social and cultural embeddedness in the bodybuilding subculture. Specifically, these dealers were often 'over-socialized' into the structure and culture of bodybuilding, and followed the cultural scripts that came with their group affiliation and organization. These PIED dealers supplied to a niche market in which cultural knowledge is essential for entry. One of the most basic forms of knowledge to enter the illicit PIED market is 'ethnopharmaceutical knowledge' and knowledge of the wider bodybuilding subculture (Monaghan, 2001). Many of these dealers are aware of the know-how and the language of the bodybuilding environment, as they are personally engaged in this social activity. For these dealers, their 'bodybuilding capital' was a form of cultural capital, which enhanced their status within bodybuilding and could then be converted into economic capital.

The rationale for these 'socially oriented suppliers' to be active in these illegal activities, therefore, appeared to come from participating in certain subcultures rather than pursuing profitable economic opportunities. This is not to argue that financial aspects do not play a role, or that the supply of PIEDs is irrational, but that there are other motivating factors in determining the market behaviour of these types of dealers beyond that of pure utility maximization. While the findings presented here may not be extrapolated to explain the motivations behind other PIED dealing networks, they do provide another empirical case study of the proximate realities of illicit PIED markets on which local policy may be built. PIED markets amongst bodybuilding subcultures in Belgium and the Netherlands might be best described as an ordinary economy in which rational actors are in pursuit of profit; while at the same time many sellers and buyers are friends for whom non-commercial norms and altruistic values are central (see also Sandberg (2012a) on illicit cannabis markets).

10.2 The structure and organization of Belgian and Dutch PIED markets

The second aim of this research was to explore the structure and organization of illicit PIED markets and the networks that allow these markets to function. The goal was to examine the social, economic and cultural factors that influence the structure and organization of illicit PIED markets. I also sought to explore the contours of the Belgian and Dutch PIED market, and attempted to unravel the

complex relationship between the two countries. In other words: how do PIED markets form and develop within and between Belgium and the Netherlands, and even beyond?

First, the findings suggested that the PIED markets in the Netherlands and Belgium has evolved over time: what began as the non-medical use of legitimate medicines has turned into a market in which most steroids are produced illegally and often sold online or bought through a personal contact. An important difference is that in the Netherlands more domestic underground production is reported to be taking place than in Belgium. Two factors specifically may contribute to the higher prevalence of UGLs in the Netherlands. First of all, there is a lack of regulation surrounding the importation of raw materials of AAS (and in general of PIEDs) in the Netherlands. Second, the ease with which steroids can be ordered to the Netherlands, combined with the relative simplicity of converting these cheap precursor chemicals into potent and profitable AAS, makes the Netherlands an interesting production site for PIED dealers to settle in. Nevertheless, while domestic production plays a minor role in Belgium, the Internet is rapidly becoming the main tool for PIED purchases and sales. Due to the more repressive policies in Belgium, Belgian users seemed to have less accessibility to personal contacts, and instead resorted to other sources such as the Internet, or obtained their PIEDs through contacts in the Netherlands. The products bought over the Internet predominately consist of (Dutch) underground brands, and to a lesser extent exist of legitimate medicines. Nevertheless, while Belgian users may be making more use of the Internet, Dutch dealers seem to have adapted this tool to distribute their products, in particular to Belgium and other European countries.

Indeed, the growing use of the Internet makes it easier for all kinds of dealers to enter the market. Subsequently, the rise of the Internet in both countries has important implications on the cultural embeddedness of dealers. For instance, individuals may supply PIEDs through the Internet without the need to retain the levels of cultural embeddedness highlighted in this dissertation. Consequently, as I have discussed in this work, this advancement in technology, combined with law enforcement initiatives, in particular in Belgium, are restructuring the market for PIEDs and diminishing the role played by socially oriented dealers. Nevertheless, due to the ease by which PIEDs can be produced and sold in the Netherlands, socially oriented dealers do not appear to be fleeing from the market. In addition, these dealers themselves appear to be making use of the technological advancement that is the Internet. Therefore, while it may be said that market oriented dealers are capitalizing on the Internet as a means through which they may supply PIEDs, socially oriented dealers in the Netherlands are not withdrawing from the market but rather are adapting to its evolution. However, one important difference with Belgium is their use of supply reduction measures. As I have indicated, this has not necessarily led to a rise in market oriented dealers, but has contributed to the withdrawal of socially

oriented dealers who are unwilling to take the risks of participation. Therefore, as I have tried to convey through the model presented in chapter six, a variety of mechanisms, including technology and law enforcement, impact the structure of PIED markets.

Second, the criminal justice cases illustrated that the Belgian and Dutch PIED markets are highly intertwined. In the majority of the cases, a Belgian dealer obtained products from a Dutch contact before distributing them in Belgium. Nonetheless, while the Netherlands was often mentioned as a source country for Belgium, in several cases Belgian and Dutch dealers worked together in supplying PIEDs to the Belgian and Dutch markets. Still, in many cases there was also no connection between the two countries, but instead the PIEDs in their final form or raw materials of AAS were imported from other foreign ULGs and/or pharmaceutical sources (e.g. foreign pharmacy). Indeed, there are increasing reports that legitimate pharmaceutical companies are taking advantage of the fact that they are licensed to produce medicine and are manufacturing illegal medicines in order to increase the companies' revenue (Interpol, 2014).

Third, the Dutch and Belgian PIED markets may be best described as decentralized and comprised largely of informal or loosely structured networks. Most PIED dealers in Belgium and the Netherlands did not act as part of organizations, but as individuals relying on the networks available to them, which were frequently a product of their social and cultural bonds (e.g. sport connection). However, an important difference between Belgium and the Netherlands is that PIED dealing networks in the Netherlands seemed to be more stable than in Belgium. The reason for this stability may be that there are few incentives for Dutch dealers to leave the market (e.g. low priority amongst law enforcement, limited violence). In addition, while market oriented dealers - suppliers for whom securing profits is paramount – seemed to be on the rise in the last few years (de Hon & van Kleij, 2005), these dealers who are ingrained in the socio-cultural environment of users (the socially oriented dealers) still have a dominant position in the Dutch market (e.g. easy access to users, high trust), making it more difficult for other, 'newer' dealers to compete. Conversely, an important reason behind the lack of stability in Belgium is that market oriented dealers appear to have a growing presence in the Belgian PIED market; while more socially oriented dealers seem to be retreating. These socially oriented dealers may be withdrawing from the market as they are increasingly being targeted and sanctioned both by the world of sport and by law enforcement (Fincoeur et al., 2014).

