The possibility of integrating 'science-based' risk factors into current legal gun policy in the Netherlands

A study to the current state of legal gun-ownership in Dutch police regions, science-based risk factors that are related to or might cause criminal behavior, and the possibility of integrating risk factors in current legal gun policy.

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Master Thesis

UNIVERSITY OF TWENTE.

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"Risk comes from not knowing what you're doing"

- Warren Buffett -

I.   Prologue

Martin Bryant was twenty-eight years old when he committed the Porth Arthur Massacre, a black day in the history of Australia. Martin lived with his father on a peaceful farm in Tasmania. He was schizophrenic, and he was fund of guns (not an ideal combination if you read it like this). Until 1995, buying a gun in Australia was like buying candy. Martin was in possession of three semi-automatic machine guns. His lifestyle was odd, he slept in the daytime and wandered around the yard at night, shooting bullets, to the stars, as he explained every next day to his dad who complained about the noise he heard. Martin had an aggressive personality. One day, two neighbors wanted to buy some strawberries at the yard of Martin's dad, like they always did, but this time without success. Martin threatened them with the words: "Come back again, and I will definitely shoot you down…". Things became worse after this incident. Martin's father died a couple weeks later under suspicious circumstances. After his father's dead, Martin sold the whole place and went traveling around the world, maybe to avoid his loneliness. This however, did not satisfy Martin, so he returned to the island of Tasmania. He lived an unnoted life, until April twenty-eight in 1996. He decided to go to Porth Arthur, a famous place for many tourists. He headed down to a café, full of unsuspecting tourists. Martin opened his sport bag and after fifteen seconds twelve people were dying on the ground. Martin laughed and continued his massacre. His next targets were some tourists in front of a museum. First, he fired without thinking, and then he aimed to make sure he would not miss his targets. He just walked along. Through a small window of a restaurant he spotted a child, he aimed and fired. A little later, another two children were shot dead. This was not the end of his actions at all. After leaving the place by car, he stopped at a small house and killed a mother with two daughters, without any mercy. He drove further, stopped at a gas station and killed one woman, drove, and killed two tourists. Then he finally met some police officers who tried to stop him, something that was far from easy. Martin kept three hostages in a random house, which he eventually set on fire. After almost setting himself in flames, Martin ran into the arms of the police. He was sentenced to thirty five times life imprisonment; equal to the amount of victims he caused (Vermassen, 2004, pp. 236-239).

This is one of the many stories written by Jef Vermassen and published in his book "Moordenaars en hun Motieven", a book about the motives of a specific group of perpetrators, the murderers. Vermassen was a criminal lawyer and defended dozens of murderers. He decided to write down his experiences with all his clients in a book. In this book he categorized different types of murders like partner-killing; revenge-killing; serial-killing; but also massacres.

This was the first time I read about murder-motives, incentives that make someone do horrible things. It raised questions. What drives a person to harm another person, in any way at all? Is it possible to prevent for instance homicides and massacres? Or is it even possible to 'cure' someone's motives? From that moment I was interested in finding answers to questions like these.

I bought Jef Vermassen's book when I studied Crime Science. During this study a broad perspective of safety subjects were treated, so my interest did not only stay focused on the aspect of social safety. I finished my bachelor thesis by taking part in a project of the Fire department of Twente. We were asked to give advice on fire safety issues in the new hospital in Enschede. Which room or what space within the hospital could be considered dangerous, or sensitive for a fire to break out? Scenario-thinking was the strategy in this project to predict which scenarios were most likely to occur. Of course this depends on many different factors. Fire development; independence of the persons who are present in that specific scenario; the amount of produced smoke; etcetera. All are factors that influence the 'importance' of a scenario, or the risk of a scenario.

The quote on page three is from Warren Buffet and probably describes financial risks. However, I think it also applies for risks in many other study fields. When your purpose is to organize safety, in any field of safety whatsoever, it has to be organized structurally. In that way, risk approaches do work when they are substantiated and applied properly. That has been my opinion when I first applied for this research on legal gun ownership. The words "Risk factors" were the ones making me enthusiast writing this final master thesis for the study Master of Public Administration for the University of Twente. Being the final step in obtaining the degree of Master of Science, and performing my knowledge in practice.

With this thesis I hope to provide both the Dutch police; the University of Twente; and other interested readers, with basic knowledge on antisocial behavior and risk factors; knowledge on how the legal gun systems works in the Netherlands; and a general view on the possibilities and restrictions that relate with these two aspects. I also hope that this thesis provokes interest in conducting further deeper and broader investigation of this subject. Deeper by reconsidering conclusions. Broader by looking at the target-group, the legal gun owners, and researching questions liked: How do they experience policy changes, what do these changes mean to legitimacy, what are their motives, and what are the risks? These questions remain unanswered in this thesis, but enough questions will be answered in the upcoming pages.

Sint Nicolaasga, November 19, 2012

Kevin Maurice Drost

II.   List of abbreviations

Awb.	Algemene Wet Bestuursrecht
CSS	Criminal Sentiments Scale
Cwm.	Circulaire Wapens en Munitie
DSM-IV	Diagnostic and Statistical of Mental Disorders - IV
Ffw.	Flora en Faunawet
KNSA	Koninklijke Nederlandse Schutters Associatie
KNJV	Koninklijke Nederlandse Jagersvereniging
LSI-R	Level of Service Inventory-Revised
OJJDP	Office of Juvenile Justice and Delinquency Prevention
OVV	Onderzoeksraad voor Veiligheid
PCC	Psychology of Criminal Conduct
PCL-R	Hare's Psychopathy Checklist-Revised
Rwm.	Regeling Wapens en Munitie
VOG	Verklaring Omtrend Gedrag
WvSr.	Wetboek van Strafrecht
Wwm.	Wet Wapens en Munitie

III.   Executive summary

Keywords: Dutch police; Legal gun legislation and policy; Antisocial and Criminal behavior; Risk approach; Science-based risk factors; Integration and practical implementation.

A Dutch police region is looking for more knowledge in the application of risk factors into their current policy process of gun licensing, but also in the Dutch legal gun policy as a whole. This thesis investigated the possibilities of integrating risk factors of antisocial behavior into current legal gun policy. The research is divided into three phases, covering three levels of investigation on risk factors of antisocial behavior. First, science-based risk factors, what does theory say? Second, risk factors in legislation, what does the law say? And third, risk factors in practice, what do policy executors say? The first two phases are descriptive and have been studied by doing desk-research. The third phase is exploring and investigates three police regions using in-depth interviews to collect data on the application of risk factors.

Phase one examined literature on antisocial behavior. It described that antisocial behavior is the result of many different factors. Risk factors of antisocial behavior have been collected from many different studies on correlations and casual relations between variables (risk factors) and the dependent variable antisocial behavior. These variables, or 'science-based risk factors' in this research, can be categorized and rank-ordered to their importance (correlation with antisocial behavior). This resulted in a risk factor model with eleven categories of risk factors, each consisting of static and dynamic risk factors that help to recognize risk factors and estimate the risk. The model can best be used by applying it in a multidimensional way (using multiple instruments to collect data, using multiple informants to verify and validate information, using different methods to combine instruments, and using different settings to combine methods and informants).

How 'science-based' risk factors are embedded in legislation has been shown in phase two. Only one article in the Dutch gun law treats the aspect of fear for abuse. It states that someone may not possess a gun when he is a potential danger for himself or society. At the moment, this criterion is tested by using information from the police database about earlier convictions, looking back four and eight years into history, depending on the emergence of the perpetration. Comparing to foreign countries, Dutch legislation is far behind, only covering one category of the risk factor model and lacking in all aspects of multidimensionality. For instance, where some countries make use of multiple information channels, such as a doctor's declaration of psychological condition, Dutch legislation does not prescribe instruments like these.

How policy is translated from legislation into execution is explored in the third phase of this research. Three police regions have been interviewed to collect data on the integration of risk factors and the feasibility of legislation. Three interesting aspects have been concluded from this comparison. First there is a great variety between regions regarding the integration of risk factors. Second, goals described in legislation are not feasible because of lack of capacity and priority. Third, information is not shared properly by and to police regions because they lack structural processes, knowledge and restrictions in sharing information.

The integration of science-based risk factors in legislation and practical execution of legal gun policy, has been tested with the multidimensional risk factor model of phase one. The model has two functions. It can be used as an introduction for the police to apply a risk approach in policing. The other function is the application of the model to collect information on risk factors to estimate the risk of antisocial behavior. It is recommended to use this model in a multidimensional way by applying multiple information channels and multiple methods. Also structured universal processes and instructions have to be made to limit the variety between regions in policy execution.

IV. Beknopte samenvatting

Kernbegrippen: Politie; Beleid en wetgeving; Legaal wapenbezit; Antisociaal en Crimineel gedrag; Risicobenadering; Wetenschappelijk onderbouwde risicofactoren; integratie en praktische toepassing

Vanuit een Nederlandse politieregio zijn vragen ontstaan over de toepassing van risicofactoren in het huidige beleid en de wetgeving rondom legaal wapenbezit. In deze thesis zijn de mogelijkheden onderzocht om wetenschappelijk onderbouwde risicofactoren van antisociaal en crimineel gedrag te integreren in de huidige beleidsvoering en wetgeving. Het onderzoek is opgebouwd uit drie fases die het onderzoek naar risicofactoren op drie verschillende manieren vormgeven. Als eerst is onderzoek gedaan naar wetenschappelijk onderbouwde risicofactoren. Vervolgens is er gekeken naar de integratie van risicofactoren in de wet en regelgeving. Als laatste is gekeken hoe het in praktijk gesteld is met risicofactoren door te exploreren hoe de wet wordt uitgevoerd en hoe risicofactoren gedekt worden.

Fase één beschrijft antisociaal gedrag als een resultaat van vele factoren. Risicofactoren van antisociaal gedrag zijn verzameld uit verschillende studies die correlaties tussen variabelen (risicofactoren) en antisociaal gedrag beschrijven. De factoren zijn geordend naar belangrijkheid aan de hand van hun correlatie met antisociaal gedrag. Dit heeft geresulteerd in een wetenschappelijk onderbouwd model van risicofactoren met elf categorieën. Elke categorie bestaat uit zowel statische als dynamische factoren, die bepalend zijn voor het herkennen en inschatten van risico's. Het model heeft de meeste meerwaarde als het op een 'multidimensionale' manier wordt toegepast. (gebruikmaken van meerdere en verschillende informatiekanalen en methodes).

De manier waarop de in fase één aangetoonde risicofactoren gedekt worden door wet- en regelgeving is beschreven in fase twee. Slechts één artikel in de Nederlandse wapenwet besteedt aandacht aan het criterium 'geen vrees voor misbruik'. Hiermee wordt bedoeld dat iemand geen wapens mag bezitten wanneer hij een gevaar voor zichzelf, of voor de samenleving is. Dit criterium wordt beoordeeld aan de hand van politiegegevens over eerdere veroordelingen. Vergeleken met andere landen loopt de Nederlandse wapenwetgeving achter als het gaat over risicofactoren. De wet- en regelgeving dekken enkel één categorie van het risicofactor-model, en zijn verre van 'multidimensionaal'. In tegenstelling tot andere landen, waar bijvoorbeeld gebruik wordt gemaakt van meerdere informatiekanalen zoals een doktersverklaring of een toestemming van huisgenoten.

De vertaling van wet- en regelgeving naar de daadwerkelijke uitvoering van het beleid is geëxploreerd in fase drie. In deze fase zijn drie politieregio's geïnterviewd om informatie te verzamelen over de integratie van risicofactoren en de haalbaarheid van het gestelde beleid. In deze fase zijn drie interessante aspecten naar voren gekomen. Als eerste kan genoemd worden de grote diversiteit binnen de regio's, betreffende de toepassing en integratie van risicofactoren. Ten tweede zijn volgens de geïnterviewden, de in de wet gestelde doelen vaak niet haalbaar door een gebrek aan capaciteit en prioriteit. Het derde aspect heeft betrekking op de slechte informatiepositie die politieregio's ondervinden door een gebrek aan structurele beleidsprocessen, gebrek aan kennis en beperkingen in informatiedeling.

De integratie van wetenschappelijk onderbouwde risicofactoren in het beleid rondom legaal wapenbezit is in dit onderzoek getest met het multidimensionale risicofactor model van fase één. Het model kan gebruikt worden om een risicobenadering te introduceren. De andere functie is de toepassing van het model om op een structurele manier data over risicofactoren te verzamelen zodat een potentieel risico voor antisociaal gedrag kan worden ingeschat. Het is aanbevolen om dit model in een multidimensionale manier toe te passen door gebruik te maken van zowel meerdere als verschillende informatiekanalen en methoden. Ook is het belangrijk om structurele, universele beleidsprocessen te ontwikkelen om de diversiteit tussen politieregio's te beperken.

V. Table of contents

1. Introduction

Aurora, Colorado: A 'Gunman' killed twelve and injured at least fifty-four persons in a packed, darkened movie theatre. An incident that made the twentieth of July a black day in America's history of shooting incidents (Frosch & Johnson, 2012). The fact that catastrophic events like the one described above, can happen closer to home, has been proven in the shopping centre Ridderhof in Alphen a/d Rijn at the ninth of April in 2011. A man stepped out of his vehicle to shoot an unsuspecting pedestrian. Thereafter, he walked to the shopping centre to aim and shoot at whatever was standing, walking and not knowing what would happen in the next couple of minutes. In total, the man shot down twenty-two people. Six of them died, and after the deed he eventually killed himself (Adang, Duin, Kop, Tops & Wijkhuis, 2012).

Happenings like these make a huge impression on society. It creates feelings of misunderstanding, compassion for the victims, hate to the perpetrator and a deep desire for improvement of today's world together with the hope that something like this will never happen again. Next to these feelings, there is also a need for responsibility and a need for answers to questions like: how things have been executed and what went wrong, are there more persons or actors that can be found guilty, how have the emergency services been acting and how was the co-operation between all the active actors? These questions are about crisis management and raise new questions on different levels of policy. The Alphen incident created questions on legal gun ownership because the perpetrator was licensed to possess five guns. This gave him the opportunity to prepare and commit a crime like the one he committed. How could a person with such motives own five potential murder weapons?

The Dutch Safety Board (Onderzoeksraad Voor Veiligheid, OVV) has, in request of the Ministry of Safety and Justice, already done some research to the incident of Alphen and its corresponding policy execution. One of the recommendations of this study was to inventory risk factors of antisocial behavior and how to make them applicable in policy (Onderzoeksraad voor Veiligheid, 2011, p. 9). The board states that there is need for knowledge about the indication of potential weapon abuse, more knowledge about the implementation of these risk factors, and the improvement of sharing information with different actors to increase the chance of indicating risk factors. According to this recommendation, the executing department of legal gun ownership, the department of Special Laws from a Dutch police region, requested to conduct an exploratory research on the current policy of legal gun ownership and the integration of risk factors within this policy.

This thesis, an advisory report to a Dutch police region, is the result of an exploratory study to the possibilities of integrating risk factors of antisocial behavior into the current policy of legal gun ownership. The central question in this research is:

> *How and to what extend can science-based risk factors of antisocial behavior be integrated in the gun license-policy of the Dutch police?*

This question will be answered by investigating risk factors at three different levels, namely: science-based level (risk factors according to scientific research); legislation-level (the use of risk factors in legislation); and practice-level (risk factors in practice by exploring the execution of legislation and the coverage of risk factors). The research can thus be separated into three different phases. Namely: science-based risk factors of antisocial behavior; risk factors in Dutch legal gun legislation; and the execution of legal gun policy by police regions with respect to risk factors. In this way, risk factors that are found in phase one can be compared with the other levels: how risk factors are embedded in policy and how they are actually used in practice, to provide an answer to the question of, how and to what extend risk factors can be integrated. The research consists of two descriptive research

phases followed by an exploratory phase. The first descriptive phase will focus on theory about risk factors that may lead to antisocial behavior. The first paragraphs of chapter two elaborate general knowledge on antisocial behavior and give information on how antisocial behavior develops. The next paragraphs will conclude and define the risk factors according to the described theory and elaborates how risk factors can be recognized and applied according to theory. In the second phase, covered by the five paragraphs of chapter three, a description will be given about the differences between the gun law in foreign countries with similar legislation as the Netherlands. Next, a deeper policy analysis will be made of the Dutch legislation on legal gun ownership, which will provide information for a conclusion that describes how current policy and legislation deal with risk factors. Chapter four covers the third phase and explores how risk factors are practically integrated according to Dutch police regions by investigating how policy is applied on the levels of determination and execution.

The following paragraph gives a definition of the problem that is being studied in this research. It describes the emergence of this problem, the concrete policy problem and how this problem can be analyzed. Chapter 1.2 describes the scope and defines the borders of this study. This chapter ends with a description of the research methodology that is used by drawing all three phases with their related sub-questions that will be used to give an answer to the general question of this study. It also describes which techniques will be used to help answering these questions.

1.1 Problem definition

The Dutch police force is looking for more knowledge on the licensing of firearms. The trigger for this was the incident that took place in Alphen a/d Rijn at April nine 2011. The shooter was licensed to possess a total number of five guns and was a member of a local shooting club. In the shopping centre in Alphen a/d Rijn, sixteen people were shot down and seven people died (including himself). Because the man had the privilege to legally possess different guns, it gave him the opportunity to actually commit a crime like this. Current policy on the safety and control of legal gun owners is strict and tight but only covers the information that is known from the police databank. It therefore lacks in comprehensive knowledge of one's potential motives to commit antisocial behavior. This study investigates how science-based risk factors can play a role in the cause of criminal behavior, and if these risk factors can actually be integrated into current and policy of legal gun ownership. The aim of this research is to study the current state of policy on legal gun-ownership and see if it is possible to integrate risk factors that might relate with, or cause antisocial or criminal behavior.

A policy analysis will be used to check how science-based risk factors are covered in both legislation and practice. Before a framework or design of this analysis can be constructed, the problem type has to be determined (Hoppe, 2011). 'The Governance of Problems' of R. Hoppe (2011) gives an abstract description of the problem typology in policy. Hoppe distinguishes an opposed pair of structured versus unstructured problems. One can speak of structured problems when policy designers perceive consensus on the normative issues at stake and are certain about validity and applicability of claims to relevant knowledge (Hoppe, 2011, p. 72). The problem of integrating risk factors into gun policy can be seen as an unstructured problem because there is uncertainty about knowledge and the applicability of knowledge. However, the scope of this research is on science-based risk factors in legislation and practice, thus the problem should be defined as a moderately structured problem focusing on goals. When focusing on goals, it is assumed that policy makers are close to agreement on norms and values at stake (focusing on legitimacy), but are far from certainty on required and available knowledge (focusing on legislation and practice).

Hoppe related problem types to policy analysis styles that have been introduced by Mayer, Daalen and Bots (2004). First it is important to summarize some knowledge on policy analysis. Mayer, Daalen

and Bots (2004) created the 'conceptual model' that combines methods of policy analysis with activities and styles. It serves three purposes: 1. The understanding of policy analysis as a discipline; 2. Contribution to the design of new policy analysis, and; 3. Guidance for evaluating such projects (Mayer et al., 2004). In this study the conceptual model will be used to design a framework for policy analysis. Hoppe (2011) uses the comprehensive model of Mayer et al. (2004) to relate styles of doing policy analysis with his problem typology. Hoppe's figure of relation between styles and problem types, advices a rational style of policy analysis with this kind of problem. A rational style consists of two aspects: 1. Research and analysis, and; 2: Design and recommendation. A combination between these two aspects will be used for the framework. Methods of analysis in the rational style are scientific techniques like in-depth interviewing, surveys and statistical analysis, and recommendations based on comparisons to translate knowledge into new policy (Mayer et al., 2004). The methods of analysis will be described in paragraph three of this chapter.

1.2 Scope of research

The scope of this research lies on three levels: science-based level, what are risk factors according to scientific research; legislation, how are they found in legislation documents regarding legal gun ownership; and practice, how are risk factors used by policy executors. In phase one, science-based risk factors that are related to or might cause antisocial and/or criminal behavior, are drawn from worldwide-published scientific literature. The focus will be on antisocial and/or criminal behavior in general. This is because the Dutch gun law describes that 'someone may own a rifle if there is no fear that he or she abuses this preposition' (Wwm, 2012, article 7, clause 1). The context of 'Abuse' will be used in this study as different forms of antisocial behavior or criminal behavior and will be explained later on in this thesis. In phase two, the current state of science-based risk factors in Dutch legislation will be analyzed and compared with foreign legislation by using policy documents and policy legislation. In phase three the practical integration of science-based risk factors is investigated by using in-depth interviews with practical policy executors and policymakers from three police regions in the Netherlands. These regions are selected with purposive sampling (and are chosen to be the police forces of: Region A, region B and region C). Initially five police regions have been selected as respondents, including the police region D and region E. Unfortunately, the last two regions were not able to take part in this study. Considering the amount of time that has been reserved for this research, the three residual regions seem to cover a general view for gun policy in the Netherlands. The regions cover up the north, east and middle of the Netherlands and provide a mix of hunters and members of shooting clubs. For example, in region A, there are more active hunters than members of shooting clubs. However, this is different in region C, where legal gun ownership is more represented by members of shooting clubs (Onderzoeksraad voor Veiligheid, 2011).