Finally, the data indicated that the structure and formation of illicit PIED markets are shaped by a variety of factors including the types of PIEDs dealt within them, the characteristics of the users served by them, the social structures which sustain them, the cultural and economic context in which the markets exist, and economic and market forces (e.g. technical innovations, law

enforcement practises, drug policies) (see also Potter, 2009; Sandberg, 2012a on other drug markets). Most importantly, the findings presented here suggests that a separation needs to be made between different types of partial markets (e.g. bodybuilding, cycling), as the selling of PIEDs to end consumers takes place in markets whose characteristics are often different. In certain illicit PIED markets, social and cultural factors may be of greater importance (e.g. within bodybuilding subcultures), while others may be more driven by economic forces (e.g. online markets). The existence of such divisions in the retail market for PIEDs has important implications for the policing of illicit PIED markets and public health domains, as both types of measures rely on identifying and targeting drug using populations. Nevertheless, there is no standard organisational format for an illicit drug distribution network; rather, each network adapts the unique exigencies of its local market (Martin, 2010). Understanding the dynamic relationship between PIED users, their environment, and market operations is important when exploring policy options, as it enables and provides clearer understanding of the impacts of policy choices (e.g. law enforcement, education and/or treatment).

10.3 The harms of the illicit PIED market and its regulation

The third and final question of this research was to examine the harms caused by the production and distribution of PIEDs, and the effects of anti-doping regulations and national policies on these particular markets. Drug policies (and technological innovations) play an important role in shaping drug dealing networks (May & Hough, 2004): while Belgium adopts a prohibitionist stance against PIEDs, the Netherlands advances a more pragmatic approach in which more attention is given to health care and prevention than law enforcement. The third research question, therefore, considered: how do the Belgian and Dutch PIED control systems influence the characteristics and structures of the PIED market?

First, due to the limited priority of PIED production and distribution in the Netherlands a large underground culture has developed, stimulated by the Internet, in which individuals and groups manufacture and distribute their own AAS. In contrast, the stricter regulations in Belgium appears to have facilitated the replacement of socially oriented dealers by more overtly criminal types (market oriented dealers) and stimulated a rise in the online trade of PIEDs. Therefore, while the increased law enforcement in Belgium has raised the stakes for PIED dealers to participate in this illicit market, thereby largely cutting out socially oriented dealers, the under-regulation in the Netherlands has opened a platform for all types of dealers to become active in this illicit trade. Both models seem to provoke the criminal market by attracting more dangerous individuals and groups. Looking at the history of other illicit drug markets (o.a. see Downes, 1988; Decorte, 2007, 2010; Chatwin, 2011), this could potentially evolve into a

hardening of the PIED market (e.g. increase in systemic violence), resulting in less control over the quality of PIEDs, and may ultimately increase risks for users. Therefore, I suggest that the regulation and law enforcement practices, or lack thereof, surrounding PIEDs in both countries has contributed to more harms and exacerbated existing ones.

A particular worry related to the UGLs in the Netherlands (and in other countries) is that the quality of illicit market products is in general quite poor (de Hon & van Kleij, 2005; Graham et al., 2009; Llewellyn, 2012, June 29). The data presented in this research indicated that in only 16% of the PIEDs analysed did the content of the products match the label; often the product was under-dosed and in some cases it was over-dosed or replaced for another active substance all together. It is important to raise awareness regarding the potential health consequences of adulterated PIED usage, and to implement harm reduction strategies, such as testing services, in order to promote and protect the health of users (Kimergård & McVeigh, 2014). In addition, unlicensed and counterfeit PIEDs are easily accessible through the Internet. Aside from the risk of buying poor quality PIEDs, one of the main issues with buying/selling PIEDs on the Internet is that users run additional risks following the advice given on these platforms (e.g. recommendation of large doses) (Wassink et al., 2010). However, these AAS-selling websites in the Netherlands are becoming increasingly sophisticated with review systems, ratings, return policies, etc., and seem to deliver relatively 'good' quality PIEDs. The websites have built up a solid reputation due to delivering their products and providing positive results. Therefore, it may be questioned if closing down these websites is the best approach, as it could give rise to new websites of which users are unsure of their reliability.

Secondly, PIED-related initiatives tend to focus on prevention (the Netherlands and Belgium) and deterring use with drug tests and monetary sanctions or suspensions (only Belgium). The main target group of preventive work (and doping controls) are male AAS users who regularly train at the gym. However, this persistent bias towards male AAS users in a fitness context results in the disregard of other non-athletic using groups (e.g. police officers, students) and the use of different types of PIEDs (e.g. stimulants) (e.g. see Detmar et al., 2005; Christiansen, 2011; Thualagant, 2012). Furthermore, the doping controls in Belgium do not seem to deter people from using PIEDs. Many Belgian bodybuilders have simply chosen to compete in the Netherlands or other countries where no controls are being conducted. This displacement of drug users to less repressive countries or less policed neighbourhoods is not unique to the PIED market, and has also been established in other drug markets (o.a. see Wood et al., 2004; Kerr et al., 2005; Costa, 2008). Other possible unintended outcomes of the testing regime are that users will simply join another gym or start to train in their basements, stop training altogether, try more experimental drugs that cannot be detected by tests, and/or use dangerous masking agents to

avoid positives. Therefore, the current Belgian approach may lead to more adverse health effects rather than preventing them. In addition, while some harm reduction programmes concerned with PIED use operate in the Netherlands, these services tend to focus on potential and former users and leave ongoing users uncared for. Without health care services, dangerous practices may arise, such as sharing injection equipment, leading to risks of HIV or hepatitis virus infection (Chandler & McVeigh, 2013).

10.4 Lessons to be learned from the Dutch and Belgian situation

The goal of this next section is to provide some recommendations for policy makers, anti-doping officials and state authorities in their efforts to develop coherent and impactful policies for illicit PIEDs. The purpose is not to judge the Netherlands or Belgium, but to see what they themselves and other countries can learn about potential policy options and outcomes by drawing on the Belgian and Dutch experience. Indeed, the recreational use of PIEDs across the globe has increased within the last decade as well as their (online) availability. This new phenomenon presents major challenges to governments, local authorities, healthcare services and the criminal justice system.

First of all, the data suggests that public health risks have actually increased under both models in a variety of ways. Most importantly, Belgium and the Netherlands have largely reduced the supply of pharmaceutically regulated products and, instead, have created a market for unregulated manufactured PIEDs that are either domestically produced or imported. This has also reduced the likelihood that PIED users are able to obtain medical supervision, leading to a potential increase in health hazards (see also Kayser & Broers, 2013). Despite the different strategies adopted in both countries the use of PIEDs has become more widespread and there is a growing illicit market for the production and distribution of PIEDs. Although it may be that the restrictions on the import of raw materials and the higher controls at the border prevent the growth of UGLs in Belgium, evidence suggests that the growth of UGLs in the Netherlands is not simply a consequence of their lack of policy.

Instead it appears to be an increasing problem in many countries with both repressive and non-repressive policies alike (e.g. see Llewellyn, 2014, April 14; Paoli & Donati, 2014; Goldsworthy & McGillivray, 2015, May 20). Even in Belgium the domestic production of AAS is slowly rising. In both Belgium and the Netherlands, and other countries, there is a significant demand for PIEDs, which is likely to grow in the upcoming years (e.g. see Sagoe et al., 2014a, 2015b). As long as there is a demand, there will be people willing to supply these substances, regardless of their legal status or the penalties attached to such activities. Therefore, as opposed to solely putting restrictions (e.g. the import of raw materials) or pressure (e.g. law enforcement) on the illegal production of AAS and other PIEDs, other alternative or supplementary options such as a

medically supervised system (e.g. Burge, 1994; Kayser & Broers, 2013) or testing services (e.g. Hope et al., 2013) should be considered. In this way the illegal production of PIEDs is more easily confined (e.g., more difficult to import raw materials) while at the same time the health of users is taken into consideration (e.g., prevents users from consuming poor quality PIEDs).

Belgium and the Netherlands have an opportunity to learn from one another. While Belgium should seek to invest in research and health care services, the Netherlands should aim to coordinate their task forces more efficiently. In the Netherlands there is no specific task force, such as the Hormonencel in Belgium, which is assigned to regulate this market, and ultimately no one is taking responsibility for the problem. This lack of priority has resulted in a low recording of this type of crime, which, consequently, leads to having little political interest in doing anything about the current situation. Conversely, in Belgium the Hormonencel is a well-oiled machine that keeps track of all violations in relation to PIEDs and other hormones. Nonetheless, in Belgium it is predominately PIED users and small-scale dealers, as opposed to large-scale dealers and producers, who end up being the target of such investigations. The arrest of these retail dealers is unlikely to have any long-term effect on the market. However, as most upper-level producers and dealers reside in the Netherlands, Belgian officials may be right to suggest that better international cooperation is needed to target large-scale production networks. Nevertheless, the problem in Belgium lies predominately in the fact that there is little research in this area and there are no services available for (potential) users to obtain information on PIEDs or to seek medical supervision. In fact, the combination of a repressive approach with an absence of harm reduction services increases the risks to users (e.g. the use of experimental PIEDs, the lack of medical guidance, and the absence of oversight on the quality PIEDs) while inviting more market oriented dealers to partake in this illicit market.

The Netherlands is being increasingly pressured, both domestically and internationally, to adopt tougher measures towards the possession, production and distribution of PIEDs. But is zero tolerance and criminalization really the best way to protect public health and decrease the supply of PIEDs? History would suggest that the answer to both questions is a resounding no (e.g. see Decorte, 2007, 2010). Not only are criminal justice measures expensive (Moore, 2013, October 2), evidence from the 'war on drugs' suggests that this approach reduces neither consumption nor supply and has a limited effect on the protection of public health (Costa, 2008). In addition, increased law enforcement could potentially become a self-fulfilling prophecy as it incentivises more criminal actors to enter the market: which implies more violence and relations with other criminal activities, and possibly attracting (more) organized crime (o.a. see Dorn & South, 1990; May & Hough, 2001; Caulkins & MacCoun, 2003; Decorte, 2010). We can, therefore, speculate that if the Netherlands becomes 'tough on PIEDs' the domestic production of PIEDs in Belgium is likely to

increase, and/or that the production and distribution in the Netherlands will simply relocate to a country with a more lax regulation. Indeed, unintended negative consequences such as this are likely to increase if a zero-tolerance approach towards PIEDs and doping is to continue. Similar developments in other illicit drug market are already evident from such an approach, such as less control over the quality of PIEDs (see also Ritsch & Mußhoff, 2000; Graham et al., 2009), less access to medical services (see also Kayser & Broers, 2013), and the attraction of more dangerous criminal groups (see also de Hon & van Kleij, 2005; Paoli & Donati, 2014).

Second, in general there is a lack of research, preventive work and information campaigns in both Belgium and the Netherlands. Where there are such initiatives, they tend to focus on male fitness trainers and/or athletes. PIEDs are rarely surveyed or assessed for use, so statistical evidence of misuse is very limited in both countries. Subsequently, there is little concrete evidence of the nature and scope of the Belgian and Dutch PIED market (e.g. how many people are using?) and the adverse effects and risks of its use (e.g. how many people suffer from problems due to their use?). To adjust PIED policy accordingly, there is a necessity for reasoned evidence gathered about health harms and PIED-related risks in both Belgium and the Netherlands. In addition, educational campaigns, treatment options and other measures need to be in place in Belgium and the Netherlands to cope with the potentially diverse population of PIED users, which appears to be growing. This may be advantageous as such endeavours support and encourage healthy behaviour and seek to prevent potential problems, while granting an opportunity to scientifically explore the (long-term) effects of PIEDs. However, as long as national efforts to curb PIED use remain interwoven with sport policy, initiatives are inclined to hinder the exploration of alternative approaches in the name of zero-tolerance. In order to educate recreational PIED users we need to consider harm reduction policies in contrast to the often applied zero tolerance approach implemented in elite sport (Christiansen & Bojsen-Møller, 2012). As such, it is necessary that anti-doping campaigns and their control in elite sport be separated from public health policies directed at recreational PIED users.