1.3 Methodology

The first paragraph already mentioned a rational style of policy analysis as a research strategy for this study. This paragraph will describe how this strategy is applied in the investigation of risk factors at science-based level, legislation-level, and practice level. A visual model of this research approach can be found in Appendix D. Table 1.1 on the next page distinguishes the different phases related to their sub-questions and methods. The sub-questions and strategy to answer these questions are described for each phase in the same order as presented throughout the research.

General research question:					
How and to what extend can science-based risk factors of antisocial behavior be integrated in the gun license-policy of the Dutch police?					
	Sub-question	**Question type**	**Case selection**	**Data collection**	**Data analysis**
Phase 1	What are according to scientific research, risk factors that relate with or cause antisocial behavior?	Descriptive		Published literature on risk factors	
	How can risk factors be recognized and theoretically be applied to policy?	Descriptive		Published literature on the applicability of risk factors	
Phase 2	How are, according to legislation, risk factors embedded in current Dutch and foreign gun policy, and what are the differences?	Descriptive	Legislation of legal gun ownership of The Netherlands, Germany, Belgium, Finland, Norway	Policy documents, literature on legal gun ownership	Comparison of science-based risk factors with Dutch and foreign legislation
Phase 3	What are, according to Dutch police regions, problems; weaknesses; and shortcomings in current gun policy, focusing on risk factors?	Exploratory	Policy executers and policy-makers of three Dutch police regions	In-depth interviews, policy documents, literature on legal gun ownership	Comparison of policy determination and execution between different regions
	To what extend are risk factors practically applied in policy and how can this be improved?	Exploratory	Policy executers and policy-makers of three Dutch police regions	In-depth interviews, policy documents, literature on legal gun ownership	Comparison of how science-based risk factors are applied in different regions

Table 1.1: Research questions, question types, design, selection, collection and data analysis

Phase one describes theory on science-based risk factors. Desk research will be used to explain how criminal and/or antisocial behavior begins, evolves and ends. Also, theory on differentiation in criminal/antisocial behavior will be explained to investigate differences in risk factors. This research will make use of published literature on risk factors and the applicability of risk factors into policy. The study fields of sociology, criminology and behavioral psychology will be used to collect information on risk factors, recognition of risk factors and the integration of risk factors into policy. The science-based risk factors that are concluded from this phase are used as variables in the other two phases. They are used in legislation-level to investigate and compare how science-based risk factors are covered in Dutch and foreign legislation on legal gun ownership. And used in practice-level to explore how science-based risk factors are applied in the different police regions.

Science-based risk factors in legislation-level are investigated by doing desk research on current Dutch and foreign legislation on legal gun ownership. Subsequently, Dutch and foreign policies on legal gun ownership will be compared and analyzed on how risk factors are integrated and applied, using the results from phase one as a model for risk factors. With this comparison, the differences between Dutch and foreign countries in the way of integrating science-based risk in legislation will be visualized.

The third phase will explore how science-based risk factors are embedded in the practical execution of policy in three different police regions. Again, science-based risk factors will be used as comparing variables to investigate how risk factors are integrated and what the differences are between police

regions regarding the application of legislation. In-depth interviews with leading and executing police personnel will be used to compare the execution of legislation and the coverage of science-based risk factors, between the different regions. The data of these regions will be compared on the basis of four categories, each consisting of different variables acting as leading subjects during the interviews. The categories that will be compared are: Enforcement and execution of policy; contentment; risk factors; and innovations. The first category is derived from theory on quality of policy. Hoogewerf (1993) states that good policy consists of feasible goals. This variable can be measured by comparing policy determination with policy execution. The second category is used to explore problems, weaknesses and shortcomings in policy to compare policy determination and execution with legislation. The third category is derived from phase one, the science-based level, collecting information on the coverage of science-based risk factors in policy practice. The fourth category is used to explore possibilities of integrating risk factors in policy processes. The variables within these categories are derived from theory on policy quality by Hoogewerf (1993), Hoppe (2010) and Mayer et al. (2004). The different variables will be mentioned in chapter four. A list of all comparing variables can be found in appendix A. All data will be transcribed, analyzed on phrase level and put in a table, comparing all phrases of each respondent, related to the compatible variable (Baarda, de Goede & van der Meer-Middelburg, 1996).

To summarize the research design: science-based risk factors will be studied and will be used to describe how they are embedded in legal gun legislation and explore how they are covered in practical application of the law by three different police regions. This structure, consisting of three phases described throughout this research, eventually leads to an answer to the leading question regarding the possibility of integrating science-based risk factors into current legal gun policy in the Netherlands.

2. Science-based risk factors in the prediction of antisocial behavior

2.1 Introduction

Imagine a young adult, let us call him "X" for now, who has just reached the age of twenty-two. The man, who has been currently unemployed for seven months, has, because of his affinity for shooting, requested a gun license at the chief constable of his police area. His affinity with guns and shooting is dated from his childhood. This is most likely the reason that he decided to join a local shooting club at the age of sixteen. Among former school colleagues, X was familiar of his aggressive behavior and his negative attitude towards school and authority. This behavior was probably the result of the fact that his parents were divorced when he was eight years old. His behavior also was the cause that he had practically no friends and was sort of 'social isolated'. X was also mentioned to associate himself with extreme thoughts of neo-Nazism. He felt misunderstood by society and had extreme thoughts. Yet, he was never convicted for criminal behavior, nor has anyone considered him as a 'dangerous' person. After five years of passive membership, meaning that he became compatible with shooting with the minimum of 18 shooting lessons per year, he decided to request a gun license to possess his own guns. The request was approved and X bought three guns with compatible ammunition.

The question that has to be raised is: is it appropriate to give X his gun license? Indeed, he has a reasonable interest, this means he is a member of a shooting club for at least one year, he is in possession of a license given by the Royal Dutch Shooting Association (Koninklijke Nederlandse Schutters Associatie, KNSA), and he is compatible with shooting (this process will be highlighted in phase two of this research). Together with the positive background-check, this indicates that there is no fear for abuse. But does this mean that there is no risk at all? Do factors like thoughts of neo-Nazism, social isolation and unemployment have no influence on fear of abuse?

Risk factors at science-based level will be investigated in this research phase. The focus lies on the prediction of antisocial and criminal behavior. Can we, according to some measured variables, say that one person has more potential to abuse his privilege of a gun-holder than another person? In this phase the first two paragraphs will illustrate the concept of criminal behavior and the different pathways to crime. The next paragraph introduces the prediction of criminal behavior by using risk factors. Paragraph three and four investigate and emphasize the risk factors that relate to criminal behavior, and makes the distinction between two theories of risk factors, namely: "The Psychology of Criminal Conduct" of Andrews and Bonta (2010), and "OJJDP's comprehensive strategy" (Loeber & Farrington, 1998a; Wilson & Howell, 1993). The last theoretical concept is more focused on juvenile offenders than the first one, which gives a more complete picture of risk factors, valid for a bigger range of age. Paragraph three and four of this chapter determine which risk factors need to be adapted in this study and outline the basis for assessing license holders on fear for abuse. The focus of the fifth paragraph is on the theoretical integration of risk factors. What type of assessments are given by literature, what are the differences and most important, and how they can be applied in policy?

2.2 A pathway to antisocial- or criminal behavior

The psychological definition of crime as antisocial behavior is best combined with the broader definition of "problem behavior." If the definition lacks this combination, some of the non-deviant practices of dentists, surgeons, and teachers would surely be judged criminal (Andrews & Bonta, 2010). The definition of criminal behavior is based on definitions in a legal, moral, social, and a psychological view on criminality and antisocial behavior (Andrews & Bonta, 2010, p. 11). The working definition of criminal behavior that will be used in this study is as follows: "Criminal behavior

refers to antisocial acts that place the actor at risk of becoming a focus of the attention of criminal justice professionals within the juvenile and/or adult justice systems." (Andrews & Bonta, 2010; Ullmann & Krasner, 1976). Criminal acts are part of a more general class of behavior that social psychologists have been calling "problem behavior" or "deviant behavior" since the 1970s (Jessor & Jessor, 1977; Ullmann & Krasner, 1976). In this study this type of behavior will be called 'antisocial behavior'.

How criminal behavior arises has been explained in many theories and fields of study. The major theories of criminal activities and/or behavior have been classified in various ways by various authors (Andrews & Bonta, 2010; Loeber, Farrington & Waschbusch, 1998[b]). To draw information on science-based risk factors, it is important to describe theories on the origination of antisocial and criminal behavior and how this behavior develops. According to Andrews and Bonta (2010) risk factors are derived out of four general theories, explained in the section below.

The origination of antisocial behaviors:
In this section, the major theories on the origination of criminal behavior will be summarized to give insight in the root of the predictors of crime, or risk factors, that are described later on in this chapter. The following classification has been used in the Psychology of Criminal Conduct (Andrews & Bonta, 2010): Psychodynamic theory, social location, differential association, and social learning/ social cognition. The first is the psychodynamic theory, rooted in the psychoanalytic perspective of Sigmund Freud (Freud, 1953). The key theoretical idea is that criminal behavior reflects psychological immaturity and particularly weak self-control in specific situations. Freud calls the key structures of personality, 'ego' and 'superego', which interact with the immediate environment and the demands of 'id' for immediate gratification. The major risk factors in this theory are, according to Andrews & Bonta (2010): Impulsivity, disturbed interpersonal relationships, low levels of success in school and at work, weak superego (little guilt, reckless disregard for conventional rules and procedures, early misconduct, antisocial attitudes), weak ego (limited social skills), aggressive pleasure-seeking, readily angry, problems in the family of origin. Second, there are theories on social location, suggesting the idea that criminal behavior reflects where one is located in the social system. When no success is achieved, it potentially results in personal distress, or strain (Merton, 1938). The major risk factors are: Lower-class origins, low levels of success at school and work, feelings of alienation (as opposed to feelings of being mistreated), perception of limited opportunity in combination with desire for conventional success, being a gang member, adoption of lower-class values. A third general theory on antisocial behavior is the differential association theory of E. Sutherland (1939). The theoretical idea of this theory is that criminal behavior is an expression of differentials in the reinforcement and punishment of criminal and noncriminal alternative behavior. Meaning that it is very important what people think and defining particular situations as one in which it is "OK" to violate the law. The attitudes, values, beliefs, and rationalizations that may support such a definition are learned through differentials in exposure to pro-criminal and anti-criminal patterns. This theory is also called "the Social Learning Theory" (Akers, 1973). Major risk factors in this theory are: Antisocial attitudes and antisocial associates (Andrews & Bonta, 2010). The fourth theory is the general personality and social psychology approach of Andrews & Bonta (2010). This general model is perhaps best described as a "social learning", "cognitive behavioral", or "social cognition theory". Its key theoretical idea is: The chances of a criminal act (a) increase with the density of rewards signaled for criminal behavior and (b) decrease with the density of signaled costs of criminal behavior. These signaled rewards reflect personal control through antisocial attitudes, interpersonal control through the social support for crime provided by antisocial associates, non-mediated control established by a history of reinforcement of criminal behavior, and/or personal predispositions. The major risk factors are: Antisocial attitudes, antisocial associates, antisocial behavioral history, antisocial personality, and problematic conditions in the domains of home, school, work, and leisure.

Differentiation of crime and antisocial behaviors:

Criminal behavior refers to antisocial acts (Andrews & Bonta, 2010). Of course there are many different antisocial acts. For example, one could steal, one could lie, and one could fight a lot or even kill. All acts can be defined as antisocial behavior but they differ a lot from each other. According to the Dutch Criminal Law (WvSr, 2012) crime can be separated in for example: property crime, violent crime, and traffic violation. Theory also describes many different forms of criminality (Loeber, Farrington, Waschbush, 1998[b], p. 13). For instance; Fraud, burglary, carjacking, homicide, kidnapping, can be classified into different categories. Loeber et al. (1998[b], p. 14) separated the officially recognized delinquent careers into four categories: Serious Offenders, Violent Offenders, Chronic offenders and the additional Non-Serious Offenders. An overview of forms of delinquency related to the category as described by Loeber et al. (1998[b], p. 14) is given in table 2.1 below. There is some discussion between theorists on how to define chronic offenders (Loeber et al., 1998[b], p. 15). The main feature to distinguish chronic from non-chronic is the frequency of offending.

Category	Delinquency
Serious Offenders	Violent offences (violent of ordinances, vandalism, drunkenness, malicious mischief, disorderly conduct, traffic and motor vehicle law violations); felony larceny/theft; auto theft; fraud; dealing in stolen property; burglary; break and enter; carjacking; extortion; forgery and counterfeiting; embezzlement; drug trafficking; arson (other than of an occupied building); weapons violation and firearms regulations/statutes
Violent Offenders	Homicide; aggravated assault (including weapons offences and attempted murder); robbery (including armed robbery); kidnapping; voluntary manslaughter; rape or attempted rape; arson of occupied building
Chronic Offenders	All above named delinquencies with a frequency-rate of five or more
Non-Serious Offenders	Simple assault; possession of a controlled substance; disorderly conduct; vandalism; non-violent sex offenses; minor larceny; liquor law offences; etcetera

Table 2.1: categorization of delinquency. Note: there is some overlap between the categories. This is because the distinctions that are made are dependent on judgment and regulation and may change over time (Loeber et al. 1998[b], p. 16). Note 2: this table is based on the findings of the analysis of Snyder (1998). He chose to follow the Philadelphia study of Wolfgang, Figlio, and Sellin (1972). In this study, chronic offenders are those with five or more police contacts in their juvenile careers.

Snyder (1998, p. 440) visualized the frequency of the career types in table 2.1 to show their interrelationships. The study of Snyder (1998, p. 429) analyzed all persons born between 1962 and 1977 who were referred to the juvenile court in Maricopa County, Arizona, for a delinquency offence prior to their eighteenth birthday (N=151,209).
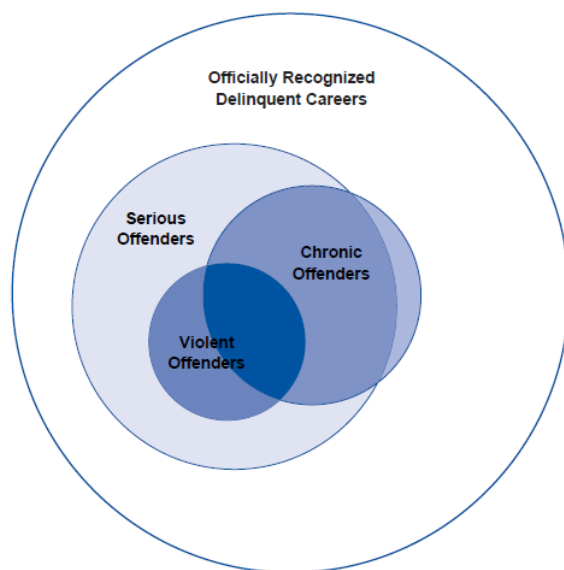
Figure 2.2: Anatomy of delinquent careers Snyder (1998, p. 440) Note: The outer circle represents all officially recognized delinquent careers. The portion of the large circle not covered by the chronic, serious, and violent offenders' circles represents careers with fewer than four referrals and no referrals for a serious offense. Overlaps represent careers with multiple attributes. The circles and their overlaps are drawn proportional to the number of careers with those attributes (Snyder, 1998, p. 440).

Serious offenders are those who have committed one or more serious offences such as violence, burglary or drug trafficking. Violent offenders are those who have committed one or more violent offenses such as, homicide, robbery or attempted rape. According to the Philadelphia study (Wolfgang et al, 1972) chronic offenders are those who have committed five or more serious or violent offences. How does one develop himself to one of these categories? What makes a person a thief, a vandal or a killer? There are different theories or pathways that relate to the development of crime. According to Tolan and Smith (1998) there are two major developments that provide a base for a development perspective. The first suggests that childhood aggression and violent behavior can both be divided into overt or defiant acts, such as aggressive or rule breaking defiance of authority versus covert or sneaky acts, like for instance stealing and lying (Loeber et al., 1993; Quau, 1986; Tolan & Smith, 1998, p. 77). The other perspective suggests that patterns of development over time can be differentiated in many ways (Loeber, 1982; Tolan & Smith, 1998, p. 77). Loeber and Le Blanc (1990) suggested that for example the timing of first aggression might distinguish risk, the rate of involvement in increasingly serious delinquency or the order of involvement might distinguish risk and a wider variety of involvement may suggest greater long-term risk; some children develop a more varied set of delinquent behavior, whereas other children develop a smaller set of less serious offences (Tolan & Smith, 1998, p. 78).

Loeber and Hay (1994) conducted a pathway approach that has been theoretically developed and empirically evaluated through several iterations (Tolan & Smith, 1998, p. 78). They have come to identify three different pathways of development toward delinquency by splitting overt acts into those representing aggression; covert acts representing covert behavior and authority conflicts representing stubborn behavior. Figure 2.3 shows the 'Three Pathways to Boys' Problem Behavior and Delinquency. It represents the three pathways and also illustrates that if one has developed himself deeper into one pathway, involvement in another pathway is more likely. This means that there is a relation between involvement in more types of antisocial behavior and more serious offending (Tolan & Smith, 1998, p. 79).
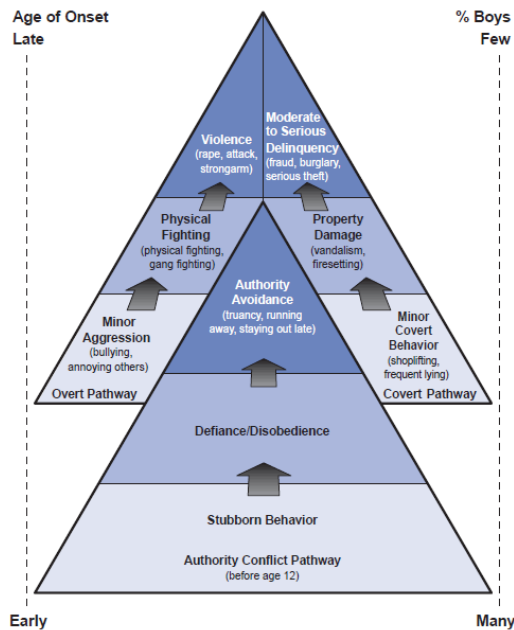
Figure 2.3: Pathways to Boys' problem behavior and delinquency

As can be seen in figure 2.3, the Overt Pathway begins with childhood aggression such as bullying as a first step, followed by physical fighting and ending in serious violence such as rape. The Covert Pathway begins with minor covert behavior such as lying and then progresses into property damage such as vandalism, ending in moderate to serious delinquency like for instance: fraud; burglary and serious theft. The Authority Conflict Pathway begins with stubborn behavior in childhood progressing in acts of defiance and disobedience to more acts such as truancy and running away. This pathway applies to juveniles below age twelve and may continue into the overt and/or covert pathway (Tolan & Smith, 1998, p. 79).

Antisocial behavior can thus be separated into different antisocial behavioral acts like for instance theft, lying, and murder. These acts have different impacts and can be categorized into different forms of delinquency such as non-serious offending, serious non-violent offending and violent offending. An offender can follow different pathways like for instance the Overt Pathway resulting in rape. Elliott (1994) says that sexual assault is almost invariably preceded by a sequence of increasing violence and harmful nonviolent acts (Tolan & Smith, 1998). This means sexual violence represents a development end point or pinnacle of serious criminality that presumably serves as a marker of high probability of involvement in other acts and continued risk (Tolan & Smith, 1998). Combinations of violations, antisocial acts or offences represent a higher risk for future delinquency.

After describing the categorized forms of behavior and the different pathways that may lead to criminal acts, it is important to know which factors cause or are related to that type of behavior and which combinations of factors will cause a higher risk for future delinquency. The term 'risk factor' (Andrews & Bonta, 2010) will be used in this study, but different terms are used in theory, like for instance: predictors of crime (Hawkins et al., 1998, p. 106) or criminogenic needs (Andrews & Bonta, 2010). The next paragraph describes the prediction of criminal behavior by using science-based risk factors.

2.3 Prediction of criminal behavior using risk factors

Crime or criminal behavior can be predicted by looking at the knowledge of the biological, personal, interpersonal, situational and social variables that are associated or correlated with criminal behavior (Andrews & Bonta, 2010). These terms are called covariates of criminal behavior and include the

correlations of individual differences in a criminal history and the predictors of the criminal futures of individuals. 'The psychology of Criminal Conduct' (Andrews & Bonta, 2010) seeks knowledge of the causes of the criminal conduct of individuals, and will be used as a basis for the prediction of criminal behavior in this study. The predictors of crime are distinguished into static risk factors and dynamic risk factors (criminogenic needs, variables that change over time). Different types of covariates, depending on the study, can be found in biology, personality, and peer relationships. Different types of covariates include for example, causal relations (are found in experiments) and correlations (are found in, for example: surveys). Theory on antisocial and criminal behavior, described in the previous paragraph, form the basis of risk factors. Many studies have tried to explain the relation between independent variables and the dependent variables 'criminal behavior' and 'antisocial behavior'. Andrews and Bonta (2010) use meta-analyses of different relationships between covariates and criminal behavior. A meta-analysis uses the results from individual studies to convert it into a common metric or statistic, referred to as 'the effect size'. The effect size allows more direct comparisons of the results from various studies and the averaging of effect sizes across studies. The type of effect size that is used by Andrews and Bonta (2010) in their study is Pearson Product Moment Correlation Coefficient (r). This particular type of correlation coefficient is a general measure of the magnitude of covariation and is most frequently used in research. r can take values between 0.00 and 1.00 and it expresses the magnitude of a linear relationship between two variables. When the value of r is 1.00, then the level of association or predictive accuracy is 100 percent. A linear relationship is one that may be described by a straight line: That is, for example, as the observed level of one variable increases, so does the observed level of the other. The correlation coefficient will take a negative value if there is an inverse relationship: That is, as the observed level of one variable increases, the observed level of the other variable decreases (Andrews & Bonta, 2010).

Major and moderate risk factors:
So, what are according to the study of Andrews and Bonta (2010) and the theories described in chapter 2.2, science-based risk factors in the prediction of criminal/antisocial behavior and how strong is their correlation with antisocial behavior. Risk factors can be distinguished into a section of major, moderate and minor risk factors. Major risk factors, are also mentioned as 'the big four', and are found in four categories: History of Antisocial Behavior; Antisocial Personality Pattern; Antisocial Cognition; and Antisocial Associates. Moderate risk categories are: Family/Marital Circumstances; School/Work Circumstances; Leisure/Recreation Circumstances; and Substance Abuse. Together with the major four categories they form, 'the central eight' risk factors. All risk categories consist of static and dynamic risk factors. These factors relating to their category are elaborated in chapter 2.4. By using the Pearson correlation coefficient, it is possible to rank order and categorize potential risk/need factors in terms of the strength of their correlation. Figure 2.4 summarizes the findings of eight separate meta-analyses. Each meta-analysis made use of the Pearson r as measure of the effect size. Therefore overall means (called "grand means" in figure 2.4) can be calculated for the "Big four" the "residual four" and some of the minor risk/need factors that are tested in the different Meta analysis. In figure 2.4, CI is the Confidence Interval that gives the range of values that are likely to occur around the mean effect size. The CI is set at 95 percent, meaning that 95 percent of the time, the true mean falls within that interval. Notable is that the overall mean for the minor set of risk/need factors was .03 with a CI range of -.02 to .08, including .00, which indicates that on average there is no relationship between the potential predictor variables and criminal behavior (Andrews & Bonta, 2010).

	One	Two	Three	Four	Five	Six	Seven	Eight
				Meta-analytic Review				
History of Antisocial Behavior								
	.21p	.38p	.16	.26	.35	.22	.28	.16
Antisocial Personality Pattern								
	nt	nt	.18	19	.31	.12	.34	.33
Antisocial Attitudes								
	.22p	.48p	.18	nt	.21	nt	.15	.36
Antisocial Associates								
	nt	nt	.21	.37	.27	nt	nt	.28
Grand Mean of Big Four Risk/Need Mean Estimates (.26, 95% CI = .22/.30, k = 24)								
	.22	.43	.18	.27	.29	.17	.26	.28
Family/Marital								
	.18	.20	.10	.19	.16	.10	.14	.33
Education/Employment								
	.12	.28	.13	.19	.28	.04	.17	.21
Substance Abuse								
	nt	nt	.10	.06	.24	.11	.22	.06
Leisure/Recreation								
	nt	nt	nt	nt	.21	nt	nt	nt
Grand Mean of Moderate Risk/Need Mean Estimates (.17, 95% CI = .13/.20, k = 23)								
	.15	.24	.11	.15	.22	.08	.18	.20
Lower-Class Origins								
	.06	.05	.05	.10	nt	.00	nt	nt
Fear of Official Punishment (Deterrence)								
	nt	nt	nt	nt	nt	nt	nt	−.25
Personal Distress / Psychopathology								
	.08	.07	.05	nt	.14	−.04	.02	−.08
Verbal Intelligence								
	nt	nt	.07	.11	nt	.01	nt	nt
Grand Mean of Minor Risk Factor Mean Estimates (.03, 95% CI = −.02/.08, k = 16)								
	.07	.06	.07	.11	.14	−.01	.02	−.17

p: pooled estimates for attitudes / associates and for history/personality; nt: not tested.

Figure 2.4: "The Correlation (*r*) between criminal and the central eight, personal emotional distress, and lower-class origins: Mean estimates from eight Meta-analyses (Andrews & Bonta, 2010, p. 65).

Minor risk factors or additional risk factors:

Even though there is, according to the Meta analysis of Andrews and Bonta (2010), on average no relation between the minor risk factors and criminal behavior, the minor risk factors are taken into account because there still is a possibility of a correlation. Take for instance the risk factor 'Major mental disorder' related with criminal behavior in the example of the Alphen incident. Of course, the perpetrator of the Alphen incident, had psychical problems (Onderzoeksraad voor Veiligheid, 2011), a minor risk factor with a huge impact. The study of Andrews and Bonta (2010) focuses on the causes of more common crimes, as they state: "*because very little is known about the psychology of mass murderers, we will limit our presentation to serial killers*" (Andrews & Bonta, 2010, p. 489). One of the reasons that there is little knowledge about mass murderers is because in many cases the mass murderer cannot be interviewed or studied because he commits suicide or is killed by the police (Hickey, 2002; Holmes & Holmes, 1992; Lester, 2002, 2004; Mullen, 2004). Minor risk factors can thus lead to catastrophic effects. It would therefore be unlikely to exclude them from this study. There is however a difference between the minor risk factors. The most important risk factors are the factors with the highest correlation with antisocial behavior. As Andrews and Bonta implicate: "Our group already "knew" by the early 1980s, from our own research and from narrative reviews of the literature by members of our group and by others, that social class of origin and personal emotional distress and mental disorder were minor risk factors at best" (Andrews & Bonta, 2010, p. 56). Therefore, in this study, the choice has been made to take these three risk factors into account as so called 'additional three'. The model has to be, indeed, complete in its assessment of antisocial behavior in general.

2.4 Emphasizing and the recognition of risk factors:

The central eight risk factors of antisocial or criminal behavior consist of eight categories that are rank ordered to their correlation with criminal behavior (see figure 2.4). All eight categories will be described in the next section of this paragraph, to provide information on recognition of these factors. A simplified version of the categories relating to criminal behavior is shown in figure 2.5. The big four are presented together with a 'decision to act' in the 'immediate situation' as a cause of criminal behavior.

The Immediate Situation

Antisocial Attitudes

Criminal History   Decision to Act ➡ Criminal Behavior

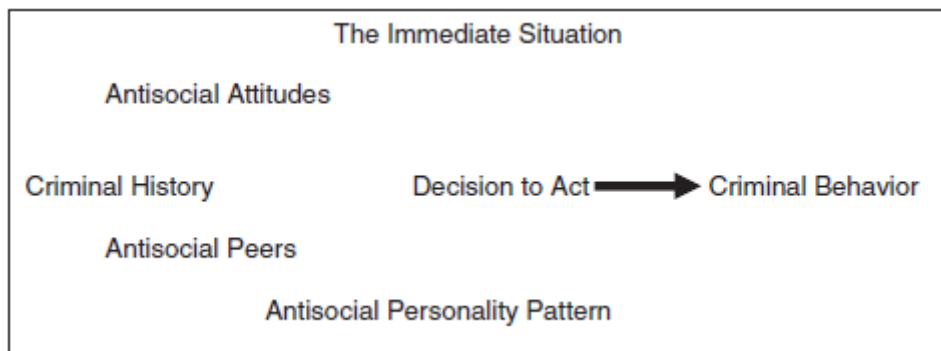Antisocial Peers

Antisocial Personality Pattern

Figure 2.5: The 'Big Four' and the decision to act in the immediate situation, leading to criminal behavior (Andrews & Bonta, 2010, p. 225)

The decision to act is influenced by the big four and the immediate situation. The presence of a large crowd, a police officer or a car that is not locked, are powerful facilitators of the decision to conduct antisocial of criminal behavior. Criminal history reflects a history of rewards for criminal behavior and becomes stronger and more automatic when the history is longer and more varied (Andrews & Bonta, 2010, p. 225). Antisocial personality traits like impulsivity, sensation-seeking and negative emotions are also favors in a decision to act like a criminal. The last dominant factors that influence the decision to act are antisocial peers and attitudes. All factors, including the rest of the 'central eight' plus all the minor risk factors are interrelated with each other. For instance: "A history of antisocial behavior greatly increases the chances that self-efficacy beliefs will be highly favorable to crime and, of course, is a direct indicator of the automatic strength of criminal response. Antisocial personality pattern suggests a range of supports for criminal activity, including weak self-control generally and a tendency to feel mistreated by others. These traits may result in problematic circumstances in a variety of settings, including home, school, work, recreational facilities, and the other portions of the community" (Andrews & Bonta, 2010, p. 247). All factors within the 'central eight' and the 'additional three' are described in the next section of this chapter.

Criminal history:
This factor is based on someone's history of antisocial behavior. This includes early involvement in a number and variety of antisocial activities in a variety of settings, such as at home and in home. Major factors include being arrested at a young age, a large number of prior offenses, and rule violations while on conditional release. The weight is on the seriousness of the current offense or the amount of injury imposed by the current offense. The latter is an aggravating factor at the time of sentencing, but that is not the same as being a risk factor. In risk assessment, the emphasis has to be placed on early onset and number and variety of offenses. The risk factor loses strength when antisocial behavior is absent or so rare that pro-criminal contributions to antisocial attitudes will be minimal. Dynamic need and promising intermediate targets of change are available when a history cannot be changed, but appropriate intermediate targets of change include building up new noncriminal behaviors in high-risk situations and building self-efficacy beliefs supporting reform ("I know what to do to avoid criminal activity and I know that I can do what is required") (Andrews & Bonta, 2010). The factors of criminal history are: negative contact with the police (in what way,

frequency, age and motive), arrested for a crime (in what way, frequency, age and motive) (Andrews & Bonta, 2010, p. 58).

Antisocial personality pattern:
Andrews & Bonta (2010, p. 193) describe 'Antisocial personality' as one of the best predictors of criminal behavior. In fact, this risk category is also used in other studies, using the same sub-factors but a different categorizing name. For instance: "OJJDP's Comprehensive Theory" calls it the 'individual factor' (Hawkins et al., 1998, p. 109; Wilson & Howell, 1993). The Antisocial Pattern subcomponent assesses the general personality and behavioral patterns associated with criminal behavior. The definition of antisocial personality pattern, according to the 'Psychology of Criminal Conduct', encompasses behavioral and personality characteristics that are relevant to the assessment and treatment of criminal behavior. This 'pattern' includes both personality facets and a pattern of law-violating and problematic behaviors, often evidenced earlier in life (Andrews & Bonta, 2010, p. 218). Personality encompasses traits and psychological processes that make sense of the situation of action. To understand behavior we need knowledge of the individual's personality traits (stable), the situation and the individual's characteristic way of encoding the situation (unstable) (Andrews & Bonta, 2010, p. 222). Personality traits can be described by five general dimensions called the 'big five' (Digman, 1990). According to Andrews and Bonta (2010, p. 194), not everyone agrees on the precise labels of the Big five, and they use the labels that have been edited by Costa and McCrae (1992; McCrae & Costa, 1999). Each dimension has its own sub traits or facets. The first dimension is neuroticism. This dimension consists of the sub traits: anxious, angry, hostility, impulsive. The second dimension, extraversion, consists of: positive emotions, excitement-seeking. The third trait is openness to experience and consists of: creative, open-minded and intelligent facets. The fourth and fifth traits, agreeableness (trustworthy, altruistic, and compliant) and conscientiousness (competent, orderly, and self-disciplined) are different from the first three traits. All traits have been tested in different studies by using cross sectional methodology with extreme groups like college students vs. prisoners. The studies found that both agreeableness and consciousness almost always differentiate antisocial individuals from pro-social individuals (Heaven, 1996; Miller, Lynam & Leukefeld, 2003; Samuels et al., 2004; van Dam, Janssen & De Bruyn, 2005; Wiebe, 2004). Next to the 'Big Five' personality traits of Digman (1990), other studies have also categorized personality traits, for instance: Moffitt's 'three factor model', consisting of constraint, negative emotionality and positive emotionality wherein the first two factors are most strongly associated with criminal behavior (Moffit, Lynam & Silva, 1994). In this study, offenders scored lower than non-offenders on the sub-factors of constraint. The sub-factors of constraint are traditionalism (endorsing high moral standards), harm avoidance (avoiding excitement and danger) and control (reflectivity and planfull). The offenders scored higher than the non-offenders on the sub factors of negative emotionality. The sub-factors of negative emotionality are aggression (causing discomfort for others), alienation (feeling mistreated) and stress reaction (expressing anger and irritability). Models of personality like the 'Big Five' (Digman, 1990) and the 'three factor model' (Moffit et al., 1994) consist of traits that are normal aspects of personality. The trait perspective emphasizes the stable, enduring features of personality (Andrews & Bonta, 2010, p. 197). However, we all know that there are times that we act differently than we usually do in specific situations. For instance, we do not know how we will react when there is an intruder in our own house. This perspective of personality is called the situational/psychological-processing perspective (Mischel, 1968), describing the unstable perspective of personality. Personality is no longer just a study of stable personality traits but also a study of dynamic psychological processes that can be seen as the mediators between traits and the exact situation of action (Andrews & Bonta, 2010, p. 198). A static trait for example is a parasitic lifestyle, a trait that has been developed over time. A dynamic trait is for instance impulsivity, acting before thinking. This trait can vary over time. The factors of an antisocial personality pattern are: impulsivity, adventure/pleasure-seeking, involvement in trouble, disregard for others, weak social constraint (low on traditionalism, endorsing high moral standards, low self-control, low on harm avoidance), negative emotionality (aggressiveness, causing discomfort in

others, alienation and feeling mistreated, stress reaction with anger and irritability), low agreeableness (hostile, jealous, self-centered, indifferent to others and antagonistic), low self-directedness (low on self-determination and willpower), interpersonal glibness, lack of guilt and a parasitic lifestyle (Andrews & Bonta, 2010, pp. 58-59).

Antisocial associates and attitudes:
Antisocial associates or antisocial peers and antisocial attitudes are closely related to each other. When someone is a member of a criminal gang, this influences his thought on criminal behavior thinking for instance that crime works. This section first pays attention to the role of associates. This major risk category can be broadly separated into two factors: The association with pro-criminal others and the isolation from anti-criminal others. Andrews and Bonta (2010) make four important points that suggest that poor parental control can be seen as a path to delinquent associates. First, they may actually model and reinforce antisocial behavior, while discouraging pro-social behaviors and attitudes (Newcomb & Loeb, 1999). Second, in families with (or parents who have) poor relationships and inadequate monitoring and disciplining, aggressive and other antisocial behaviors become established very early. This limits the development of the child's peer social network (Lacourse et al., 2006). Thirdly, poor emotional attachments with the parent(s) may leave the child emotionally underdeveloped and lacking in self-esteem (Andrews & Bonta, 2010, p. 227). The final point that Andrews and Bonta make is that opportunities to develop delinquent friends increase as the child becomes older and spends more time outside his/her house. If parents do not know or do not care with whom the child is spending time and associates, then involvement with delinquents or joining delinquent 'gangs' becomes more likely (Lahey, Gordon, Loeber, Stouthamer-Loeber & Farrington, 1999; Osgood & Anderson, 2004; Rebellon, 2002; Tolan, Gorman-Smith & Henry, 2003; Warr, 2005). Parents can thus be seen as very strong potential pro-criminal associates and their behavior and caring can function as a trigger for the child associating with criminal friends and/or gangs. The second factor, isolation of pro-criminal others, can also be seen as social exclusion. Social exclusion is closely related to low self-esteem. Mark Leary and colleagues (Leary, Tambor, Terdal & Drowns, 1995) conducted an experiment with undergraduate students and found out that the more participants felt excluded from their peer group, the lower their self-esteem. A decrease in self-esteem alerts one of being potentially excluded from social groups and may motivate to engage efforts to increase social inclusion in for example antisocial groups, promoting criminal behavior (Andrews & Bonta, 2010, p. 229). Risk factors of antisocial attitudes are association with criminal and pro-criminal others (for instance: criminal father, member of a gang) and the isolation of anti-criminal others (Andrews & Bonta, 2010, p. 59).

If we speak of attitudes, we speak of evaluative cognitions and feelings that organize the actor's decision to act and behavior towards a person, thing or action (Andrews & Bonta, 2010, p. 234). For instance, one may see cars as polluting, resulting in a behavior action, taking the bus instead. Antisocial attitudes are thoughts, feelings and beliefs that are supportive of criminal conduct (Andrews & Bonta, 2010, p. 234). An antisocial attitude is for instance if someone thinks that there is nothing wrong with cheating on income tax, thinking that it is all right to break the law. The origins of antisocial attitudes relating to criminal behavior can be seen in two different ways. First there is a failure in the development of a conscience (Freud's concept of lack of superego, conscience) or in moral reasoning (Kohlberg's theory of moral development, Kolbergh, 1958; Kolbergh & Candee, 1984), and second, there are the perspectives that highlight the social environment in shaping attitudes into a failure to understand what is right and what is wrong (Andrews & Bonta, 2010, p. 235). For example, Americans may have different attitudes toward work than Cubans do. Andrews and Bonta (2010) have classified the antisocial attitudes into three groups: the first is 'Techniques of Neutralization', also referred as 'rationalizations for law violations' or 'a vocabulary of motives for illegal action (Hartung, 1965). Sykes and Matza (1957) separated this category into five different techniques. 'The denial of responsibility' ("I couldn't help it", "it was an accident"), 'the denial of injury' ("I didn't hurt anyone", "I only borrowed the tape recorder"), 'the denial of the victim' ("he

deserved what he got"), 'condemnation of the condemners' ("Lawyers are no good", "the police are brutal"), 'appeal to higher loyalties' ("I didn't do it for myself"). According to Sykes and Matza (1957), offenders 'neutralize' the potential punishment associated with criminal behavior. Neutralizations, rationalizations and excuses just one set of antisocial attitudes that essentially deal with how to avoid society's and the self's recriminations. They allow the person to act outside of mainstream norms without giving up some believes in these norms (Andrews & Bonta, 2010, p. 238). The second category is 'identification with criminal others'. These are cognitions that reflect a criminal identity. It consists of attitudes like "I am tough", "I am trouble", "stuff happens", a signal of an increased likelihood of law-breaking (Andrews & Bonta, 2010, p. 239). The third category can be labeled as 'rejection of convention'. Negative attitudes toward pro-social activities minimize the importance of pro-social activities, but make crime a more favorable alternative activity. 'If you do not have a job or you do not like school, you have less to lose by adopting a criminal lifestyle' (Andrews& Bonta, 2010, p. 239). Risk factors of antisocial attitudes are: identification with crime and violence, identification with criminals and criminal behavior, negative attitude towards the law and justice system, a belief that crime will yield reward, and rationalizations that specify a broad range of conditions under which crime is justified ('victim deserves it')(Andrews & Bonta, 2010, p. 59).

The person seen in a social context:
This section of paragraph 3.5 treats three moderate factors of criminal behavior. Family/marital circumstances, circumstances in school and work, and circumstances in leisure/recreation. The section begins by describing the family and/or marital circumstances. The key to assessing both family of origin for young people and marital circumstances for older people is the quality of the interpersonal relationships within the unit (parent-child or spouse-spouse) and the behavioral expectations and rules in regard to antisocial behavior, including monitoring, supervision, and disciplinary approaches. In the assessment of youth, the two key parenting variables are nurturance/caring and monitoring supervision. On the part of the young people themselves, the assessment has to focus on the young person caring about the parent and caring about the parent's opinions. In the case of marriage (or its equivalent), the focus must be on a high-quality relationship (mutual caring, respect, and interest) in combination with anti-criminal expectations ("Do you know where your spouse is?"). The risk factor is poor-quality relationships in combination with either neutral expectations with regard to crime or pro-criminal expectations (Andrews & Bonta, pp. 248-262). The factor concerning school and work is emphasized on the quality of the interpersonal relationships within the settings of school and/or work. Generally, the risk/need factors are low levels of performance and involvement and low levels of rewards and satisfactions (Andrews & Bonta, 2010, p. 59, pp. 262-266). Leisure and recreation relating to criminal behavior, is classified by the appearance of low levels of involvement and satisfactions in anti-criminal leisure pursuits (Andrews & Bonta, 2010, p. 59, p. 66).

Substance abuse:
The last predictive factor of the 'moderate eight' is substance abuse, categorized as alcohol misuse and the use of illegal drugs (prescription drugs and tobacco are excluded). It consists of information on how substance abuse interferes in the areas of work, family, and personal self-regulation (Andrews & Bonta, 2010, p. 59).

The additional three:
These categories were: (1) lower-class origins as assessed by parental educational and occupational indices and neighborhood characteristics, (2) personal distress factors, including "psychological" measures of anxiety, depression, and low self-esteem as well as more "sociological" assessments of anomie and alienation (Andrews & Bonta, 2010, p. 62). The third category is (3) major mental disorder and consists of all official classified mental disorders resulting in deviant behavior.