Third, considering that the market for PIEDs in the Netherlands and Belgium is relatively small (see chapter 2), I suggest that harm reduction initiatives include the broader spectrum for human enhancement drugs (HEDs) including muscle drugs, weight-loss drugs, image enhancing drugs, sexual enhancers and mood and behaviour enhancers (Evans-Brown et al., 2012). As McVeigh et al. (2012: x) have noted the widespread availability of drugs with the potential to improve human attributes, appearance and abilities has generated a new and growing audience of users. Indeed, in Belgium and the Netherlands there is growing evidence that different types of HEDs are increasingly being used by the general population such as weight-loss drugs (e.g. DNP) (e.g. Venhuis et al., 2009), sexual enhancers (e.g. Viagra) (Hormonencel, 2010; Koenraadt,

2013; Venhuis et al., 2014) and cognitive enhancers (e.g. Ritalin) (e.g. van Dalen, 2011, September 14; Escher, 2015, April 9). All of these different types of HEDs have been linked to various health problems (Evans-Brown et al., 2012). The ease with which HEDs can be produced and manufactured along with the growing demand and potential profits that can be made, has resulted in a growing challenge for policy makers and health care systems in various countries (McVeigh et al., 2012). There is a need to raise awareness of the emerging HED situation, to conduct research in this area, and to assess the harms of these substances.

Nonetheless, having said all this, one may wonder if any of these drug policy recommendations are necessary as PIEDs compared to other drug markets seem to generate relatively low harms in Belgium and the Netherlands: e.g., few acute and chronic adverse health effects, low prevalence of use, and little to no violence or other forms of PIED-related criminality. Indeed, not all harms discussed here are necessarily confirmed in this research with 'hard' data. It is, therefore, important to look at existing literature on PIED and other drug markets, and to learn from what previous research and experiences may tell us about the PIED market. For example, there are increasing reports on an international level that the PIED market is becoming a public health concern such as the risk of HIV or hepatitis virus infection or the use of experimental PIEDs in sports (e.g., Dawson, 2001; McVeigh et al., 2003; Iversen et al., 2012; Kimergård, 2014b). Moreover, when looking at the general drug literature, the emergence of all these 'new' drug markets in novel psychoactive substances (NPSs) has posed significant challenges for those formulating drug policy and related public health responses (Sumnall et al., 2011). Therefore, while currently few PIED-related harms are established in Belgium and the Netherlands, based on previous studies I suggest that better regulation is needed to prevent (potential) harms to the individual and/or society. We need to take action to minimise future risks and to learn from the best practices in the control of other illegal and semi-illegal markets (Paoli, 2012).

Considering that many states (e.g., Colorado and Washington) and countries (e.g., Uruguay and Portugal) are re-forming zero-tolerance drug policies in favor of health based models (e.g., see Hughes & Stevens, 2007; Caulkins at al., 2014), it is important to rethink the way in which we currently attempt to regulate this problem. Indeed, a fundamental rethinking of the contents of the 'drug policy toolbox' (Seddon, 2014) is needed if we want to change the way we are currently regulating illicit drug markets and the harms that come with them. Clearly, the absence of success in reducing the supply of drugs and the increasing harms that go with it (e.g., the stigmatization of users, a large criminal market, high levels of incarceration) (Costa, 2008), calls for the need of alternative approaches to deal with this issue. This does not necessarily mean that this 'new', 'adjusted' or 'alternative method' will come about without any problems or that the entire system will be changed 'overnight', but it does

mean that we can design a new approach that is based on the current evidence on what works or what does not. Indeed, an alternative policy-making framework can be developed in relation to the illicit PIED market by learning from 'the war on drugs' and by examining examples drawn from other areas of social policy (e.g., alcohol and tobacco regulation) (Seddon, 2014). Specifically, we need to open up alternatives to supply-oriented drug policies (Hughes & Winstock, 2011), including approaches based on the principles of harm reduction (Greenfield & Paoli, 2012). For example, a more pragmatic approach aimed at controlled use and harm reduction may be a viable alternative to cope with PIEDs (a.o., Burge, 1994; Savulescu et al., 2004; Kayser et al., 2007; Kayser & Smith, 2008; Christiansen & Bojsen-Møller, 2012). Therefore, drug policies should aim to adapt and evolve in response to emerging trends and evidence in order to reduce (potential) harms.

10.5 Challenges for future research agendas

The aim of the following section is to highlight some limitations of this research, and to stimulate debate and guide future research agendas. First of all, it is difficult to establish the causality of the different trends and patterns that I have observed in Belgium and the Netherlands. For example, while the link between illicit PIED supply and law enforcement is convincing at first glance, it is impossible to make a statement regarding a definite cause-and-effect link between the two phenomena. The suggestion, for example, that increased law enforcement in Belgium leads to a growth in market-oriented dealers may be underestimating the impact the Internet may is having on this illicit market and, therefore, does not take the role of technical innovations fully into account (e.g. see May & Hough, 2001; Curtis & Wendel, 2007). Further, as the data illustrated, there is a need to recognize the cultural embeddedness of PIED dealing practices, and how this influences the behavior of dealers and the structure of PIED dealing networks. It would be inappropriate to ignore the fact that national cultures may have independent (from regulatory practices) and contingent (with regulatory practices) effects on behaviors in illicit PIED markets. Therefore, future studies on these PIED markets should consider the so-called "deep structures" (Dahrendorf, 1997) of the Netherlands and Belgium and how they may influence the development, formation and sustainment of illicit PIED markets. In addition, it may be that the findings purely reflect the Belgian and Dutch situation and therefore have limited 'transferability' (Yin, 2003) to other countries. Nonetheless, by reviewing and comparing the extant literature on illicit drug markets (e.g. cannabis, cocaine) throughout this dissertation, I was able to draw on some general conclusions regarding the illicit market for PIEDs (e.g. the displacement of dealers or users).