2.5 Theoretical implementation of risk factors

The previous paragraph treated the definitions of the different factors of the central eight together with a 'how-to-indicate' description. In this section, the implementation and integration of risk factors into policy, according to theory (Andrews & Bonta, 2010; Loeber & Farrington, 1998[a]) will be described. There are different ways and strategies to discover, assess or indicate risk factors, using different instruments. According to Le Blanc (1998) the first screening instrument was that of Glueck, invented in 1950 (Glueck & Glueck, 1950). The screening method selected one source of information, the interviewer who visited the subject's family and collected date on one risk factor, namely: family circumstances (Le Blanc, 1998, p. 179). After this first screening strategy, other strategies and screening methods have been proposed and developed very rapidly, using multiple-stage strategies (Kvaraceus, 1953), multiple domains of variables like personality and family (Briggs, Wirt & Johnson, 1961), and multiple informants like a teacher and the subject (Le Blanc, Marineau, Fréchette & Limoges, 1971). Loeber, Dishion & Patterson (1984) created a multiple-stage stragegy with multiple informants, multiple methods, and multiple settings. Loeber et al. (1984) developed a procedure consisting of three different information channels, which involved the subject (in their research, a child), the teacher and the mother. The procedure also consisted of three sets of data, that is, a teacher's rating of eleven child behaviors; six short telephone calls on family organization, whereabouts of the subject, and the subjects' problem behavior; and measures of disobedience and monitoring (the interviewer reports impressions of mother and subject), costing a total of three hours and twenty minutes professional time (Le Blanc, 1998, p. 179). These are examples of screening strategies, combining different components like face-to-face interviewing, phone-interviews but also using different settings and informants. Yet, collecting data from three different sources does not provide information on a history of violence or mental health issues. The implementation of risk factors needs a combination of different instruments in different dimensions. Interviewing the subject and persons related to the subject is one of these dimensions. The trick is to find an instrument that uses the different dimensions in such a way that all risk factors, mentioned in this chapter, are covered. First, I want to illustrate how Andrews and Bonta (2010) separate different styles of screening methods or risk assessments: first-generation assessments (based on professional judgment like for instance clinical assessments), second-generation assessments (based on static risk scales), third-generation assessments (based on a combination between risk and need factors, or: static and dynamic risk factors) and fourth-generation assessments (the same as third-generation assessments including case management, focusing on prevention and rehabilitation). This separation of different generations not only illustrates the history of risk assessments but also the integration of more dimensions, consisting of dynamic risk and need factors (Andrews & Bonta, 2010).

To summarize the above text, the assessment of risk factors comes with different instruments used in different dimensions. These dimensions consist of a variety in informants, methods, and settings. A variety of instruments can be found in the following list. In-depth interviewing, surveys, psychological tests, use of police information, doctoral declaration of mental and/or physical health (also mentioned in chapter 2.4 in the German legislation). In the following section, an overview will be given of all the risk factors (the central eight, with special attention to the big four, and the most important minor risk factors) combined with the, according to theory (Andrews & Bonta, 2010; Loeber & Farrington, 1998[a]; Onderzoeksraad voor Veiligheid, 2011) most matching instruments.

To begin with a history of antisocial behavior, let us recall the factors of this risk category, mentioned in the previous paragraph of this chapter: Negative contact with the police (in what way, frequency, age and motive), arrested for a crime (in what way, frequency, age and motive). To gather valid information, multiple data sources have to be used. Data sources could consist of an in-depth interview with subjects and subject-related persons, but also data from official police information. In interviews, subjects regarding information on the recognition of risk factors have to be mentioned. For instance: a question could be: "have you ever been incarcerated?", "at what age have you

committed you first crime?" The scoring of criminal history information reflects the density of rewards associated with criminal behavior. An early onset and a long history of criminal behaviors increase the likelihood of re-offending (Andrews & Bonta, 2010, p. 322). Police information consists of information regarding a subject's criminal past. The Dutch police force makes use of different information systems, providing information on different levels (homicide information cannot be seen by an executing officer who normally treats traffic antecedents). With this information, a history of antecedents, registered by the police, can be requested.

The antisocial personality pattern consists of many risk factors. These are both static and dynamic factors, varying from impulsivity to a parasitic lifestyle. All are traits that need to be assessed. Psychic clinics make use of clinical classification systems, like for instance the DSM-IV or the PCL-R. DSM-IV or Diagnostic and Statistical of Mental Disorders (American Psychiatric Association, 1994; Andrews & Bonta, 2010, p. 204), describes behavioral patterns and psychological characteristics that are clustered into diagnostic categories. For example: someone with auditory hallucinations, bizarre delusions (e.g. a pet dog controlling the behavior of the person), and a history of these delusions and hallucinations lasting more than six months is likely to be diagnosed as schizophrenic (Andrews & Bonta, 2010, p. 204). PCL-R (Hare's Psychopathy Checklist-Revised) is an assessment of psychopathy conducted by Robert Hare (2003) assessing 20 personal characteristics using a three-point scale from "0" for not applicable, "1" for uncertain, and "2" for definitely present (Hare, 2003; Andrews & Bonta, 2010, p. 208). These two assessment instruments can both be categorized as a first-generation assessment because they consist of static predictors, assessed by clinical personnel using only the subjects' data. David Simourd and Robert Hoge conducted the LSI-R (Level of Service Inventory-Revised, Simourd & Hoge, 2000), a third-generation instrument assessing both static and dynamic characteristics. To assess antisocial personality pattern, different generations of assessments can be used. However, they have to be used in a multidimensional way. For instance, a potential perpetrator can be interviewed to score the LSI-R-scale, but information for scoring this scale must also consist of data from subject-related persons like a mother/father, employer and/or, teacher, to increase the strength of validity of this information.

Antisocial cognition or antisocial attitude is indicated by: identification with crime and violence, identification with criminals and criminal behavior, negative attitude towards the law and justice system, a belief that crime will yield reward, and rationalizations that specify a broad range of conditions under which crime is justified. The assessment of this factor varies from qualitative interviewing and questionnaires to structured paper-and-pencil measures that were empirically validated. The previous paragraph has already explained the neutralization techniques that are used in antisocial attitudes. One of the earliest measures of neutralization is Ball's (1973) neutralization scale. The scale consisted of four scenarios (two assaults, an armed robbery, and shoplifting), followed by 10 neutralization statements for each scenario. Subjects are asked to rate each neutralization on a five-point scale from "strongly agree" to "strongly disagree" (Andrews & Bonta, 2010, p. 240). Another instrument of measuring identification with criminal others is the Pride in Delinquency Scale (Shields & Whitehall, 1994), presenting ten criminal behaviors that have to be rated by a 20-point scale from -10 ("very ashamed") to +10 ("very proud"). A third instrument that is used to measure antisocial attitudes is the CSS, or Criminal Sentiments Scale (Andrews & Wormith, 1984). This instrument uses three techniques of neutralization, consisting of forty-two items that have to be rated on a 5 point Likert-scale from 'strongly agree' to 'strongly disagree'. Again, using these instruments in a multidimensional perspective, it provides more information on the subject's antisocial attitude.

Information on antisocial associates, family/marital circumstances, school/work, and leisure/recreation, carry somewhat the same risk factors. These factors pay attention to the quality of relationships or performances but also mention the absence of some important social factors, like for instance: the absence of a social life with good friends, indicating isolation from pro-social others.

All these factors can be measured by doing in-depth interviews and scoring risk assessments like the LSI-R. However, they differ in the context of subject-related persons. In case of assessing family circumstances, a family member, closely related to the subject, has to be interviewed, while in case of work conditions, an employer has to have the function of informant to score the risk assessment.

In the Alcohol/Drug Problems area it is not simply a matter of whether the offender has a substance abuse problem but instead it should be understood how the problem contributes to criminal behavior. Thus, the interviewer collects information on how substance abuse interferes in the areas of work, family, and personal self-regulation (Andrews & Bonta, 2011).

2.6 Conclusion

This chapter ends with a conclusive section and gives an answer to the descriptive sub-questions of this subject of antisocial behavior in combination with risk factors. First, a short summary will be given in the same set-up as it has been described along the different paragraphs, from the broad perspective of antisocial behavior to the importance of risk factors. After this short summary, the two research questions will be answered in a resumptive way according to what is described in all previous paragraphs: the risk factors according to a uniform model, which will used as a key-aspect in this study, and the applicability of this model according to theory to create knowledge on the integration of risk factors in policy.

If you want to specify risk factors of antisocial behavior or criminal behavior, you first need to know what criminal and antisocial behavior is, where it comes from and in which forms "Criminal behavior refers to antisocial acts that place the actor at risk of becoming a focus of the attention of criminal justice professionals within the juvenile and/or adult justice systems". This working definition of criminal behavior fits exactly in the scope of this study. It shows the broad perspective of criminal behavior, speaking of antisocial acts as a fundament for criminal, antisocial, unwanted behavior. The definition describes what it is according to law. Theories from different study fields like criminology; psychology; and sociology, try to understand antisocial behavior. Four theories have been described and give an indication on the roots of antisocial behavior, varying from Freud's psychodynamic theory (weak self-control as a variable of antisocial behavior), Social location theories (focusing on personal distress because of lack in performance or success as a variable of antisocial behavior), differential association theories (focusing on antisocial cognition, about what people think is okay, attitudes about behavior). These theories can be combined into one general personality and social psychology approach, the foundation for a risk factor model on antisocial behavior.

Antisocial behavior is a dynamic concept. It has been made clear that antisocial behavior differs in acts. A thief will probably follow another 'pathway to crime' than a person who is generally known as a trouble-maker and fights a lot. These persons think different and also carry different risk factors. It is important that a risk factor model includes all risk factors, from psychological lying to bullying (both defined as an antisocial personality pattern). A criminal pathway varies in different variables. Age of offending (variety in early and late starters, remember the risk group from eighteen year old to twenty-five year old), type of offending (overt behavior, like aggressiveness; covert behavior like committing fraud), seriousness of offending (from non-serious offending to serious offending to violent offending) and of course, frequency is very important (repeating offenders higher the risk).

Phase one is about the importance of risk factors to assess potential 'not-wanted' behavior. The leading question that has been asked is: *What are according to scientific research, risk factors that relate with or cause antisocial behavior?* This question can best be answered by drawing it in a model of risk factor categories. A combination between different factors not only tries to predict antisocial behavior, but also tries to define potential risk. There are eleven categories, or main factors, that

relate with antisocial behavior. The categories are: *'History of antisocial behavior'; 'Antisocial personality pattern'; 'Antisocial cognition'; 'Antisocial attitudes'; 'Family/marital circumstances'; 'School/work circumstances'; Leisure/recreation circumstances'; 'Substance abuse'; 'Personal/ emotional distress'; 'Major mental disorder'; 'Social class of origin'.* All categories consist of sub-factors that are used to indicate the strength of a risk factor, distinguishing static risk factors (mostly historical events/attitudes) from dynamic risk factors (changeable events/attitudes). These factors are developed from both theoretical models and empirical research. Figure 2.6 on the next page shows the model as it has been described above.

"Central Eight"		
"The Big Four"	**1. History of Antisocial Behavior**	**5. Family/Marital Circumstances**
	Static: involvement of antisocial activities Dynamic: frequency of activity; age of onset	Static: historical events regarding quality and antisocial expectations Dynamic: quality of parent-child relationship, quality of spouse-mouse relationship, anti-criminal and antisocial expectations
	2. Antisocial Personality Pattern	**6. School/Work Circumstances**
	Static: involvement in trouble, disregard for others, parasitic lifestyle Dynamic: impulsivity, adventure/pleasure-seeking, negative emotionality (aggressiveness, causing discomfort in others, alienation and feeling mistreated, stress reaction with anger and irritability), weak social constraint (low on traditionalism, endorsing high moral standards, low self-control, low on harm avoidance), low agreeableness (hostile, jealous, self-centered, indifferent to others and antagonistic), low self-directedness (low on self-determination and willpower), interpersonal glibness, lack of guilt	Static: Low levels of performance, low levels of rewards, Dynamic: low levels of involvement, low levels of satisfaction
	3. Antisocial Cognition	**7. Leisure/Recreation Circumstances**
	Dynamic: identification with crime and violence, identification with criminals and criminal behavior, negative attitude towards the law and justice system, a belief that crime will yield reward, and rationalizations that specify a broad range of conditions under which crime is justified	Static: Low levels of involvement in antisocial and anti-criminal leisure pursuits, low levels of satisfaction in antisocial and anti-criminal leisure pursuits. Dynamic: Age of onset and frequency of involvement in anti-criminal activities
	4. Antisocial Associates	**8. Substance Abuse**
	Static: association with criminal and pro-criminal others, isolation of anti-criminal others Dynamic: frequency, amount and age of onset of association	Static: recentness of problems with alcohol, and problems with drugs Dynamic: frequency of problems with alcohol, and problems with drugs

"The Additional Three"
9. Major Mental Disorder
Static: history and type of mental disorder Dynamic: frequency and type of mental disorder
10. Social Class of Origin
Static: (parental) education, (parental) occupation Dynamic: neighborhood characteristics
11. Personal/Emotional Distress
Static: history of personal/emotional distress Dynamic: frequency of measures of anxiety, depression, low self-esteem, anomie, alienation

Figure 2.6: Risk factors of antisocial behavior

Figure 2.6 will be the leading model on risk factors in this study. This model is complete for assessing and estimating antisocial behavior in general. By scoring different static and dynamic risk factors, the strength of risk for antisocial behavior can be determined. This is where the second research

question of phase one is about, the theoretical application of risk factors and the implication of this model with its risk factors into policy.

How can risk factors be recognized and theoretically be applied to policy?
This question is already partly answered by the risk model in figure 2.6. The model shows static and dynamic risk factors in eleven risk categories that have been concluded from the answer to the first research question. Static risk factors are stable and change little over time, while dynamic risk factors do change over time. The model works in a way that the more risk factors are recognized in a category, the stronger a risk category is. Also a combination between different factors and risk categories makes the risk higher, or greater. For example, when someone behaves impulsive, this does not mean he or she exhibits antisocial behavior. However, when this dynamic risk factor of an antisocial personality pattern is combined with a weak social constraint, problems with alcohol and an involvement of antisocial activities in the past, the risk of potential antisocial behavior becomes higher. Thus, the indication of multiple sub-factors increases the potential risk and the combination between different risk factors also increases the potential risk of antisocial behavior. The second part of this research question is on the theoretical applicability of risk factors. In general, this question can best be answered by taking validity into account. The answer is simple, using different instruments in different dimensions. The more variety, the more validity. Instruments are tools to collect data of a specific risk factor or multiple risk factors. Instruments to collect data can be:
- Risk assessments
- survey's
- psychological tests
- use of police information
- doctoral declaration

Dimensions consist of three categories. The first one is the type of informant; data source; or information channel/gate, for instance: an information channel can be the subject himself, a family related person, or a work-related person. The second category is the method of data collection, for example: (semi-structured) in-depth interviewing can be the method to collect data on risk factors from a data source. The last category is the setting, or data set. An example is the screening process for novice police officers. In this data set different instruments and data sources are combined. A screening makes use of an interview with the subject and information from police sources and consists of different settings. To apply the risk model of figure 2.6, data have to be collected of all eleven risk factors, making it more valid by using multiple information channels.

Multi-functionality of the 'risk factor model' assessment of policy:
A second function of the model in figure 2.6, next to the prediction of antisocial behavior and the assessment of someone's potential risk of involvement in antisocial behavior, is the analysis of policy. The second phase of this research focuses on legal gun ownership. It focuses on legal gun legislation with respect to science-based risk factors. In chapter 1.2, the scope of this research, already a small part of the Dutch gun legislation that respects the 'risk factor'-part has been presented: the 'no fear for abuse criterion'. The pathway to legal gun ownership will be described in the second part, comparing Dutch legislation with foreign legislation. The risk factor model of phase one will be used as a tool to assess the extent to which legislation reflects risk factors. Also the tools or instruments that are used in Dutch and foreign policy to 'discover' risk factors will be compared with the model to prove its completeness. In this way, the model is used as a policy analysis tool that tests and compares foreign and Dutch gun policy with respect to the concept of risk factors. Also the application of risk factors will be highlighted by making use of the variables that are concluded above: instruments; information channels; methods; and settings. Together with the risk factor model, these variables will from now on be called: 'the analyzing variables'.

3. Risk factors in legal gun legislation

3.1 Introduction

Control legal gun ownership and fight against illegal gun ownership. These were the main objectives of the in 1989 introduced Dutch Gun Law (Wet Wapens en Munitie, Wwm). These are broad objectives which were reconsidered due to: experience in execution over years, the rise of gun crimes in the nineties and political and public sensitive incidents and international developments of gun legislation. In the past decade there have been several incidents with legal guns involved. Next to the Alphen incident, as described in chapter one, there have been eight other incidents in the Netherlands since 1999, together resulting in a total amount of twenty-one deaths (Onderzoeksraad voor Veiligheid, 2011). Compared to the amount of fatal victims of gun crimes in the period of 1999-2009, a total amount of five hundred fifty-four with an average of more or less fifty-five deaths a year, this means that three percent of the victims are killed with a legal weapon (Onderzoeksraad voor Veiligheid, 2011). Nevertheless, given the fact that three percent is a small amount of incidents, the effect of an incident like the one occurred in Alphen proves that there are holes in the system that require improvements.

The Dutch policy for legal gun ownership is meant for somewhat more than fifty-nine thousand legal gun owners in the Netherlands, including both shooting sport practitioners and hunters. The gun policy has to make sure that risks relating to gun ownership are being controlled (Onderzoeksraad voor Veiligheid, 2011). To control these risks, the policy makes use of different instruments, like for instance: a safe for keeping guns under prescribed conditions (Cwm, 2012).

Phase two of this research will focus on legal gun legislation. It describes the foreign regulation and compares it with the Dutch regulation at various points with the main focus on science-based risk factors, using the risk factor model of phase one as a comparing tool. This chapter tries to find answers to the second subset of questions, regarding the comparison with foreign countries, the pathway to Dutch legal gun ownership and the problems, weaknesses and shortcomings of the legal gun law according to the literature analysis of policy documents.

3.2 Foreign policy

This paragraph elaborates on the legislation on legal gun ownership and legal gun policy of four different countries. The countries are selected according to their dynamics in legislation due to violent incidents with legal guns. These countries are also briefly described in the research of the Dutch Safety Board (Onderzoeksraad voor Veiligheid, 2011). For each country a short description of the formation and recent changes in legislation will be presented. Next, a concise description will be given on how a gun license is possessed, focusing on how risk factors are respected within these regulations. After the elaboration of the legislation of the four countries, a comparison table will show the differences between various points in regulation of the different countries. This table will show the fundamental information on the analyzing variables (risk factors; instruments; information channels; methods; and settings) that will be used in the concluding section of this chapter to compare Dutch regulation with foreign regulation.

Belgium:
The first country that will be elaborated is Belgium. After the shooting incident in Antwerp at May eleven in 2006, where an eighteen-year-old man killed two persons in a public area, the Belgian gun legislation has directly been improved. The man had racist motives and collected his firearm at a local gun store, right before the incident (Onderzoeksraad voor Veiligheid, 2011).

Before the changes in 2006, the Belgian gun law was based on the legislation that was made in 1933. One of the main rules until the change was that the free sale of guns without registration was allowed. Only a purchase had to be registered at the local police force (Bervoets, 2009). To reduce impulse purchases and improve public safety, after the change in 2006, a license had to be possessed to own a gun instead of only registering the purchase of it (Onderzoeksraad voor Veiligheid, 2011). The main change in legislation is that a citizen can only purchase and/or posses a gun, if he or she is a licensed shooter or hunter.

To obtain a gun license, one first has to meet the personal requirements. These requirements state that one has to be at least of age eighteen, has no convictions, has never been hospitalized in a psychiatric institution, has no former gun license refusals or withdrawals, is medically proven to be capable with a medical certificate given by a doctor and finally has to have both theoretical and practical knowledge of guns, gun-usage and the gun law.

A license is possessed if an applicant meets the above stated requirements and has completed the following process to obtain a license. The process starts with a request at the provincial weapon service to consult the personal requirements and safety related concepts. First, the applicant has to deliver a medical certificate that states that he is physically and mentally healthy. Someone who is a drug addict cannot get a medical certificate, the same goes for one who is suffering from depression. A medical certificate can be given by a general practitioner and may not be older than three months. A certificate can only be given if a doctor is fully aware of his patient's mental and physical state and is sure of one's capability (Onderzoeksraad voor Veiligheid, 2011). There is a great responsibility for the treating doctor because if an incident happens, it could be because of an incorrectly given medical certificate. Next to the medical form, a proof of a correctly passed exam has to be delivered to make sure that one has enough knowledge of legislation and gun-usage. An applicant must also give a legal reason to possess a gun. Reasons can be: hunting activities, shooting sport, professions like bodyguards with special risks, personal protection, gun collector, participation in historical events. The last item that has to be discussed is the approval of roommates. Adult roommates have to give a written approval that they are aware of one's gun ownership and that they agree with it. The process continues with a background check of the local police force. This check contains the presence of earlier antecedents and the relational atmosphere within family and neighborhood. If there are no complications in the process, a gun license can be obtained. This license has no limited validity but is being checked every five years, or less if necessary, on morality and expediency. The responsibility of this five-year check lies within the province. It contains a background check and a house visit for meeting the safety requirements. The local police force will start an investigation if threats to public safety are reported. One's license can then be withdrawn or restricted (Onderzoeksraad voor Veiligheid, 2011).