Second, considering the complexity of the illicit PIED market, and drug markets in general, it is impossible for research endeavours to explore every

level (e.g. production, retail, whole-sale) of this illicit trade in full detail. In this thesis the focus was mainly on individuals or groups who illegally produce steroids domestically and/or distribute PIEDs on a small or large scale. To a lesser extent attention was given to the role of legal pharmaceutical companies or other medical sources in the production and distribution of AAS and other PIEDs. For future research it is imperative to examine more fully the role of legal (pharmaceutical) companies in this illicit market. For instance, as Babor et al (2010: 81) mention the channelling of pharmaceuticals from legal sources to the illicit drug market has become a major source of supply for street drug users in some countries (e.g. through theft, unauthorized sales, prescription fraud) (see also Fischer & Rehm, 2007). As such, it is essential to look at how the medical system, prescribers and dispensers make prescription drugs, including PIEDs, available for illicit use. The separation between the legal and illegal market for PIEDs is unclear and, therefore, more knowledge is needed in this area.

Finally, more ethnographic research will provide valuable new knowledge that will advance the field of PIED research. The strength of this approach is that it provides a detailed analysis of local PIED markets and the behaviours of the various individuals involved within this illicit market. However, as Ritter (2006: 455) remarks, the specificity of ethnography is both a major strength and major limitation of this type of methodology. The fact that each illicit drug market is unique makes it difficult to generalize findings to other drug markets. By adopting bodybuilding as a case study, for example, it is difficult to generalize these findings to larger social forces or trends. Nevertheless, as Garland (2001: VII) states, "[s]weeping accounts of the big picture can be adjusted and revised by more focused case studies that add empirical specificity and local detail". In order to obtain the optimal vantage point we must go back and forth between the big picture, the general PIED market, and the local detail, in this case bodybuilding subcultures. Therefore, by triangulating data (e.g. analysis of criminal justice cases and AAS-selling websites), I was able to arrive at a more nuanced picture of the illicit PIED market, with important policy implications. Nonetheless, future research should take this limitation into consideration and attempt to target other segments of the PIED market (e.g. different dealing groups (e.g. Internet dealers) or distribution levels (e.g. production of steroids) in an effort to obtain a larger and clearer picture of this illicit trade.

10.6 Final Remarks

Little empirical research exists on the production, supply and even use of PIEDs (Paoli, 2012), and the broader spectrum of HEDs (Evans-Brown et al., 2012), resulting in poor (scientific) knowledge of this illicit market. Consequently, decisions and implementations regarding PIED-related policies, programs, and strategies in Belgium and the Netherlands are often made without having proper knowledge or expertise of their impact on the illicit PIED market. These actions

may result in more economic, social and individual harms rather than less (e.g. no access to medical services, growing underground production). The goal of this dissertation was to fill this knowledge gap by providing insights into the illicit production and distribution of PIEDs in Belgium and the Netherlands. As this dissertation has illustrated, it is important to recognize the cultural embeddedness of PIED dealing practices as opposed to purely relating this criminal behavior to economic and/or social attributes. In order to fully understand the mechanisms of the illicit market for PIEDs, it is necessary to describe, conceptualize and discuss the different cultures in which the PIED economy is embedded. PIED markets can vary drastically depending on the sort of substances used, the reasons for using, ways of using, the type of user, context in which they are used, etc.; in short the market culture. All of these factors may influence the structure and organization of illicit PIED markets, and, subsequently, impact the way in which these substances are produced and distributed. Therefore, we need to examine the production, distribution and use of PIEDs, as embedded within a diverse combination of social, economic and cultural processes, in which none is simply reducible to the other. Policy makers, health care professionals and other relevant parties should consider these different factors (social, economic and cultural) when designing and evaluating PIED-related interventions, law enforcement efforts, harm reduction initiatives and treatment.

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Appendix I: Overview of Informants

Table 1, 2 and 3 summarise an outline of formal interviews conducted during this research, while table 4 and 5 provide an overview of all the participants I have spoken to during my fieldwork. Although the scale of interaction and information gathered varies per person, these individuals are all considered important contacts who assisted me by providing information, as well as by bringing me into contact with other informants. All names of the informants have been kept confidential through the use of pseudonyms. In this research, concealing the identities of participants was crucial due to the illegal nature of PIED dealing, the involvement of different parties (authorities and dealers) and because the group of experts within this field is quite small. For example, I decided not to reveal the specific function of involved authorities (e.g., Health inspector of IGZ), but kept this rather broad ("Dutch or Belgian official"), as others within this field could easily take an educated guess about the identity of my study participants.

Table 1.
An overview of all interviewed Dutch officials

Dutch authorities and other participants		
Pseudonym	**Type**	**Date of Interview**
1. Sean	Dutch official	22 April 2013
2. Mia	Dutch official	22 April 2013
3. Taco	Dutch official	22 April 2013
4. Mark	Dutch official	19 Augustus 2013
5. Harry	Dutch official	19 Augustus 2013
6. Melissa	Dutch official	1 Augustus 2013
7. Thomas	Dutch official	19 Augustus 2013
8. Willeke	Dutch official	20 Augustus 2013
9. Thijs	Dutch official	20 Augustus 2013
10. Wouter	Dutch official	26 April 2013
11. Tijn	Lawyer	17 October 2013
12. Ryan	Physician	27 January 2014
13. Parker	Dutch official	31 Augustus 2013
14. Dave	Physician	30 May 2011
15. Walter	Dutch official	8 May 2011
16. Kees	Dutch official	8 May 2011
17. John	PIED expert	8 May 2011
18. Stacey	Dutch official	24 May 2011
19. Matt	Physician	13 May 2011

Table 2.
An overview of all interviewed Belgian officials

Belgian authorities and other participants		
Pseudonym	**Type**	**Date of Interview**
1. Vera	Belgian official	7 May 2013
2. Joop	Belgian official	7 May 2013

3. Patrick	Belgian official	14 May 2013
4. Anne	Belgian official	14 May 2013
5. Karin	Belgian official	17 May 2013
6. Freek	Belgian official	17 May 2013
7. Harold	Belgian official	15 May 2013
8. Gerald	Belgian official	16 May 2013
9. Willem	Belgian official	16 May 2013
10. Irene	Belgian official	16 May 2013
11. Rob	Belgian official	16 May 2013
12. Pim	Belgian official	23 May 2013
13. Stephan	Belgian official	24 May 2013