The process to obtain a license in Belgium is arranged in such a way that several risk factors are covered. The implementation of a medical certificate in the application of a gun license gives insight in risks for physical and mental illness until three months before the license request. Another barrier is the approval of roommates. Roommates are close to any potential threats or misconducts of the license holder, and will receive dangerous signals earlier than the police. Personal requirements ensure that the applicant has never been in a psychiatric institution and has no earlier convictions.

Germany:
The second country, also directly located next to the Netherlands, is Germany. Germany knows two shooting incidents that are related to changes in gun legislation. In 2002 a nineteen-year-old man killed 16 people and injured 7 persons at the Gutenberg-Gymnasium in Erfurt. After this horrible deed, he directly committed suicide (Gasser, Creutzfeldt, Näher, Rainer & Wickler, 2004; Onderzoeksraad voor Veiligheid, 2011). In 2009, a seventeen-year-old boy, again at a school, killed

sixteen- (including himself) and injured six persons (BBC News, 2009; Onderzoeksraad voor Veiligheid, 2011).

The roots of the German gun law, also called 'Waffengesetz' (Bundesministerium der Justiz, 2012), lie in the 'Law on Firearms and Ammunition', enacted in 1928. Citizens were required to have a license to possess a gun and had to be at least of age twenty. Later, the precursor of weapon law suspended the 1928 law and enacted the 1938 German Weapons act. One of the main changes was that the age at which persons could own firearms was eighteen instead of twenty. After World War II, the allied forces made a rule that private ownership of guns was not allowed by anyone. This standard lasted until 1956, when the legal status returned to that of the 1928 regulation (Harcourt, 2004). Major changes in gun regulations followed after the shooting incidents in 2002 and 2009. The legislation has been changed by adding a required psychological evaluation for persons under the age of twenty-five.

The personal requirements to obtain a gun license in Germany are: one has to be at least of age eighteen, must be trustworthy and have personal talent, can show that he or she meets the required specialized knowledge, can show necessity of owning a firearm and is in possession of a liability insurance (covering up to one million euro). The applicant has to deliver different requirements. These requirements consist of an application form including a statement if the applicant has a medical or psychological history. To show one's skill, a declaration consisting the amount of shooting rounds with a minimum of eighteen a year and one in a month. Also, the applicant has to be a member, for at least one year, of a licensed shooting club and has to deliver an approval of that specific shooting club. Next to these requirements, the applicant has to hand in a medical/psychological declaration, only if he or she is below the age of twenty-five or if there are special reasons to do so, like for instance: if there are doubts about his or her capability. Also, persons younger than twenty-five have to hand in a declaration that they are mentally capable to own a firearm (Onderzoeksraad voor Veiligheid, 2011; WaffG, 2002).

The German legislation covers risk factors in different ways. An applicant may not have a history of psychological treatment and if an applicant is of age below twenty-five, he or she has to deliver a medical/psychological declaration. According to the age crime curve of Farrington (1986; Blumstein, Cohen and Farrington, 1988, p. 11), criminal behavior is most present at the ages between eighteen and twenty-five, "the emerging adulthood" (Arnett, 2000; Blonigen, 2010, p. 2). The ages between eighteen and twenty-five are considered to be a risk group and are given more special attention.

Finland:
Finland knows three shooting incidents in the past years that created changes in legislation. The first incident was a murder-suicide of an eighteen-year-old student in Jokela where he killed eight people (BBC News, 2007; Onderzoeksraad voor Veiligheid, 2011). In the second incident, at a school in Kauhajoki, a young adolescent killed eleven persons and killed himself directly after the deed (BBC News, 2008; Onderzoeksraad voor Veiligheid, 2011). In 2009 a middle-aged man killed five people in public and then committed suicide (Onderzoeksraad voor Veiligheid, 2011). Directly after these incidents, the Finnish government decided to implement the rule that an applicant of a gun license has to hand in a doctor's declaration which states that one is declared psychical healthy (Onderzoeksraad voor Veiligheid, 2011)

Gun ownership and the application of a gun license are regulated in the 1998 Fire Arms Act. After the school shootings, necessary changes have been made to different aspects of the gun law. For instance, the minimum age to possess a handgun has been increased to twenty. In 2011, medical practitioners are required to inform the police if they believe that someone is not capable of owning a gun.

The personal requirements for an applicant are the minimum age of eighteen and based on his/her health and behavior, the capability of possessing a firearm. An application is requested at the police force. The process starts with a personal interview to indicate the capability of this person. Next to this interview, an applicant has to participate in a psychological test. This test is developed by the Finnish army (NOS Nieuws, 2011; Onderzoeksraad voor Veiligheid, 2011) and tries to reveal someone's predisposition for violence, aggressiveness, and threat to public order.

There are three important ways in Finland to indicate risks. The most innovative manner is the psychological test that has to be taken from the license applicant. In this risk assessment, which can be seen as an instantaneous image of the mind, risks of antisocial behavior are been determined and are together with a personal interview, considered to scale someone's fear for abuse. Another way to indicate risks is by doctor reports. A medical practitioner is required to report to the police, if he thinks that his patient has for instance: delusions. If the general practitioner believes that his patient is a (potential) threat to society, he has the responsibility to inform the police.

Norway:
Due to the recent happenings on the island of Utoya calls are going out for stricter gun control in Norway (Berglund, 2011). On July twenty-two, a thirty-two-year-old man killed a total amount of seventy-seven people. Sixty-nine people were killed with two semi-automatic rifles. The Norwegian gun law made it possible for him to buy both weapons and ammunition (Frosch & Johnson, 2012; Onderzoeksraad voor Veiligheid, 2011).

The last time that the regulation has been changed was in 2009. The roots of the regulation lie in the 'Lov om Skytevapen og ammunisjon 1961' (Justus- og beredskapsdepartementet, 2012). Gun ownership is not allowed for Norwegian citizens unless they meet the specific requirements.

The specific requirements to gain a gun license consists of a minimum age of sixteen for a hunting license and a minimum age of twenty-one for a gun license meant for shooting sports. An applicant may not have any convictions and must have a legal written reason why he or she wants to obtain the license. Also the applicant has to be both theoretically and practically skilled. In case of the license for shooting sports, an applicant has to be a member of a registered shooting club. In this membership the applicant also has to follow fifteen training courses to show that he or she is capable to obtain a license. The declaration of capability and the results of the theoretical exam have to be delivered to the local police force. The police force will check criminal and psychic history with a personal interview.

The only way to locate risks in Norway is a personal interview before an applicant gets his or her license. In this interview, the police interviewer investigates criminal and psychic/psychological history to estimate risks of abuse.

Comparison:
The comparison table at the next page gives an overview of different subjects that are mentioned in the above topics. These subjects are variables that influence the legal gun regulation in the four different countries. This table will be used to compare foreign regulation with the Dutch regulation and will provide theoretical input on the integration of science-based risk factors in legislation in practice.

	Belgium	**Germany**	**Finland**	**Norway**
Gun ownership allowed	No, unless:	No, unless:	No, unless:	No, unless:
Personal requirements	18+, no convictions, never in a psychiatric institution, no refusals/withdrawals, medical capable	18+, capability declaration (until 25), reliable, no convictions	18+, 15-18 parallel license (parental permission), capable, reliability test	16+ for hunting, 21+ for shooting sports, declaration of capability
Assessing capability	Theoretical and practical exam	Meeting required specialized knowledge	Personal interview about health and behavior	Theoretically and practical exam
Assessing reliability	Criminal history check, relational sphere, allowance by roommates	Criminal history check, capability declaration (until 25), one year member of shooting club	Reliability test (psychological test)	Criminal and psychological history check
Use of soft information	Passive. Information is investigated by the police	Passive. Information is investigated by the police	Passive. Information is investigated by the police and soft information on social sphere must be verified	No information available
Medical documents applicant	On license request and during investigation: medical certificate from a general practitioner (not older than three months)	During investigation: medical certificate stating that the licensee is mentally healthy	Negative reliability test and during investigation: medical certificate. Mandatory pronouncement from treating doctor if fear for abuse	No information available
Validity	Unlimited validity	First: one year. After: unlimited validity	First: five years. After: unlimited validity	No information available
Extension	Every five years: morality check, criminal history check and house visit	Every three years: demonstrate necessity, criminal history check	Every five years: demonstrate necessity, declaration of active shooting club membership	No information available
Safe control	Every five year	Only if necessary for investigation	No information available	No information available
Policy evaluation	No formal rules. Two-monthly meetings between the province and ministry of justice and after political questions	No	No	No information available.

Table 3.1: comparison between foreign countries: Belgium, Germany, Finland and Norway. Original source: Onderzoeksraad voor Veiligheid (2011)

3.3 Current policy in the Netherlands

In this chapter, a description of the process to legally own a gun in the Netherlands is given. Step by step, for both hunting- and shooting purpose, the process of how to obtain and keep a decent license is presented.

Let's start with some juridical information on the legal way to possess one or more guns. The Dutch Gun Law (Wet Wapens en Munitie, Wwm) determines that it is illegal to own a gun for private purposes. However, the law makes an exception for people who are in possession of a gun- or hunting license. A license is given when an applicant meets the required conditions that are described in the Dutch gun law and when there is no threat for excessive behavior. Guns can be owned and used for different reasons, like: professional shooting, hunting, historical collection, sale, and etcetera. The gun law is divided into three parts: First the formal law (Wet Wapens en Munitie, Wwm); second the ministerial regulation (Regeling Wapens en Munitie, Rwm); and third a policy document on the instruction about the implementation of both law and regulation (Circulaire Wapens en Munitie, Cwm) (Onderzoeksraad voor Veiligheid, 2011). Next to the gun law there is also the 'Flora- en Faunawet' or 'Ffw' (Ffw, 2012). This law is especially meant for hunters and describes exactly which species may be hunted and which species are protected (Onderzoeksraad voor Veiligheid, 2011).

The process scheme in figure 3.1 describes generally how a gun license is possessed. The process from step one, 'affinity with guns', to the last step 'legal ownership', is shown and will be elaborated in the upcoming paragraphs.

How to obtain a gun for shooting sports:
In order to possess a gun that is meant for shooting sports, both professional and hobbyist must request a gun license at the chief constable of the police area of where he or she is living. It is important that the applicant meets three criteria (WvSr, 2012; Cwm, 2012, art. 1.4.1.3; Onderzoeksraad voor Veiligheid, 2011):
- The applicant has to be eighteen years or older
- The applicant must have a reasonable interest to possess a weapon
- There is no fear for abuse.

To meet the expectation of having a reasonable interest, a potential shooter has to become a member of a shooting club. This shooting club must be recognized, regulated and licensed at the KNSA. After one year of membership, the potential shooter can request a gun license at his chief constable of the police area. If the request is approved, the shooter can purchase one weapon. If the request is declined, an appeal can be made.

Become a member of a shooting club:
The first step to legally own a rifle is becoming a member of a KNSA-licensed shooting club. The KNSA has written a strict procedure to first gain a good image of the person who requires a gun license and secondly to make sure the person fits the appropriate profile to become competent in shooting a gun. The process consists of four stages:
1. Filling in an application form with a copy of your passport and deliver a declaration of good behavior (VOG).
2. Trial time of one month with a minimum of four visits at the club. Personal interviews are executed by board members.
3. Prospective membership for at least six months. Becoming competent in shooting guns and successfully completing the proficiency test.
4. Once passed the aspirant membership, membership of the licensed shooting club is possible.

When someone is allowed to become a member of a shooting club, he/she is given a KNSA-license, which gives him/her the right to practice with guns that are owned by the shooting club.

Gaining a gun license for shooting sports:

To possess a gun for shooting sports, one must request a category III gun license (for revolvers, pistols and rifles). The license gives the person the right to own, transport and use a gun together with the related ammunition. The license that is given by the chief constable of the concerning police area is valid for one year and can be extended each year. The applicant has to meet all the following conditions:

1. There is a reasonable interest to possess a weapon (the person has shown enough discipline in his membership time);
2. The applicant has been a recognized member of a shooting club for at least one year and is in possession of a KNSA-license;
3. The applicant is at least 18 years old;
4. The applicant meets the required minimum amount of eighteen shooting sessions;
5. There is no danger for oneself, public order or public safety.

To verify the conditions 1,2,4, the license request is signed by the shooting club with the addition of: the starting date of the applicant's membership, the amount of registered shooting sessions, a declaration of competence and a declaration of the main purpose of use within the shooting club.

Condition five is judged by the department of Special Laws of the police force in the specified police area by conducting a background investigation and a visit to the applicants' house. The background investigation checks if a request can be declined on the basis of three objectively verifiable conditions: Fear of entrust ownership; Fear of abuse; Urgent, public interest reasons. These conditions are being checked by looking at the history of legal offenses. To decline a license request, the data consists at least of one of the following facts:

- The applicant/holder is placed in a psychiatric hospital within the past eight years because of criminal behavior.
- The applicant/holder is sentenced by the court in the past eight years for:
    I. A crime with imprisonment as a result.
    II. A crime involving violence or threat of violence.
    III. A crime or offence within the Wwm.
    IV. A crime or offence within the Opium law.
- The applicant/holder sentenced by the court in the past eight years for committing a crime resulting in community service or a fine.
- Data consists of the following risk increasing 'soft information':
    V. Dismissals and official report.
    VI. Psychological condition.
    VII. Criminal activities.
    VIII. Fear of abuse by others.

Once the historical check is clear, a visit to the applicant's house is made by a member of the police force. The police officer checks if the space reserved for keeping the guns under safe conditions meets the prescribed requirements. This visit also offers the opportunity to observe the living conditions of the applicant for possible further investigation (no house warrant). If both the background investigation and house visit are approved, the chief constable decides if the applicant meets condition number five: no danger for oneself, public order or public safety. At this point the gun license, valid for one year, can be given to the applicant together with a license of acquisition to buy a gun at a legal gun dealer. Once the applicant has bought the gun, he or she legally owns a gun and can use it for the prescribed purposes. After one year the gun license has to be extended. This is done by following the same procedure that is used by approving a license for the first time.

In case of refusal:

If the applicant does not meet all the expected conditions, the chief constable is forced by law to decline the request in the following order:
- The refusal is in accordance with the General Administrative Law (Awb, 2012);
- Inform the applicant of the refusal and his right to withdraw his request;
- In case of a withdrawal, the KNSA is not informed and the applicant beholds his KNSA-license and shooting club membership;
- In case of no withdrawal, the license request is declined. The KNSA is informed resulting in withdrawing both the KNSA-license and the shooting club membership.

If the request is declined the applicant can perform an administrative appeal at the Ministry of Safety and Justice. If this first administrative appeal is rejected an appeal can be made at the administrative judge. Once again rejected the last opportunity is to appeal at the Council of State.

In case of a withdrawal:

If the prescribed rules or regulations are not observed, the chief constable can start the procedure to withdraw the gun license just like it is done in case of a refusal. Not only the chief constable but also the board of the shooting club can end a membership and thereby withdraw the KNSA-license. In this case the shooter does not meet the expected conditions to possess a gun license. The KNSA registers the people who lost their KNSA-license and shooting club membership so that one cannot become a member of a shooting club again.

How to possess a gun for hunting:

The global process to possess and maintain a license for hunting and legally own a weapon to hunt with, is in most points pretty much equal to the process to possess a gun for shooting but differs at some points that are prescribed by the Ffw. (2012). Concerning for instance what to hunt, where to hunt and when to hunt. The hunting license is requested at the chief constable of the concerning police area just like the gun license. The three criteria that should be met are:
- The applicant has to be eighteen years or older;
- The applicant must have a reasonable interest to possess a weapon for hunting purposes;
- There is no fear for abuse.

To meet the requirements for having a reasonable interest to hunt, the applicant first has to successfully pass the hunting examination, has to be in possession of a liability insurance and gain opportunity and permission to hunt. The hunting examination is part of the hunting and wildlife management course (Cursus jacht en faunabeheer) and is organized by the SJN (foundation for hunting courses, part of the Royal Dutch Hunting Association, KNJV). The course starts in November every year and is tested in April. To take part of the final exam, which is divided into a theoretical and a practical test, the applicant has to be at least sixteen years old. To take part at the practical test, the hunter has to be in possession of a safety declaration, which is given once the practical lessons have been passed successfully. If both the theoretical and practical tests are passed, the applicant is given the hunting diploma. According to the Ffw. (2012, Art. 56) the applicant has to be in possession of a liability insurance. The law states that a person hunting with a rifle, has to assure that he or she takes care of his or her civil judicial responsibility for damage that has been made during the hunt. The applicant has to hand in a copy of his insurance policy to proof his liability. The third and last condition for reasonability is the opportunity and permission to hunt, gained from a so-called 'game keeper'. The game keeper is the responsible owner of a forty hectare hunting surface area. The game keeper has to give the applicant a written and signed permission to hunt on his area.

Once all these three requirements are fulfilled the applicant has a reasonable interest to hunt and is competent to request a hunting license at the chief constable of his living area. The department of Special Laws has the task to check if the applicant is reliable and that there is no fear for abuse. Theoretically, this is done by following the same procedure when an applicant makes a request for a

gun license. First, the hunter undergoes a background check to see whether he or she has a history of violent incidents, and secondly the applicant's home is visited to check if the gun storage meets the required conditions.

If all the conditions are fulfilled the applicant is given a hunting license, valid for one year. If the request is declined the applicant can follow the same procedure to appeal just like an applicant for a gun license. This means that he can first appeal at the Ministry of Safety and Justice, second at the administrative judge and finally at the council of State.

"Pathway to legal gun ownership"
The process described above about legally obtaining a gun is illustrated in figure 3.1. It shows the exact 'path' that one with an affinity with guns has to take to obtain and maintain legal gun ownership. This pathway is summarized into an abstract scheme in figure 3.2. The left section shows the 'minimum age line' which refers to the minimum age of an applicant, related to state of progress. The green colored sections refer to controllable and reliable situations: for example: a hunter must be in possession of liability insurance, if he or she is not in possession of this insurance document, no license is given. The orange colored sections however, refer to insecure, non-controllable sections. A non-controllable aspect is for instance a required form for psychological condition. In Twente, an applicant has to fill in a declaration of his or her psychological condition. This is a self-declaration without any doctoral support. This means that this declaration is vulnerable for not telling the exact truth, which makes it more a sense of trust than reliability (Police region Twente, 2012).

Affinity with guns

Acquaintance with guns

- 12 years or older
- Registered at a introduction register
- A maximum of three introduction over 12 months
- Become aspirant member (age and preconditions depending on shooting club)

Choice for shooting: 'shooting path'

Reasonable interest

Become a member of a shooting club
- VOG (declaration of good behavior)
- Successful trial time (1 month)
- Prospective membership (6 months)
In possession of a KNSA license
- Competent with shooting

No fear for abuse

Hard information
- Background investigation
- House visit (vault control)
Soft information
- Self-declaration psychological condition

Request shooting license

- 18 years or older
- Shooting club declaration (WM3)
- KNSA-license
- Positive background investigation
- Positive house visit

Choice for hunting: 'hunting path'

Reasonable interest

Positive hunting examination
- Practical test
- Theoretical test
In possession of a liability insurance
Opportunity and permission to hunt

No fear for abuse

Hard information
- Background investigation
- House visit (vault control)
Soft information
- Self-declaration psychological condition

Request hunting license

- 18 years or older
- Liability insurance
- Signed permission to hunt (by game keeper)
- in possession of a hunting diploma

Judgment by chief constable

| **Approval** | **Disapproval** |

Legal Gun ownership (1 year)

- Shooting: possession of a maximum of 5 guns (category III)
- Hunting: possession of a maximum of 6 guns (
- License for one year
- in possession of a good safety vault

Opinion check

- Withdraw license request
- Approval by chief constable
- Disapproval by chief constable

Appeal

No legal gun ownership

- Request again depending on reason of approval/withdrawal
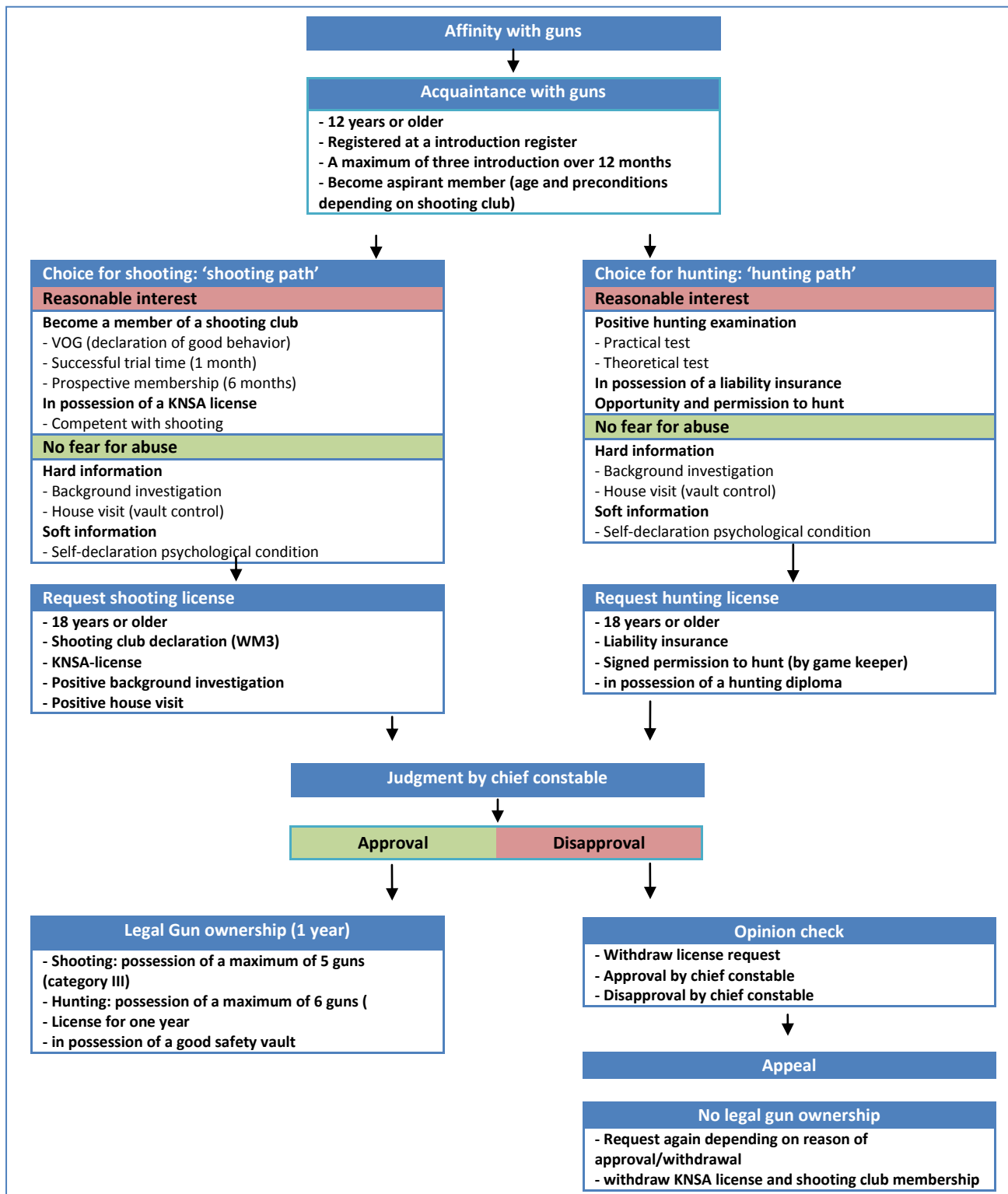- withdraw KNSA license and shooting club membership

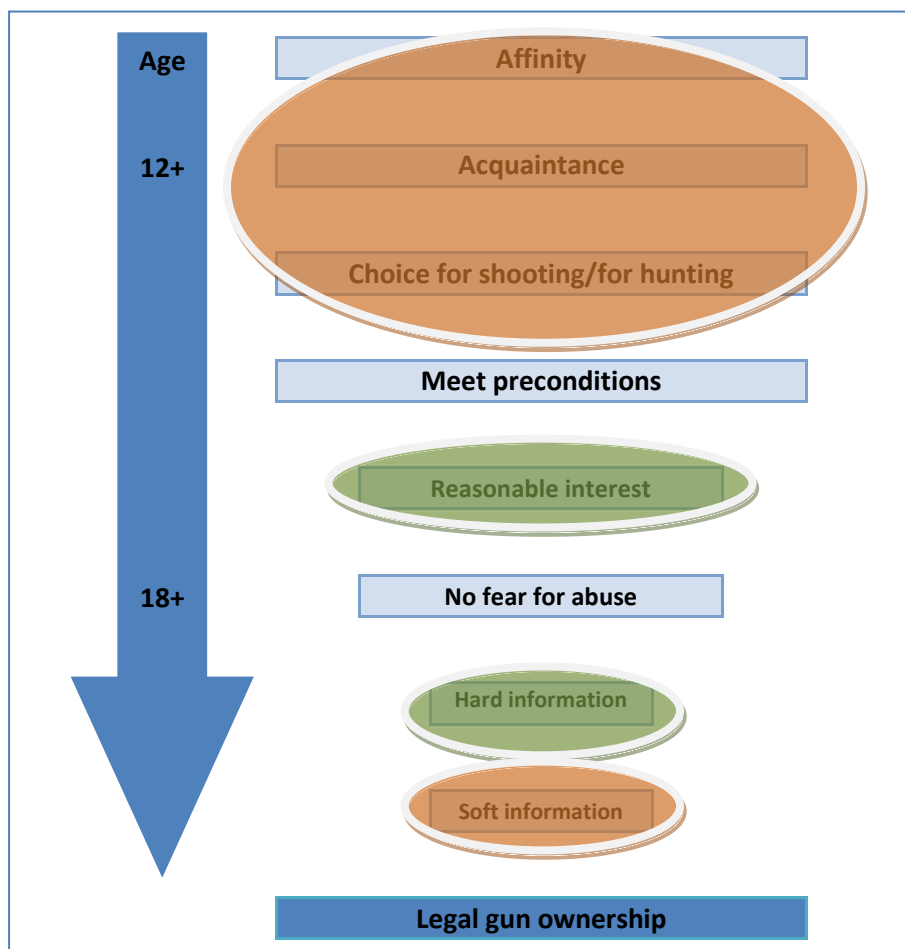Figure 3.1: "pathway to Legal gun ownership"

Figure 3.2: "Pathway to legal gun ownership"

The process scheme has already tried to indicate differences between controllable/reliable and insecure/non controllable situations. Controllable situations can be measured and tested by the police, the KNSA, and shooting clubs. However, non-controllable situations, cannot be measured, at least not with full certainty, or are not being measured yet. Figure 3.2 highlights two sections in orange. These sections are:

- Affinity with guns:
  There is no knowledge of one's affinity with guns. It is not clear why someone wants to shoot a gun and eventually possess one. The motives are not clear.
- Acquaintance with guns:
  Introduction in shooting: If someone reaches the age of twelve or older, a maximum of three introduction lessons (in twelve months) can be taken at a shooting club (Onderzoeksraad voor Veiligheid, 2012). The person who is introduced to shooting has to stay in range with a person who is in possession of a gun license. The shooting club has to keep up a register with introduced persons. Shooting club guests are neither tested for motives nor are they questioned or tested about a criminal past.
  Aspirant member of a shooting club: If someone reaches the age of twelve or older, one can become an aspirant member. Depending on the shooting club, one can shoot with handguns at different ages/ membership stages. Here again, the motives to shoot a gun are not clear, nor is it clear why there is a desire for gun ownership. Of course, during one of the interviews the aspect of motives can become a subject of conversation, but it is not a format subject.

- Choice for shooting/hunting:
    Based on one's affinity/ambition, a choice for shooting/hunting is made. This choice decides what type of gun you may possess. This choice is based on unknown motives.
- "Soft information" on fear of abuse:
    This information gives insight that can influence the level of fear for abuse. This information can consist of for instance: bad family relationships, neighborhood problems, gang membership. Soft information is, except for the self-declaration of psychological condition, unknown.

3.4 "No fear for abuse" and risk factors

In the previous paragraph, and in the two process schemes, the "no fear for abuse" criterion has already been introduced. The "no fear for abuse" criterion is a vague criterion meant to prevent future excessive behavior. It consists of insight in hard information and soft information. Only the hard information is accurately checked by the police by doing a historical check (for earlier criminal activities) and a house visit (checking if the gun-vault meets the prescribed conditions). Soft information on the other hand, cannot be verified just like hard information. Phase one introduced the concept of science-based risk factors. Risk factors are the pieces of information that help to assess whether there is a certain fear for abuse of someone´s license.

So how is soft-information being gained according to the Dutch legal gun legislation? The gun law (Wwm, 2012, article 7, clause 1) tells us the following, very short, information on withdrawal and refusal. Refusal/withdrawal in case of urgent reasons when:
- There is a reason to fear that gun ownership cannot be entrusted with an applicant.
- There is a reason to fear that gun ownership will be abused.

We have already learned how this law can be executed. The Cwm. (2012, part B, art. 1) describes a somewhat larger section on the "no fear for abuse" criterion. It states that information comes from two different sources:
a. Previous convictions (hard information);
b. Other, applicant related, known facts (soft information):
- 'Nolle prosecqui' (cases of discontinued criminal charges) and current police reports.
- Psychological condition.
- Being in criminal spheres.
- Third parties involved.

Next to the gun law, the Minister of Safety and Justice has also instructed different regions on the application of the above criteria for no fear for abuse. This instruction was given in a letter directed to the Dutch House of Representatives (Tweede Kamer der Staten-Generaal). For instance, an instruction that has been given is the advice to notice deviant behavior of licensees during a house-visit. The instructions in this letter are however not recorded into legislation (Opstelten, 2012a). Thus, instructions in this letter will not be considered as instruments to collect information on risk factors and are not taken into account for the analysis in the conclusive section of this research. However, a discussion about this subject can be found in chapter 5.4.

Let us explore the concept of "no fear for abuse". The law states that there is fear for abuse if someone cannot be entrusted to own a weapon or there is fear that there is a chance that one will abuse his privilege to own a gun. The law also states that one can gain a license if one is no fear for itself, the public or public safety. The word 'fear' in the criteria "no fear for abuse" has a vague meaning and gives a law executer some space to assess an applicant based on some conditions. For instance, friends who are involved in criminal spheres can influence the level of fear for abuse. The criterion tells us that there needs to be *no* fear for abuse. This gives executors the space to

determine whether there is fear, or there is no fear (recall the example of Twente). So there are conditions that determine the level of fear, and if this level reaches an unspecified height, the criterion of 'fear for abuse is present. The most important word in this criterion is the word "abuse". It means that one threatens his own safety, the safety of one another or the public safety. This explanation is pretty much in accordance with the broad perspective of antisocial behavior and criminal behavior. Criminal behavior refers to acts that are injurious and prohibited under the law, and render the actor subject to intervention by justice professionals (Andrews and Bonta, 2010). Criminal behavior is antisocial behavior, however antisocial behavior is not always criminal behavior. Antisocial acts may not always be prohibited under the law, and under some temporal and cultural circumstances may even be prescribed (for example, killing the enemy under the conditions of war) (Andrews and Bonta, 2010).

Seen in this context, criminal and/or antisocial behavior can mean the same as the word 'abuse'. For instance, someone who is licensed to possess a gun decides to use his gun to kill his ex-wife. He now is abusing his privilege to own a gun and threatens public safety by using criminal behavior. In this case, criminal behavior is the 'abuse' of the gun license by murdering a person. In order to prevent criminal behavior by abusing a gun license, prediction of criminal behavior is necessary. What we are looking for are conditions that influence the level of 'fear for abuse', the hard and soft information. How this is covered by the Dutch gun legislation has already been described throughout this chapter but will be assessed in the conclusive section of this chapter, by applying the risk model of phase one and looking to the multiple dimensions that is used.

3.5 Conclusion

The previous paragraphs tried to illustrate information on legislation to provide an answer to the sub-question of phase two. In this conclusive section, a concrete answer will be given to this question. The risk model of phase one will be used as a policy analysis tool to collect and compare information of science-based risk factors and dimensions of applicability, the 'analyzing variables'.

How are, according to legislation, risk factors embedded in current Dutch and foreign gun policy, and what are the differences?
First, let us start with the current Dutch circumstances. To summarize the information on the assessment of soft information in the Dutch gun legislation, the 'analyzing variables' will be used to check the extent to which risk factors have been applied according to what is described in policy and legislation documents. The Cwm. briefly describes the application of the Dutch legal gun policy but leaves some policy 'space' in the section of 'no fear for abuse', mentioned earlier in chapter 3.3. Information on this criterion is possessed by using three data sets: a screening (history and background check); a house visit; and soft information. The screening collets data from two information channels, namely: official reports and police reports with no conviction. Information is gathered by doing desk research. In this way, the first risk factor, 'history of antisocial behavior' is embedded. Also information from police reports can consist of soft information on risk factors such as 'antisocial personality pattern' and 'alcohol and drugs abuse'. This information will be included when it is available and emerges incidentally. Risk factors are not excluded by default. Therefore, it can be said that this information is not structurally embedded in the policy. A visit to the applicants or license-holder's house is made to verify whether or not there is a gun safe available and if it meets the proposed conditions. This dataset is a potential source for soft information on risk factors such as: 'antisocial personality pattern'; 'antisocial cognition'; and 'family/marital circumstances'. It is not formally described that information gathering of these risk factors (structurally) has to be taken into account, therefore information is possessed incidentally and risk factors cannot be excluded. The same goes for the third data set 'soft information'. The Cwm. phrases that information can be gathered from 'other, applicant related, known facts'. This is information in current police reports;

information regarding someone's psychological condition; indications of someone being in criminal spheres; and unreliable third parties such as roommates. This potential information covers the risk factors: 'antisocial personality pattern'; 'antisocial associates'; 'major mental disorder'; 'personal/emotional distress'. However, there is no structural pattern to collect this information. Again, this information is possessed due to incidents, like for instance: someone is loitering, part of a street gang and commits antisocial behavior; this is reported by the then present police officer. This information consists of the risk factors 'antisocial personality pattern'; 'antisocial associates'; and 'alcohol/drugs abuse', gathered from one type of information channel, the police officer. If this police officer was not around at that specific moment, there would be no information gathered of those risk factors. However, these risk factors are still present.

Chapter 3.2 described the conditions of risk factors in gun policy of four foreign countries: Belgium; Germany; Finland; and Norway. All four countries have at least one thing in common, that is: gun ownership is not allowed, unless... The process to obtain a license in Belgium is arranged in such ways that several risk factors are covered and multiple information channels are used. The requirement of a medical certificate ensures that risks for physical and mental illness are covered until three months before the license request. The approval of roommates is another information channel to compare risk factors regarding an antisocial personality pattern. Roommates are close to any potential threats or misconducts of the license holder, and receive dangerous signals earlier than the police do. Personal requirements ensure that the applicant has never been in a psychiatric institution and has no earlier convictions. The German legislation also covers risk factors in different ways by using multiple information channels. An applicant may not have a history of psychological treatment and if an applicant is of age that fits in the risk group (age below twenty-five), he or she has to deliver a medical/psychological declaration. In Finland there are three important ways to indicate risks in multiple dimensions. The most innovative manner is the psychological test that has to be taken from the license applicant. This risk assessment estimates risks of an antisocial personality pattern and is used together with a personal interview to indicate the 'fear for abuse' criterion. Another information channel and a way to indicate risks are by doctor reports. If the general practitioner believes that his patient is a (potential) threat to society, he has the responsibility to inform the police. Less is known about Norway. The only way to discover risks in Norway is a personal interview before an applicant gets his or her license. In this interview, the police interviewer investigates criminal and psychic/psychological history to estimate risks of abuse.

The differences in the way of integration of science-based risk factors, between Dutch and foreign countries can best be compared in a table. This comparison is presented in table 3.5 by using the 'analyzing variables' as the comparing subjects. According to the table the following differences are the most striking differences:
- *Dutch legislation covers the least risk factors*:
    Where other countries make use of interviews with licensees or medical declarations to exclude risk factors regarding an antisocial personality pattern or alcohol/drug problems, Dutch legislation only focuses on a history of antisocial behavior by investigating earlier convictions.
- *Personal interviews with licensees are mandatory in foreign countries*:
    Most investigated foreign countries make use of interviews with licensees to gain information on personal risk factors. Dutch legislation does not require police regions to apply an instrument like an interview to collect data.
- *Different information channels*:
    Foreign countries apply different information channels to gather information on risk factors, for instance: Belgium uses a medical certificate and information of roommates to check someone's psychological condition. Dutch legislation only uses data that is gathered by police sources to estimate risks.

- *Using innovations to fill in margins and policy-space to limit risks*:

    Dutch legislation lacks innovative solutions to discover risks. Foreign legislation showed different innovations such as: a medical declaration; approval of roommates; a psychological test; etcetera.

Dutch policy is too much focused on using only information that comes from police forces and is therefore not embedding all risk factors of the risk factor model. A complete overview of the comparison between Dutch and foreign legislation on the basis of the analyzing factors is showed in table 3.5 below.

	Belgium	Germany	Finland	Norway	Netherlands
Risk factors	1,2,3,4,5,8,9,11	1,2,8,9,11	1,2,3,8,9,11	1,8,9	1
Instruments	Police database, interviews, medical certificate, house visit	Police database, medical certificate	Police database, interview, psychological test,	Police database, interview	Police database
Information channels	Police information, licensee, roommates, general practitioner	Police information, licensee, general practitioner/psychologist	Police information, licensee	Police information, licensee	Police database
Methods	Screening (Background-check, interview, medical certificate), house-visit	Screening (background check, interview), capability-check (declaration of general practitioner/psychologist if age below 25 or high risk)	Screening (background-check, interview, psychological test)	Screening (Background check)	Screening (background-check
Settings	Multiple instruments, information channels and methods	Multiple instruments, information channels and methods	Multiple channels	Single instrument, Multiple channels	Single instrument

Table 3.5: comparison of analyzing variables between different countries. Note: the numbers in the variable row 'risk factors' are compatible with the numbers given in the risk factor model: 1: History of antisocial behavior; 2: Antisocial personality pattern; 3: Antisocial cognition; 4: Antisocial associates; 5: Family/marital circumstances; 6: School/work circumstances; 7: Leisure/recreation circumstances; 8: Alcohol/drug problems; 9: Major mental disorder; 10: Social class of origin; 11: personal/emotional distress.

4. The applicability of risk factors in policy practice

4.1 Introduction

Legal gun ownership in the Netherlands is forbidden, unless…, a short phrase that describes gun regulation in the Netherlands (Wwm, 2012). It states that no one may possess a gun, except for the ones who have been given an exceptional position. This position is bounded by rules; rules that are founded in the Dutch gun law and most of the time have been changed and sharpened after an incident with legal guns involved (see chapter three, Finland, the Netherlands, Belgium etc.). The previous phase described how risk factors are embedded in the level of legislation. This phase focuses on how legislation is translated into practice.

The base of this chapter is formed out of information from in-depth interviews with police personnel of three different police regions. Interviews were held among three police regions to gather information on two levels of policy. That is: policy determination by the Chief of the department of special laws, and policy application by executers of the same department. The in-depth interviews will compare policy determination with policy execution between the three regions on the base of four different categories. These categories have already been introduced in chapter 1.3 of this study and are derived from theory on policy quality and analysis (Hoogewerf, 1993; Mayer et al., 2004). All categories consist of comparing variables, a list of all variables can be found in appendix A. Variables of the first category are derived from questions regarding the feasibility of policy and policy goals: how is policy executed? Are goals chosen well, are they feasible, what is done to discover mistakes, find solutions and improve policy? (Hoogewerf, 1993). The second category, contentment with policy, is derived from the second sub-question of this phase. Comparing contentment in policy between different regions and functions to discover problems, weaknesses and shortcomings in legislation, regarding risk factors. The third category is used to explore the coverage of science-based risk factors. Comparing variables are derived from the 'analyzing variables' from phase one (Andrews & Bonta, 2010). Variables in the category on innovations are derived from research on policy design (Hoogewerf, 1993) and are used to inventory possibilities of integrating science-based risk factors into practical execution.

Policy determination		Policy execution
1A Enforcement of policy	⟷	2A Execution of policy
1B Contentment	⟷	2B Contentment
1C Risk factors	⟷	2C Risk factors
1D Innovations	⟷	2D Innovations

Table 4.1: comparing categories. Each category consists of different variables. An overview of these variables can be found in appendix A

To provide an answer to the sub-questions regarding problems and weaknesses in current policy and the integration of risk factors, this chapter is, next to this introduction, divided into four other paragraphs. Paragraph 4.2 is about policy determination, execution and contentment. The third paragraph focuses on how risk factors are applied in current policy; information will consist of differences and similarities between determination and execution of the third category of table 4.1. Paragraph four describes the feasible improvements of policy with respect to risk factors. This section generally focuses on categories 1D and 2D, 'innovations', but will also use information from the other categories to confirm statements. The last conclusive paragraph combines all categories to answer the two research of this third research phase.

4.2 Policy determination, execution and contentment

The goal of this chapter is to describe the comparison between the first two categories that are shown in table 4.2. To say something on how legal gun policy is translated into practice, opinions and experiences of both policymakers and policy executors of different regions are important. A total amount of eleven variables were compared on policy determination-level and policy execution-level. A list of all variables can be found in appendix A. The variables that are treated in this paragraph are the following. In the comparison between 'Enforcement of policy' and 'Execution of policy': policy Goals (1A3, 2A2); Feasibility (1A4, 2A3); Quality of policy document for execution (1A5) and Similarity determination and execution (2A1); Evaluation (1A6, 2A4); Improvement due to evaluation (1A7, 2A5); Errors and solutions (1A8, 2A6); Internal and external information exchange (1A9, 1A10, 2A7). Variables in the 'Contentment' category are: Contentment with national policy (1B11, 2B8); Contentment with regional policy (1B12, 2B9); Problems, weaknesses and shortcomings (1B13, 2B10). The comparison between all variables resulted in four main subjects that will be elaborated throughout this paragraph. These subjects are: first, the policy goals: Are they clear and feasible? Second, is the Cwm. a good policy document for execution? Third, are there evaluations that lead to policy improvement and how do regions deal with policy errors? The fourth and last aspect that will be highlighted is the contentment with legal gun policy, on both national and regional level, focusing on problems, weaknesses and shortcomings.