Table 3.
An overview of all interviewed Dutch and Belgian dealers

Belgian and Dutch Dealers			
Pseudonym	**Country**	**Type of dealer**	**Date of Interview**
1. Chris	BE	Former large-scale distributor	22 May 2013
2. Roy	NL	Producer and large-scale distributor	12 June 2011 14 June 2013
3. Guus	NL	Dealer and importer	16 October 2013
4. Jimmy	NL	Helper	19 January 2013
5. Sammy	NL	Internet dealer	18 January 2013
6. Sacha	BE	Helper	7 March 2014
7. Johnny	NL	Helper	14 December 2013
8. Roel	BE	Dealer	16 July 2014
9. Coen	NL	Helper and small-scale producer	10 January 2011
10. Alex	NL	Helper	9 February 2011
11. Pieter	BE	Helper	24 May 2011 2 April 2013
12. Eric	NL	Dealer	15 April 2011 16 January 2013
13. Stan	NL	Helper	17 May 2011
14. Jurgen	NL	Helper	5 February 2011
15. Nathan	NL	Producer and large-scale distributor	27 May 2011

Table 4.
An overview of all Dutch participants met during my fieldwork

Dutch bodybuilders and other participants		
Pseudonym	**Description**	**Fieldwork/Interview**
1. Alex	Bodybuilder (recreational but used to train on professional level), supplement seller, helper and former user.	Both

2. Coen	Bodybuilder (recreational)/power-lifter (used to train on professional level), user, 'helper' and small-scale producer, en personal coach/gym owner.	Both
3. Claudio	Bodybuilder (amateur), supplement seller and hairdresser.	Fieldwork
4. Rover	Bodybuilder (recreational), supplement seller, helper and personal coach.	Fieldwork
5. Mark	Bodybuilder (amateur), former supplement seller, works in security, user en student.	Fieldwork
6. Rens	Bus driver, user and (small-scale) dealer.	Fieldwork
7. Jeremy	Bodybuilder (professional), user, owner supplement shop, en helper.	Fieldwork
8. Floor	Bodybuilder (recreational) en manager supplement shop.	Fieldwork
9. Allan	Weight-trainer (former professional), user, small-scale producer and dealer.	Fieldwork
10. Gover	Bodybuilder (recreational) and user	Fieldwork
11. Lizanne	Bodybuilder (professional) and user	Fieldwork
12. Donald	Weight-trainer (recreational), user, and helper.	Fieldwork
13. Eric	Bodybuilder (amateur), user, small-scale dealer en supplement shop owner.	Both
14. Henry	Bodybuilder (recreational), user and helper.	Both
15. Stan	Bodybuilder (professional), user, helper and works in security.	Both
16. Jurgen	Bodybuilder (recreational), helper, user and manager gym.	Both
17. Flip	Bodybuilder, user, (small-scale) dealer, gym owner and coach.	Fieldwork
18. Roderick	Former strongest man trainer, now bodybuilder (recreational), user, personal coach and works in construction.	Both
19. Nathan	Former bodybuilder, producer, large-scale distributor and personal coach.	Both
20. Ray	Bodybuilder (professional), user, helper, personal coach and works in security.	Fieldwork
21. Jimmy	Bodybuilder (recreational), user, helper, business owner, coach and	Both

	former gym owner.	
22. Guus	Nutritionist, user, and small-scale dealer and importer.	Both
23. Roy	Bodybuilder (recreational), user, producer, large-scale distributor and works in pharmaceutical industry.	Interview
24. Kyle	Power-lifter (professional), former user, helper, coach and sells fitness equipment.	Both
25. Tim	Weight-lifter (professional), coach en gym owner.	Fieldwork
26. Johnny	Former bodybuilder (professional), user, helper, and personal coach.	Fieldwork
27. Maria	Bodybuilder (amateur) and user.	Fieldwork
28. Toine	Bodybuilder/fitness trainer, helper and user.	Fieldwork
29. Samuel	Bodybuilder (recreational), user and personal coach.	Fieldwork
30. Franky	Bodybuilder/weight-lifter (recreational) and manager	Fieldwork
31. Walter	Bodybuilder/fitness trainer (recreational), business owner (in recreational sport industry), user and helper.	Both
32. Sam	Bodybuilder (recreational), works in security, and user.	Fieldwork
33. Karel	Bodybuilder/fitness trainer (recreational) and Internet dealer.	Electronic contact
34. Leffe	Internet dealer	Electronic contact
35. Peter	Fitness trainer (recreational) and coach	Both
36. Dries	Fitness trainer (recreational) and owner gym.	Fieldwork
37. Rietje	Former bodybuilder (professional), helper en coach.	Fieldwork
38. Denzil	Bodybuilder (amateur), supplement seller, user and helper.	Fieldwork
39. Theodor	Bodybuilder and personal coach	Fieldwork
40. Lucas	Bodybuilder (recreational), user, helper, personal coach and works in administration.	Fieldwork
41. Kevin	Former bodybuilder (professional), helper, former user, personal coach and active in fitness sector.	Fieldwork
42. Flynn	Bodybuilder (amateur) and user.	Fieldwork

43. Onno	Bodybuilder (recreational), personal coach, works in clothing store, helper, and user.	Fieldwork
44. Maarten	Bodybuilder (recreational) and personal coach.	Fieldwork

Table 5.