Policy goals:
Chapter three already elaborated on legislation on legal gun ownership. Law and rules can be found in the Dutch gun law (Wwm, 2012), and the execution of this legislation is described in the Cwm. The Cwm. is build up by goals to maintain the Dutch gun law. For instance, a concrete goal is to check the storage of guns and ammunition of all license holders, at least once a year (Cwm, 2012, part B, art. 9.1). According to the study of the Dutch Safety Board, there is a great variety between regions regarding the maintenance of this concrete goal (Onderzoeksraad voor Veiligheid, 2011). Interviews with the three regions underline this observation varying from 95% in one year (region B, personal communication, October 4, 2012), to approximately 100% in eight years (region C, personal communication, October 9, 2012). This is just one of the goals that have not been or cannot be achieved. Nevertheless, according to all respondents, the Cwm. is a policy document that describes clear goals, only these goals are not realistic, they are not feasible. The chief of Special Laws in region C points out that for instance, the Cwm. describes that there has to be supervision of the police region over license-holders, shooting clubs and arms dealers. Due to a lack of personnel, priorities have to be made, considerations of where to put in your capacity resulting in for instance lacking in the control of shooting clubs (personal communication, October 9, 2012). Two of the three regions seem to agree that the goal of checking gun-safes of all licensees once a year, is not feasible because of workload, understaffing, and lack of capacity (region A and region C, personal communication, 2012). The capacity problem is however pointed out by all three regions. Another goal described by the Cwm is the withdrawal/refusal of licenses on the basis of soft information, or 'no fear for abuse' (Cwm, 2012, part B, art. 1). This goal is unanimously described as an elastic concept that offers margin for policymaking but has little or no handhold. A person can be refused on the basis of his or her psychological health, but the Cwm. does not give a concrete description on the basis of which grounds.

The Cwm. A good standard?
So can this policy document be seen as a good standard for executing policy? In first place, according to both policymakers and executors it can, provided by the fact that it has to be executed correctly. To execute described goals, good policy rules and process descriptions have to be available. It has already been mentioned that the Cwm. lacks in deeper knowledge and handhold in the 'no fear for abuse' section. There are no standard process descriptions available to refuse someone on that behave. This given fact leads to a big margin for policymaking on this section, resulting in a huge

variety in process descriptions in this policy area between different police regions in the Netherlands because they are determined within the region. Next to a variety of process descriptions, regions vary in giving priorities to different goals, what is more important: perfect screening or a one hundred percent score on the yearly house visits? After all, according to the chief of Special Laws in region A, the Cwm. is an instrument; it is additional to the Dutch gun law and gives concrete goals (personal communication, July 18, 2012). However, because these goals are not always feasible due to a lack of capacity, and offer a vague margin sometimes. This leads to huge differences between regions. In this way goals are not always achieved, or they are achieved in a wrong/different way, making the Cwm. a standard lacking in further instructions for process descriptions.

Evaluations and errors:
Another aspect that all regions also have in common, or where they actually fail, is a lack of structural policy analysis to control and steer their own process descriptions and policy. There is no structural planned evaluation. Evaluation occurs incidental when errors are made or incidents take place. This activity of incidental evaluation varies from region to region. This has all to do with transparent and open internal communication. In police region B there is a high level of feedback, in contrast to region C where there is little or no feedback. There is no structure, it is not embedded in the execution process to shape policy processes so it can be improved. For instance, in region A there is an evaluation after the annual renewing of all hunting licenses. Police personnel are asked to describe what went wrong and which aspects could use improvement. Often this request is ignored, says a policy executor of police region A (personal communication, July 18, 2012). Of course, there are examples of cases in which evaluation takes place. According to a policy executor in police region B, they check the increase/decrease of the amount of warnings that are given to license holders if their gun safe does not meet the required expectations. If the amount lowers, the process can be steered by paying more attention to instruct controlling personnel (personal communication, October 4, 2012). Evaluation incidentally takes place in all regions, leading (again) to a variety in process shaping and improving. The same goes for dealing with errors: Because there is no structural evaluation, the detection of errors also happens incidentally. An example of incidental detection has been given by an employee of police region B: A young police officer was selected to do a gun-safe control. He disapproved the safe because it did not meet the expectations as described in the Cwm. The licensee however objected this disapproval because his gun-safe has been approved for over the last five years (personal communication, October 4, 2012). Due to a discrepancy between the police officer's criteria and the criteria described by the law, the safe was improperly approved. This is a matter of knowledge of law and interpretation of law, caused by what is already described in the previous section, a lack of further/deeper instructions for process description in the Cwm. Gun safe controls are most of the time executed by police officers as a 'side issue'. When these safe checks are performed by a big amount of police officers, it leads to discrepancy in both the way of execution within and outside of the police region, and knowledge.

Information exchange of policy processes:
According to the previous sections it has been made clear that, due to the fact that the Cwm. lacks clear instructions, the available margin leads to different ways of policy making between the three regions. In the in-depth interviews it has become clear that there is a high level of intern information exchange but the external communication on policy processes between different regions and third parties like the Dutch Shooting Association is still in its infancy.

Contentment with policy:
The second category of variables focuses on the contentment with national and regional policy and questions the problems, weaknesses and shortcomings within legal gun policy according to the policy makers and policy executers of the three responding police regions. All six respondents seem to have a discontentment towards national decisions in common. They believe current actions are not enough to prevent an incident like in Alphen a/d Rijn. For instance, the potential decision to forbid

semi-automatic guns (Opstelten, 2012), makes no sense at all, according to all respondents. A decision has to be more related to the person himself instead of the shooting sport. Another shared concern is the information-position. Information comes via too many channels, this means that 'raw' information is treated and reviewed by other departments before experts receive it. Also, sharing information is limited by the Dutch privacy law (Gw, 2012, art. 10 until 13; Wbp, 2012). Information on psychological health is not shared due to the confidentiality of treating doctors, according to the chiefs of all responding departments of Special Law (personal communication, 2012).

At regional level the contentment with policy shows a big difference between policy makers and policy executors. 'Makers' are cautious on the contentment with policy. The Chief of Special Laws of region C even sees his department as 'neglected'. Policy executors are content with the current developments, however these developments differ per region from: passive developments like adequately taking action when needed (region A), to active developments such as a predefined checklist during an interview with a licensee (region B).

During the in-depth interviews, both general and specific problems, weaknesses and shortcomings were discussed. All three were mentioned in a large extent. The subjects are listed below, together with a description, to provide a clear overview of all problems, weaknesses and shortcomings:
- *Bad insight in beginning shooters:*
  There is no information available to the police about aspirant shooters. Aspirant shooters, who might have a potential risk of fear for abuse, can get practically skilled in shooting a rifle. Information can be collected when aspirant shooters will be screened by the police or concerning shooting club on risk factors.
- *Using the same department for giving and controlling gun licenses:*
  In any case of the three responding regions, both license giving and license controlling/ maintaining is performed by the same department. This can be a threat to validity in both the giving and controlling of a license.
- *Gun-safe control by too many persons:*
  In all three regions the gun-safe controls are being executed by normal police officers. Most of the time there is no structure in selecting a small amount of 'task'-qualified persons. It is done by a big group of officers, leading to a variety in knowledge and handling.
- *No rules for capacity in Cwm.:*
  The Cwm. does not describe instructions for capacity, it only describes goals, which can be achieved by drawing own policy processes, varying from region to region. What the Cwm. needs are structured guidelines that meet national requirements.
- *No capacity for control and maintenance:*
  There is not enough capacity to achieve the prescribed goals, such as the annual gun-safe check; the supervision of shooting clubs; and the screening of licensees. These goals are not feasible, therefore priorities have to be made, varying from region to region.
- *Little or no available knowledge and education:*
  Because there is no standard school for practicing 'Special Laws', experts have to gain their own expertise. There is a variation in knowledge among the regions, leading to different views on the margin of some goals in the Cwm. For instance, for some the margin offers a chance for innovations resulting in instructions for gun-safe controls, for others the margin is vague, leading to ambiguities in the implementation and execution of the prescribed goals.
- *Information-position:*
  Information is obtained, but obtaining information is sometimes made unnecessary difficult. Difficulties lie in the restrictions of the privacy law such as gaining information of someone's psychological state of health, and the fragmentation of information due to passing info from department to department to eventually, the expert.

Three main aspects seem to be recalled in every subject of this chapter. These aspects are: 'Variety'; 'Capacity'; and 'Information'. All three aspects are threats to the achievement of goals, thus the rationality of legal gun policy.

4.3 Using risk factors in practice

This paragraph elaborates how soft information is applied and how risk factors according to the risk factor model are embedded in the policy processes of the three responding regions. The regions are compared according to five variables of the third category in table 4.1 'Risk factors'. These variables are: Application of soft information (1C14, 2C11); Application strategy (1C15, 2C12); Embedding of risk factors (1C16, 2C13); Application of risk factors (1C17, 2C14); and Information exchange on risk factors (1C18, 2C15). The variables will be outlined below in two sections: the application of soft information per region and the recognition of the risk factor model of phase one in policy. The last section treats the comparison between the 'analyzing variables' (risk factors, instruments, information channels, methods, and settings) and the information gathered from the three regions.

Application of soft information:
As described in phase two, according to the Dutch gun law and the descriptions in the Cwm., a license can be withdrawn or refused on the base of the 'fear for abuse' criterion. All three responding regions agree with this fact and draw different examples of valid withdrawals with just the use of soft information. For instance, an example of what happened in police region B: police officers reported misbehavior of a license holder, there were suspicions of him visiting whores and buying drugs. His family was also concerned of his behavior and therefore they revealed their concern to the police. The man was no suspect in any case at all and had no earlier convictions; nevertheless his license had been withdrawn on the basis of soft information. This is a classical example according to an employee of the Department of Special Laws in region B (personal communication, October 4, 2012).

According to a policy executor In region A, the application of soft information is a 'growing' factor in the withdrawal/refusal of gun licenses. According to executors, soft information most of the time is not testable and not reliable and is therefore not always taken into account (personal communication, July 18, 2012). The estimation of risks and seriousness of soft information requires specific knowledge, which some employees lack, says the Chief of Special Laws in region A (personal communication, July 18, 2012). Soft information is most of the time found in police mutations, it is not actively and structural investigated.

Of all three regions, region B is the most innovative region regarding the collection of information. Just as in region A, information is processed from different channels: hard information from the police database and soft information from police officers in mutations. However, in contrast to region A, soft information is being obtained more actively by the application of making innovations to the available margin in the Cwm. The chief of Special Laws in region B points out that they have appointments with schools of licensees to alert the police when someone exhibits deviant behavior (personal communication, October 4, 2012). They applied a predefined checklist for screening interviews with (new) licensees. According to a policy executer of region B, this screening instrument is an instruction for interviews, consisting of a combination between personal questions (school, work, hobbies, family/relational sphere) and gun-license related questions concerning motives (personal communication, October 4, 2012). Also instructions are given to the executing police officers of house-controls. They are instructed to signal more than just an incorrect gun-safe. However, the estimation of risks happens just like in region A, on the basis of work experience and common sense.

The gathering and application of soft information in police region C can be seen as passive. Information comes via different channels but co-workers of this region are cautious to use soft information because they have experienced abuse of police capacity. When there is for example a fight between neighbors, the police can be alerted with the information that weapons have been abused, they know that the police will come sooner. Police region C created hand-outs for the executing police offers who perform house controls, comparable with the instructions given in region B, but lacking in-depth and further instructions by just giving the hint to 'look further'.

Soft information is (partly) processed in all three regions, but it is not structural applied. The margin of the Cwm. offers on the one hand a potential for innovation, but is also understood as ambiguous. This leads to big differences between regions.

Description according to risk model:
When the respondents were asked to estimate how the risk factor model of phase one is embedded in their policy process, there was a slight difference between policy makers and policy executers in their reaction, stating a partial coverage on the one side and no coverage at all on the other. What the two responding groups have in common, is the opinion that some risk will not be discovered because they are not structurally investigated (region A, region B, region C). The risk model in figure 2.6 is a good instrument to estimate risks in a structured manner. Below, the three regions are being compared according to the 'analyzing factors' starting with the applied instruments and ending with the covered risk factors of the risk factor model.

It is clear that the margin in the Cwm. results in differences between police regions in the Netherlands in applying, discovering and estimating risk factors. A variation of instruments is used, ranging from a semi-structured checklist for interviews with licensees, to the instruction of house-visiting police personnel with the additional note to 'look further' for more information. Of all respondents, police region B seems to be most complete in embedding the risk factor model. They make use of different instruments: police database (convictions, mutations); a checklist during the intake-interview; instructions for house-checks, to create a dataset of information on one licensee. An overview of the differences between the 'analyzing factors' of all three regions is given below in table 4.3.

	Region A	Region B	Region C
Risk factors	1,2,9	1,2,5,6,7,8, 9, 11	1,2
Instruments	Police database, declaration of no psychological history	Police database, intake-interview, house visit	Police database, interview, house visit
Information channels	Police information	Police information, licensee, school	Police information
Methods	Screening (background-check)	Screening (background-check, intake-interview) house visit	Screening (background-check, interview)
Settings	Multiple instruments, one information channel	Multiple instruments, methods and information channels	Multiple instruments

Table 4.3: comparison of analyzing variables between different police region in the Netherlands. Note: the numbers in the variable row 'risk factors' are compatible with the numbers given in the risk factor model: 1: History of antisocial behavior; 2: Antisocial personality pattern; 3: Antisocial cognition; 4: Antisocial associates; 5: Family/marital circumstances; 6: School/work circumstances; 7: Leisure/recreation circumstances; 8: Alcohol/drug problems; 9: Major mental disorder; 10: Social class of origin; 11: personal/emotional distress

4.4 Feasible improvements

All respondents were asked to give their view on how policy could be improved regarding risk factors. They were also asked to point out which problems are most likely to occur when policy is changed. The variables in category D 'innovations' were compared among the respondents and consist of: Possible improvements (1D22, 2D19); Instruments (1D23, 2D20); Possible problems (1D24, 2D21). In this paragraph, first all improvements will be listed, followed by the possible instruments. This paragraph will end with a description of possible problems in the integration of science-based risk factors according to the interviewed regions.

There are four subjects of improvements that came out as most important according to the three regions. These subjects are: knowledge/education; information; personnel capacity; and standard procedures. All subjects will be described one by one. To start with knowledge and education, this subject is just like the three other subjects also mentioned in paragraph 4.2 as a shortcoming in current policy. According to the respondents, there is too little knowledge on risk factors within the police force. That is, there is too little knowledge among employees of Special Laws and police officers. Knowledge is divided and incomplete. At this point, there is no education that aims specifically on the tasks of the perfect application of the Cwm. There has to be structural knowledge on risk factors in general so they can be applied and estimated by all personnel in the same way to achieve the same goal, that is: withhold persons from getting/having a gun license if there is fear for abuse. Personnel must be qualified, an aspect that is lacking according to all the responding chiefs of Special Laws (personal communication, 2012). Also, knowledge has to be shared internally to colleagues within the department and with other police regions, and externally to third parties like shooting/hunting clubs and the KNSA. Education and instructions bring knowledge, and knowledge gives the right information, the second aspect that is highlighted as an important improvement. Sharing information is bounded by rules grounded in the Dutch privacy law. According to the Chief of Special Laws in police region A, there is a demand for exceptions of this law in specific points (personal communication, July 18, 2012). Risk factor related information like info about someone's antisocial personality pattern has to be shared with and by third parties. According to both the leading and executing personnel of police region B, also information on someone's psychological health must be passed on to the police in an honest way, like for instance: reporting a list of only names of persons who have been in a psychological institute, both forced and voluntary (personal communication, October 4, 2012). The process of safety in legal gun ownership needs improved information sharing. The third aspect is the problem of personnel capacity. A difference in solving this problem was seen between the regions during the interviews, where one region pleaded for more personnel (region C, personal communication, October 9, 2012) and more priority for their tasks while the other region preferred a small group with good education (region B, personal communication, October 4, 2012). Of course, the second solution offers more possibilities for working with risk factors: a small group of officers who carry out the interviews and house visits by applying the same working structure; easy and fast information sharing within the small group; focusing on for example risk groups because of the lower personnel capacity. The first option will cost more money and is less efficient. A last improvement of great importance is the use of work processes; process schemes; guidelines; instructions; etcetera, for creating a uniform, nation-wide, workable manner for all police regions in the Netherlands, to apply the Dutch Gun Law structurally. This is missing simply, resulting in huge differences between regions.

Variables 1D23 and 2D20 focused on the instruments that could help to achieve these improvements. This lead to the following list of usable instruments. Each instrument is coupled with the effected improvement, followed by a description. The most cited instrument is named first:
- *A better screening method*: consisting of a risk factor checklist for intake-interviews and house-visits, and a valid psychological test. This influences the improvement of standard procedures to structurally find information on risk factors.

- *National applied working procedures and structured leadership*: This creates a uniform way of gaining and sharing information on risk factors.
- *A better information system with easy digital information sharing.*
- *Licensee referents for validating information*: This creates multiple information channels to validate information on risk factors.
- *House-visits by a small amount of personnel*: This instrument increases both efficiency and effectiveness of house visits because it creates uniformity and easier information sharing between personnel.
- *Increase the required amount of shooting turns to create a shift in licensees* (passionate or 'for fun').

The respondents were also asked to name the potential problems that could occur in both the organizing aspect and the possible troubles within the target-group. All respondents were convinced that there would be no problems at all occurring in the target-group. Licensees and practitioners of the shooting and hunting sport will understand that it is a social importance to change and make rules in order to create safety, but this must come with a legit explanation. In organizational context they do expect problems. These problems are: the integration of new techniques (like digitalizing information so it can be shared with others easily), they think the police are not capable of technically implementing this into their procedures. Another problem is capacity. In order to achieve the goals that are set in de Cwm. the police force lacks in capacity. So a one hundred percent score on house-visits is not feasible with the current amount of available and qualified police personnel. A third problem is knowledge and education, that is finding qualified and motivated personnel to do the administrative job of authorizing and controlling. It is hard to bring everyone's knowledge on the same level, making sure everyone for example estimates risk in the same way. In the end, it is the work of men.

4.5 Conclusion

Two questions were asked in this third phase of the research. This phase treated the use of risk factors in the execution of gun legislation in three police regions. An exploring phase, because different police regions were asked to give their view on this subject, resulting in a comparison between three police regions on the base of four leading categories to compare: Enforcement and execution of policy; contentment with policy; risk factors; and innovations. In this conclusive sector, a concrete answer will be given to the two questions. The first question about problems, weaknesses and shortcomings, and the second question about the (improvement of) embedding risk factors. The two questions will be answered by using the results of phase three, but also the results of the two other phases.

What are, according to Dutch police regions, problems; weaknesses; and shortcomings in current gun policy, focusing on risk factors?
Problems, weaknesses and shortcomings: three aspects that threat the rationality of policy. According to the in-depth interviews with the responding police regions, these aspects can be combined into three categories: the 'Variety between police regions' as a weakness; a 'lack of capacity' as a problem; and 'bad information position' as a shortcoming. All three categories will be elaborated below. To start with a variety between police regions, a weakness that has been named by all three regions and is listed as priority number one. Current policy lacks of standardized procedures, it has little or no guidelines and instructions for policy making and therefore creates a margin that leads to differences in policy making between police regions. Another issue that leads to a variety between regions is the level of knowledge and education of executing police personnel. Some employees do not know how to respond to the available margin, leading to differences in interpretation of information. A last aspect is that there is too little internally/externally information-sharing of how things are done and how things can be improved. In zero of the three responding

regions there is a structural evaluation process to improve current policy. Also there is little or no communication with other regions and external actors about the policy process. This variety between regions threats the discovering and interpretation of risk factors in such a way that they are not applied effectively. Thus, a risk approach has no use at all. The second aspect is the lack of capacity, a problem that is recognized in different ways. The priority that is given by the police regions to the tasks that come along with the Dutch Gun Law differs from region to region. There are too little available personnel, too less priority to make these tasks feasible and capacity is not classified in the right way. The Cwm. lacks in giving instruction for capacity related to goals. If the goal is to control gun-safes of every licensee annually, what capacity is needed to achieve this goal? It affects the risk approach if for instance the task of annually controlling houses is given to a large amount of police personnel, resulting in different interpretations and little knowledge in standardized procedures. The third aspect is the bad information-position of the Department of Special Laws, an important shortcoming according to in-depth interviews. There is no structured information sharing and sharing information is restricted due to the privacy law. For instance: information of someone's psychological health is not shared to the police due to the confidentiality of general practitioners.