An overview of all Belgian participants met during my fieldwork

Belgian bodybuilders and other participants		
Pseudonym	**Description**	**Fieldwork/Interview**
1. Chris	Former bodybuilder (professional), former user, former large-scale distributor, coach and gym owner.	Both
2. Lidia	Former bodybuilder (professional), former user, and personal/posing coach.	Fieldwork
3. Denver	Bodybuilder (amateur)	Fieldwork
4. Roel	Bodybuilder (amateur), user, (small-scale) dealer, and student.	Both
5. Diana	Bodybuilder/fitness trainer (amateur) and personal coach.	Fieldwork
6. Ronald	Bodybuilder (recreational), user, student, works in bar, and personal coach.	Fieldwork
7. Jan	Bodybuilder (naturel), student, works in security and personal coach.	Fieldwork
8. Lance	Former bodybuilder (professional), former user, helper, coach, en gym owner.	Fieldwork
9. Tony	Bodybuilder (recreational), helper, user and student.	Fieldwork
10. Pieter	Bodybuilder (recreational), user, helper, coach and supplement seller.	Both
11. Sacha	Former bodybuilder (professional), user, helper, coach en gym owner.	Both
12. Michiel	Weight-lifter (professional), business owner, and student.	Both
13. Goof	Bodybuilder (recreational), user, helper and works in security.	Fieldwork
14. Victor	Bodybuilder (recreational), user, helper en personal coach.	Fieldwork
15. Mariska	Fitness trainer and hairdresser.	Fieldwork
16. Joseph	Bodybuilder (amateur) and user.	Fieldwork
17. Dennis	Former bodybuilder (amateur), former user, small-scale dealer and supplement seller.	Fieldwork
18. Leroy	Former bodybuilder (professional), former user, helper and business	Fieldwork

	owner.	
19. Kenny	Bodybuilder (amateur), works in construction, and user.	Fieldwork
20. Dallas	Bodybuilder (amateur), senior, and former user.	Fieldwork
21. Ron	Former bodybuilder (professional), coach, former supplement seller, and former large-scale distributor.	Fieldwork
22. Bas	Gym owner, small-scale dealer and user.	Fieldwork
23. Loek	Bodybuilder/fitness trainer (recreational)	Fieldwork
24. Menno	Bodybuilder/fitness trainer (recreational)	Fieldwork
25. Lisa	Bodybuilder (amateur), user, works in bar and personal coach.	Fieldwork
26. Joel	Bodybuilder/fitness trainer (recreational) and user.	Fieldwork
27. Cam	Former bodybuilder (professional), gym owner, coach, large-scale distributor and user.	Fieldwork

Appendix II: Drug Testing and Analysis

Item	Product name (as mentioned on the label)	Manufacturing (mfg.) and expiry date	Amount identified
1	Genesis, Methadienone tablets 10 mg methadienone	Mfg. Date: Feb 2010 Expiry Date: Jan 2014	Methandienon: 5 mg/tablet
2	Genesis, Testosterone Enanthate Injection 10 ml testosterone enanthate (250mg/ml)	Mfg. Date: Mar 2010 Expiry Date: Feb 2014	Testosteron enanthaat: 91 mg/ml Testosteron proprionaat: 46 mg/ml
3	Extreme Powerl Labs, Methandrostenolone 10 mg methadienone	Mfg. Date: Unknown Expiry Date: Aug 2013	Methandienon: 9 mg/tablet
4	Extreme Power Labs, Stanozol 10 mg stanozolol	Mfg. Date: Unknown Expiry Date: May 2013	Stanozolol: 9 mg/tablet
5	Golden Gear Pharma, Nandrolone decanoate, 10 ml nandrolone decanoate (200mg/ml)	Mfg. Date: Unknown Expiry Date: Aug 2014	Testosteron enanthaat: 95 mg/ml
6	British Dragon Pharmaceuticals, Decabol 250 10 ml nandrolone decanoate (250 mg/ml)	Mfg. Date: Mar 2012 Expiry Date: Mar 2017	Trenbolon enanthaat [*] Trenbolon acetaat: 3 mg/ml Testosteron proprionaat: 24 mg/ml
7	Primobol 100 10 ml methenolone enanthate (100 mg/ml)	Mfg. Date: Mar 2012 Expiry Date: Mar 2017	Trenbolone acetate: 2 mg/ml Trenbolone enanthate: undetermined Testosterone proprionate: undetermined
8	Testabol Propionate 10 ml testosterone propionate (100 mg/ml)	Mfg. Date: Feb 2011 Expiry Date: Feb 2016	Trestosterone proprionate: 25 mg/ml
9	Boldabol 200 10 ml boldenone undecylenate (200 mg/ml)	Mfg. Date: Nov 2012 Expiry Date: Nov 2017	Trenbolone acetate: undetermined Trenbolone enanthate: 3 mg/ml Testosterone proprionate: 25 mg/ml Boldenone undecylenate: undetermined
10	Testabol Enanthate 10 ml testosterone enanthate (250 mg/ml)	Mfg. Date: Dec 2012 Expiry Date: Dec 2017	Trestosterone proprionate: 26 mg/ml
11	Trenabol Depot 100	Mfg. Date: Nov 2012	Trenbolone acetate: 30

	10 ml trenbolone hexahydrobenzylcarbonate (100 mg/ml)	Expiry Date: Nov 2017	mg/g Trenbolone enanthate: undetermined Tetosterone proprionate: undetermined
12	Androlic tablets 50 mg oxymetholone	Mfg. Date: Jan 2011 Expiry Date: Jan 2014	Oxymetholone: 15 mg/tablet
13	Methandienone tablets 10 mg methandienone	Mfg. Date: Dec 2012 Expiry Date: Nov 2016	Methandienone: 6 mg/tablet
14	Stanozolol tablets 10 mg stanozolol	Mfg. Date: Feb 2010 Expiry Date: Jan 2014	Stanozolol: 8 mg/tablet
15	Stanozolol 50 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Stanozolol: 5 mg/ml
16	Testosterone Enanthate 300 mg/ml	Mfg. Date: Unknown Expiry Date: Oct 2018	Testosterone Enanthate: 208 mg/ml
17	Methenolone Enanthate 100 mg/ml	Mfg. Date: Unknown Expiry Date: Jul 2016	Methenolone Enanthate: undetermined
18	Stanozolol 50 mg/ml	Mfg. Date: Unknown Expiry Date: Apr 2016	Stanozolol: 7 mg/ml
19	Winstrol-ject Stanozolol 50 mg/ml	Mfg. Date: Unknown Expiry Date: Nov 2017	Stanozolol: 6 mg/ml
20	Growfast, Testosteron enanthate 350 mg/ml	Mfg. Date: Unknown Expiry Date: May 2018	Testosteron enanthate: 115 mg/ml Testosteron-17-cypionaat: undetermined
21	Methenolone Enanthate 100 mg/ml	Mfg. Date: Unknown Expiry Date: Aug 2017	Methenolone Enanthate: undetermined
22	Growfast stanozolol 10 mg/tab	Mfg. Date: Unknown Expiry Date: Mar 2018	Stanozolol: 9mg/tablet
23	Anavar Generic supplements 10 mg/tab	Mfg. Date: Unknown Expiry Date: Unknown	Oxandrolon: 12 mg/tab
24	Anavar Euro Pharmaceuticals 10 mg/tab	Mfg. Date: Unknown Expiry Date: Unknown	Stanozolol: 9mg/tablet
25	Testosterone Enanthate API 1000 mg/gram	Mfg. Date: Unknown Expiry Date: Unknown	Testosterone Enanthate API: 969 mg/gram
26	Stanozolol micronized 1000 mg/gram	Mfg. Date: Unknown Expiry Date: Unknown	Stanozolol: 1025 mg/gram
27	Nandrobolin Nandrolon decanoaat 200 mg/2 ml	Mfg. Date: Unknown Expiry Date: Feb 2015	Nandrolon decanoaat: 267 mg/ml
28	Nandrolone decanoate Norma 100 mg/ml	Mfg. Date: Unknown Expiry Date: Oct 2000	Nandrolon decanoaat: 42 mg/ml
29	Clenbuterol	Mfg. Date: Unknown	Clenbuterol:

	0,02 mg/tablet	Expiry Date: Unknown	0,009 mg/tablet
30	Testosteron Enanthate Norma 250 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Testosteron Enanthate: 28 mg/ml
31	Winstrol Depot Stanozolol 50 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Stanozolol: 9 mg/ml
32	Stanozolol 10 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Stanozolol: 9 mg/ml
33	Oxymetholone 10 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Oxymetholone: undetermined
34	Methandienone 10 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Methandienone: 10 mg/ml
35	Methandienone D-bol 10 mg/tablet	Mfg. Date: Unknown Expiry Date: Aug 2013	Methandienone: 10 mg/tablet
36	Stanozolol 10 mg/tablet	Mfg. Date: Unknown Expiry Date: Aug 2013	Stanozolol: 12 mg/ml
37	Proviron Mesterolone 25 mg/tablet	Mfg. Date: Unknown Expiry Date: Aug 2013	Mesterolone: undetermined
38	Anadrol Oxymetholone 25 mg/tablet	Mfg. Date: Unknown Expiry Date: Aug 2013	Oxymetholone: undetermined
39	Turinabol 10 mg/tablet	Mfg. Date: Unknown Expiry Date: Aug 2013	Turinabol: undetermined
40	Anavar Oxandrolone 10 mg/tablet	Mfg. Date: Unknown Expiry Date: Aug 2013	Oxandrolone: 13 mg/ml
41	Long Yi Yao Testosterone enanthate 250 mg/ml	Mfg. Date: Unknown Expiry Date: Apr 2018	Testosterone enanthate: 124 mg/ml
42	Primobolan 100 mg/ml	Mfg. Date: Unknown Expiry Date: Apr 2015	Methenolon enanthate: undetermined
43	Testosterone Enanthate Norma 250 mg/ml	Mfg. Date: Unknown Expiry Date: Unknown	Testosterone Enanthate: 27 mg/ml

* Strong indications for its presence

Appendix III: Overview of Conference Presentations and Publications

Publications:

Van de Ven, K., (forthcoming) 'Blurred lines': anti-doping, national policies, and the performance and image enhancing drug market in Belgium and the Netherlands. *Performance Enhancement & Health.*

Van de Ven, K. (forthcoming). Markten, cultuur en prestatie- en uiterlijkbevorderende middelen (PUBM): de eigenschappen van dealers die opereren in België en Nederland. *Tijdschrift voor Cultuur en Criminaliteit*.

Van de Ven, K., & Mulrooney, K.J.D. Social Suppliers: Exploring the cultural contours of the performance and image enhancing drug (PIED) market amongst bodybuilders in the Netherlands and Belgium. *International Journal of Drug Policy,* submitted.

Mulrooney, K.J.D., & van de Ven, K. (2015, August 10). *Why organised crime should not be used to shape anti-doping policy* [Online Publication]. UK: The Conversation.

Van de Ven, K., & Mulrooney K.J.D. (2014, December 1). *Anti-Doping "on Steroids": Bigger, stronger and faster* [commentary]. Aarhus: International Network of Humanistic Doping Research (INHDR).

Fincoeur, B., van de Ven, K., & Mulrooney, K.J.D. (2014). The Symbiotic Evolution of Anti-Doping and Supply Chains of Doping Substances: How criminal networks may benefit from anti-doping policy*. Trends in Organized Crime*. DOI: 10.1007/s12117-014-9235-7.

Invited Presentations:

Van de Ven, K. (2015, April 1). *The illicit PIED market: the 'muscle mafia' and socio-cultural suppliers.* Centre for Public Health PHD Symposium, Liverpool John Moores University, United Kingdom.

Van de Ven, K. (2014, October 17). *The formation and development of PIED dealing networks in the Netherlands and Belgium: a typology of dealers and the implications of PIED policies*. The University of West Virginia, Department of Sociology and Anthropology, Morgantown, West Virginia.

Van de Ven, K. (2014, June 25). *A critical analysis of the diverging anti-doping policies of Belgium and the Netherlands, and their effect on performance and image enhancing drug (PIED) markets*. National Deviance Conference, Teesside Centre for Realist Criminology, United Kingdom.

Van de Ven, K. (2014, April 14). Typologies of doping dealers and the importance of culture in performance and image enhancing drug (PIED) markets. The Common Study Program in Critical Criminology, Middlesex University, United Kingdom.

Mulrooney, K.J.D., & van de Ven, K. (2013, September 4). “The war on doping”: a critical analysis of the criminalization of performance and image enhancing drugs. European Society of Criminology Conference, Eötvös Loránd University, Budapest, Hungary.

Mulrooney, K.J.D., & van de Ven, K. (2013, August 15). WADA’s Framing of the Doping Threat: Widening the nets beyond the athlete. INHDR conference, Aarhus University, Aarhus, Denmark.