To what extend are risk factors practically applied in policy and how can this be improved?
To give an answer to this question, the results of the in-depth interviews and the results of the policy analysis in chapter three will be combined by using the risk model of phase two and the analyzing variables. The conclusion in chapter 3.5 already mentioned the absence of clear instructions to apply the 'no fear for abuse' criterion in the Cwm. This absence results in a margin leading to on the one hand possibilities for making policy, but on the other hand creating ambiguities in policy execution. The Cwm. speaks of using different types of information like for instance: psychological state; reliability of roommates; and alcohol problems, but does not instruct how to estimate these risks. According to legislation, information on risk factors is only actively possessed during the screening of (potential) licensees, collected from two information channels, that is the police database and police reports. This information consists of earlier convictions and police reports and does not cover the risk factor model at all. Only information on a history of antisocial behavior is checked actively and information regarding other risk factors, such as an antisocial personality pattern, is discovered by incident. The Cwm. does not prescribe that during house-visits risk factors have to be estimated. A house visit is therefore just a passive information source. The results of the in-depth interviews showed that not all risk factors of the model are embedded in policy. However, some regions do make use of the margin's possibilities to apply a risk strategy. The way of application differs from region to regions. Considering the fact that there are twenty-five police regions, there are many different ways of policy making to apply a risk approach. Police region B for instance applied a structured checklist for intake-interviews. This checklist covers different risk factors such as: antisocial personality pattern; school/work; family/marital circumstances; leisure/recreation; alcohol/drug problems; mental health, by asking personal questions to the licensee. This information of course comes from one information channel and might consist of invalid information. This is one example of many ways of application differing from region to region because of a lack of rural structured instructions. There is no uniformity between regions in the risk approach, thus risk factors are barely embedded in policy. Regions are however open-minded for improvements. So the question remains how this policy can be improved so that risk factors are embedded. These improvements are connected to the answer of the first research question of this chapter, regarding the problems, weaknesses and shortcomings of this policy. It concerns the improvement of four aspects: knowledge/education; standardized, structural and rural instructions/working-processes; capacity; and the information-position. A combination of these improvements together with the right instruments, consisting of new and improvements of already used instruments can cover all risk factors according to the risk factor model. So, what improvements make sure that the risk model is applied correctly, using multiple instruments, multiple methods, multiple information channels and covering all risk factors? To begin with multiple instruments. A better screening method could be used consisting of the normal procedure of checking criminal history, together with a risk factor

checklist for intake-interviews and house-visits, and a valid psychological test. This influences the improvement of standard procedures to structurally find information on risk factors. House-visits can be done by a small amount of personnel. This increases both efficiency and effectiveness of house visits because it creates uniformity and easier information sharing between personnel. Next to the methods of screening and the extensive house-visiting, better internally and externally information-sharing can be a method to gather information on risk factors. Multiple channels can be applied by applying all methods to licensee referents for validating information on risk factors. In this way, all risk factors with the related information channels are covered: History of antisocial behavior (police database, police reports, licensee, referents); Antisocial personality pattern, antisocial cognition (Police reports, licensee, referents, psychological test, house-visit); antisocial associates (police reports, licensee, referents); family/marital circumstances (licensee, referents, psychological test, house visit) School/work; leisure/recreation (licensee, referents); alcohol/drug problem (licensee, referents, house-visit, psychological test); major mental disorder; personal/emotional distress (licensee, referents, psychological test). Also, knowledge and education in risk factors have to be available to make sure that the risk approach and the risk model are applied correctly. The same thing goes for information-sharing.

5. General conclusion, recommendations and discussion

5.1 Introduction

The previous chapters elaborated on knowledge about science-based risk factors and current legal gun legislation. Also the practical applications of risk factors have been explored by interviewing three police regions. In this way something can be said about the execution of policy and the possibility of integrating risk factors into legal gun policy. This chapter gives a general conclusion by answering the main question of this research by combining the three sub-conclusions of all three phases. From this general conclusion, both advices and recommendations are drawn. Last but not least the restrictions of this research are pointed out in a discussion and notes for further research are provided in paragraph 5.3.

5.2 General conclusion

The main question of this research is: How and to what extend can science-based risk factors of antisocial behavior be integrated in the current gun policy of the Dutch police force? This question has been separated into three research phases and five sub-questions, all answered in the previous chapters, providing an answer to this general question. The answer is parted into two different aspects because risk factors can play multiple roles in Dutch legal gun policy. The first aspect is that using risk factors opens possibilities for applying a risk approach to achieve policy goals in not only the Dutch Gun Law, but also other police related legislation. They can be used as an introduction to risk approach to decrease for instance the capacity-need and increase effectiveness of discovering risk factors. The third phase concluded that there are three major problems: Variety among police regions; lack of capacity; and bad information-position. Using a risk approach, a uniform way of estimating risks for all police regions tackles the problem of capacity because only subjects with potential risk are being investigated by a small amount of personnel. This approach however requires improvement in expertise (knowledge and education of police personnel in estimating risks) and improvement in the information position (improvement of information-sharing by renovating databases, digitalize information and making information accessible for the police). If a risk approach is applied, the focus has to lie on tackling these last two problems to achieve policy goals.

The second aspect is more practical and has been elaborated throughout this research the most. Science-based risk factors can be used as a guideline for estimating the 'fear for abuse' criterion in the Cwm. Phase one elaborated on the prediction of antisocial or criminal behavior by using risk factors. This resulted in a risk factor model with eleven categories that can be used to indicate potential risk of antisocial/criminal behavior. More combinations of categories mean a higher potential risk. Phase two and phase three concluded that Dutch legislation does not cover these risk factors at all and police regions differ a lot by filling in the margin of the 'fear for abuse' criterion to discover risk factors. Using the model as a guideline creates uniformity between regions and reduces variety in applications. There are three important advantages of the model: first, risk factors are being estimated actively. In most regions soft information on a licensee is gathered incidentally, popping up in a police report by accident. The risk factor model is a guideline for actively looking for information that is relevant for a specific risk category. The second advantage is that using the risk factor model requires the use of multiple information channels to validate information on risk categories. Most information regarding risk factors now is only extracted from the police database and police reports. More information channels like different referents of a licensee (a family member, a supervisor, a general practitioner) offer the possibility to validate and compare information on risk categories. A third important thing is the use of different methods to validate information but also to gather information from different angles. An example of using multiple

methods of data collection is to compare information on family circumstances that is gathered during a screening of a licensee, with the information that is collected during a house-visit. Table 5.1 offers an overview of the risk factor model related to the analyzing variables 'information channels' and 'methods of data collection' in a way that all risk factors are covered, combining the results of all three phases.

Central Eight"		
"The Big Four"	**1. History of Antisocial Behavior**	**5. Family/Marital Circumstances**
	Information channels: police database, police reports, licensee, referents Methods: screening (background-check, interviews, psychological test, house-visit)	Information channels: police reports, licensee, referents Methods: screening (interviews, house-visit) house-visit
	2. Antisocial Personality Pattern	**6. School/Work Circumstances**
	Information channels: police reports, licensee, referents Methods: screening (interviews, psychological test, house-visit), house-visit	Information channels: licensee, referents Methods: screening (interviews)
	3. Antisocial Cognition	**7. Leisure/Recreation Circumstances**
	Information channels: police reports, licensee, referents Methods: screening (interviews, psychological test, house-visit), house-visit	Information channels: licensee, referents Methods: screening (interviews)
	4. Antisocial Associates	**8. Substance Abuse**
	Information channels: police reports, licensee, referents Methods: Screening (background information, interview)	Information channels: police reports, licensee, referents, psychological test Methods: screening (background-check, interviews, psychological test, house-visit), house-visit
"The Additional Three"		
	9. Major Mental Disorder	
	Information channels: licensee, referents Methods: screening (interviews, psychological test)	
	10. Social Class of Origin	
	Information channels: police reports, licensee, referents Methods: screening (background-check, interviews, house-visit), house-visit	
	11. Personal/Emotional Distress	
	Information channels: licensee, referents Methods: screening (interviews, psychological test	

Table 5.1: Application of the risk factor model. Note: an explanation of all risk factors and the complete risk factor model can be found in chapter 2.4 and chapter 2.6

5.3 Advisory and recommendations

This paragraph has two functions, to advice and to recommend: Advice on how this research can be used, an additional note next to the conclusion in the previous section; and recommendations for application and ideas for further research.

Advisory:
The most important advice that results from the conclusion of this research is to apply a 'structural universal risk factor approach' in the Dutch gun legislation. Make use of 'structural' processes formulated in guidelines and instructions related to clear policy goals. Use 'Universal' applications within Dutch police regions so that every region makes use of the same structural processes. A risk factor approach has to be implemented in the Dutch gun legislation so that risk-cases can get a higher priority of attention. A risk factor approach is only effective when it is applied structurally and universally. Thus, to make this possible, two important problems have to be tackled. The focus must

be on solving problems regarding universal/structural knowledge, education of risk factors/ approach and the possibility of sharing relevant information without restrictions.

Recommendations for the application of science-based risk factors:

- Use it multidimensional:

Chapter two concluded that the risk factor model can best be used by applying multiple instruments; informants; methods; and settings. Table 5.1 on the previous page showed these variables related to the different risk factors. To summarize, in order to collect more information on science-based risk factors, the next two aspects are recommended to use:

1. Multiple informants: to validate information on risk factors, multiple referents of licensees have to provide information. For instance, information on work circumstances can be gathered from the licensee himself, his supervisor, a colleague, and a close related family member. Information on an antisocial personality can best be gathered by questioning the licensee, close related family, and a general practitioner.

2. Multiple methods: Information on risk categories can also be collected by using different methods (multiple instruments and information channels). Information gathered by doing a screening has to be compared to information that is gathered during a house-visit.

- Make knowledge universal and structural:

Knowledge: Make sure that risk factors are revealed in different levels of policy. That means: police officers who perform house-visits must have knowledge about the application of risk factors, police personnel who grant gun licenses must have this knowledge, but also policymakers and third parties like the Dutch Shooting Association and shooting clubs must know how risk factors can be discovered and how the risk factor approach works.

Universal and structural processes: All levels and actors have to make use of the same structural processes to achieve the same goal, completing information on every aspect of the model to reduce 'fear of abuse'.

- Make it valid:

Instruments that are used to indicate risk factors have to be valid. Interviews for example must be designed on the base of scientific knowledge and must be tested with experiments. The same goes for psychological tests, checklists for house-visits, etcetera. Also make use of evaluation procedures to improve validity and compare processes with other executors.

- Use of all available information:

Relate every piece of information to the aspects of the risk factor model and share it internally and externally with relevant actors. Take into account the restrictions that come along with the privacy law, but encourage sharing. For instance, rules can be made in processes for internal and external sharing.

- Focus on the "Emerging adulthood":

Give priority to collect information on licensees who are in the age group between eighteen and twenty-five. According to Arnett (2000) and Blonigen (2010), people are more vulnerable for committing antisocial behavior. Also the age crime curve of Farrington (1968) shows that crime is most committed by persons in this age category.

5.4 Discussion and further research

This research has limitations and misses certain concepts, providing ideas for doing further research on this subject, but also subject-related concepts. This paragraph first describes restrictions that

come with this research, and then a base for further research will be created by drawing concepts that could have been treated within this study. The paragraph ends by pointing out the ideas for further research.

This research is restricted on a few points. To begin with the descriptive phase one on science-based risk factors of antisocial behavior. A model with eleven risk categories has been created, showing how it can be more valid by using it in a multidimensional way. Also information on recognition of risk factors is provided in this model. However, the model sorts the categories on the base of their correlation with antisocial behavior. A restriction of this model is that the model does not distinguish different forms of antisocial behavior in a concrete manner. Also, the strength of combinations between risk categories have not been visualized in this model, does a combination between a history of antisocial behavior and drug abuse create a higher risk than a combination between an antisocial personality pattern and problems within family? Weight of categories and weight of combinations between categories are lacking in this model.

This research only explores three regions of the total amount of twenty-five police regions in the Netherlands. A general view on the differences between regions in policy determination and policy execution could be improved by interviewing more regions. In this way, the conclusion regarding the variety between regions could be strengthened. Next to police regions, also in-depth interviews with policy makers on national level could help to create an extra dimension in the comparison between legislation and practice. Also, parallel on this research, the Ministry of Safety and Justice conducted a research to the integration of risk factors into policy (Opstelten, 2012[b]). There was no information exchange between these studies. On the one hand a missed opportunity to bundle knowledge, on the other hand an opening for further research to compare the results of these two studies.

This research only focuses on quality of policy (policy design, policy determination, and policy execution). No view is given on legitimacy of policy. It is not clear how the target-group, in this case (potential) legal gun owners, feels about current policy and decisions that have been/could be/should have been made. Further research on legitimacy is definitely needed to improve the policy.

Another thing that has not been taken into account in this research is already mentioned in chapter three, the instructions given by the Minister of Safety and Justice. This information was published during the final stage of this research and consisted of instructions on collecting information by: paying attention to risk factors (clinical factors; stressful circumstances, personal factors); developing a psychological test for screening of licensees; making use of a standard questionnaire; and using references to check information of licensees (Opstelten 2012[a]). The effect of these instructions on both legislation and practice has not been taken into account. These instructions are preparative for cultural change of the current police structure into the National Police that will start in January 2013 (Onderzoeksraad voor Veiligheid, 2012; Opstelten, 2012[a]). This research gives no view on future policy.

Further research

- On 'science-based risk factors' level:
Effectiveness and efficiency in the application of the risk factor model: Further research is necessary to investigate in what way the risk factor model can be applied more effective and efficient.
Further research on risk factors relating with gun abuse: The risk factor model in this research is focused on a broad aspect of antisocial behavior. More research is necessary to investigate the correlation between factors affecting gun abuse. Then a comparison can be made with the model presented in this study and eventually the results could be integrated in this model.

Further research on instruments relating to risk factors: More research is needed on possible theoretical applications related to the categories of the risk factor model. An inventory of instruments for recognizing risk factors could help to improve the model.

Further research on differences between the weights in combinations of risk factors: The model in this study orders risk categories in rank according to their correlation. More knowledge is required on the strength of combinations between different risk categories and risk factors.

- On 'legislation' level:

Possibilities of information sharing considering privacy law: Due to the privacy law information sharing is restricted at some points. Further research can identify the available possibilities in law regarding information sharing and can recommend changes in law.

Translation of legislation into clear instructions: Research is needed on goals in legislation. Information on the feasibility of these goals can be investigated to determine in what way goals can be achieved. A translation of legislation into good executing policy could be the result.

Translation of policy goals to capacity and costs: Investigate impact of goals on personnel-capacity and costs. Investigate how legislation can be translated to concrete costs and capacity.

Impact of incidence based policy making: Research different current/historical policies that are formed due to incidents. Emphasize the impact and analyze the quality.

- On 'policy practice' level:

Further exploratory research on differences between regions: In this study, only the policy processes of three police regions have been investigated. More regions have to be investigated to determine structural differences between these regions, and discover where these differences come from.

Cause and impact of differences between regions: Further research is necessary on the causes of the differences between regions and how they affect the quality of policy execution.

Research on the use of margins in legislations: Investigate how margins are treated in different regions. Compare policy processes between regions and determine which process is most effective and efficient in filling the margin.

Structuring policy processes on effectiveness and efficiency, well structured policy processes have to be designed: Current policy processes, working processes and instructions have to be (re)designed to incorporate the risk approach that has been introduced in this study. What processes are helpful in collecting information on risk factors, and how are they most effective and efficient.

VI.   Epilogue

First I really want to thank my family, friends and my girlfriend for giving their input to this research project that I have been doing for the last couple of months. Without them listening to my ideas and being critical on my work, I never could have written this thesis. Special thanks is for Jesse Leeuwendal, who found some time in his busy schedule to check some of the contents and grammar used in this thesis.

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Sint Nicolaasga, November 19, 2011

Kevin Maurice Drost

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VIII. Respondents

Name	Organization	Date of interview
Respondent 1	Department of Special Laws, police region A	July 18, 2012
Respondent 2	Department of Special Laws, police region A	July 18, 2012
Respondent 3	Department of Traffic, Environment and Special Laws, police region B	October 4, 2012
Respondent 4	Department of Traffic, Environment and Special Laws, police region B	October 4, 2012
Respondent 5	Department of Special Laws, police region C	October 9, 2012
Respondent 6	Department of Special Laws, police region C	October 9, 2012

IX. Appendix

A. Comparing variables

Policy determination	Policy execution
1A Enforcement of policy	**2A Execution of policy**
1A3 - Policy Goals	2A2 – Policy goals
1A4 – Feasibility	2A3 – Feasibility
1A5 – Quality of policy document for execution	2A1 – Similarity determination and execution
1A6 – Evaluation	2A4 – Evaluation
1A7 – Improvement due to evaluation	2A5 – Improvement duo to evaluation
1A8 – Errors and solutions	2A6 – Errors and solutions
1A9 – Internal information exchange	2A7 – Internal and external information exchange
1A10 – External information exchange	
1B Contentment	**2B Contentment**
1B11 – Contentment with national policy	2B8 – Contentment with national policy
1B12 – Contentment with regional policy	2B9 – Contentment with regional policy
1B13 – Problems, weaknesses and shortcomings	2B10 – Problems, weaknesses and shortcomings
1C Risk factors	**2C Risk factors**
1C14 – Application of soft information	2C11 – Application of soft information
1C15 – Application strategy	2C12 – Application strategy
1C16 – Embedding of risk factors	2C13 – Embedding of risk factors
1C17 – Application of risk factors	2C14 – Application of risk factors
1C18 – Information exchange on risk factors	2C15 – Information exchange on risk factors
1D Innovations	**2D Innovations**
1D22 – Possible improvements	2D19 – Possible improvements
1D23 – Instruments	2D20 – Instruments
1D24 – Possible problems	2D21 – Possible problems

B. Interview questions (Dutch)

Interviewvragen beleidsbepalers

Feiten

1. Hoeveel zienswijzegesprekken zijn er geweest in het jaar 2011 en hoeveel zijn er in totaal geweest vanaf 2006
2. Hoeveel kluiscontroles zijn er in het jaar 2011 uitgevoerd en naar welk gemiddelde streeft u

Handhaving beleid

3. Worden er volgens u heldere doelen gesteld in de circulaire en wat zijn deze doelen precies?
4. Worden de gestelde doelen behaald? (per doel, bijvoorbeeld kluiscontroles op basis van wetgeving)
5. Vindt u de 'circulaire' een goede maatstaf voor de uitvoering van het beleid? (leidt het niet tot verwarring, te ambigue?)
6. Worden er binnen uw afdeling ook evaluaties (over het aantal geweigerden, intrekkingen, kluiscontroles, communicatie met derden) gehouden?
7. Leiden deze evaluaties ook tot verbetering van de beleidsuitvoering?
8. Worden er binnen de huidige beleidsuitvoering wel eens fouten gemaakt? (zo ja, welke consequenties en hoe worden ze opgelost?)
9. Wordt er informatie uitgewisseld met andere korpsen over de uitvoering van het beleid? Zo ja, op welke manier? Zo nee, vindt u dit noodzakelijk?
10. Wordt er informatie uitgewisseld met derden (schietverenigingen, KNSA, belangenverenigingen) over de uitvoering van het beleid? Zo ja, op welke manier? Zo nee, vindt u dit noodzakelijk?

Tevredenheid huidig beleid

11. Hoe staat u tegenover het huidige landelijke beleid, vind u dat er voldoende wordt gedaan om gebeurtenissen als in Alphen te voorkomen? (het verbieden van verschillende schietsportdisciplines, minder wapens voor jongeren, verplichte deelname aan wedstrijden)
12. Hoe staat u tegenover de beleidsbepaling en uitvoering binnen uw afdeling, vindt u dat er voldoende gedaan wordt om misbruik van wapens te voorkomen? (neemt de afdeling buiten de circulaire om nog maatregelen ter verbetering van het huidige stelsel?)
13. Welke problemen of tekortkomingen herkent u in het huidige beleid en hoe zouden deze problemen opgelost kunnen worden?

Toepassing risicofactoren in huidig beleid

14. Naast de 'harde informatie' over vergunninghouders, wordt er ook gekeken naar 'zachte informatie', zoals risicofactoren die kunnen leiden tot antisociaal gedrag?
15. Op welke manier wordt er door uw afdeling gekeken naar risicofactoren, kunt u voorbeelden noemen?
16. Worden op deze manier alle risicofactoren aangetoond?
17. Hoe wordt 'zachte informatie' gehandhaafd binnen de wet wapens en munitie, kan iemand op basis van risicofactoren worden geweigerd voor het behouden van een wapenvergunning? (is er al eens iemand op basis van het bovenstaande geweigerd?)
18. Wordt 'zachte' informatie of informatie over risicofactoren, wel eens doorgespeeld naar uw afdeling door derden zoals een schietvereniging? Zo ja, op welke manier wordt er dan met deze informatie omgegaan?

Indien nee op vraag 14:

19. Wordt er door u wel overwogen om 'zachte informatie' mee te nemen in het huidige beleidsproces?
20. Hoe wilt u dit aanpakken?
21. Worden volgens u op deze manier alle risicofactoren gedekt?

Mogelijke vernieuwingen met betrekking tot risicofactoren

22. Hoe kan volgens u het huidige stelsel verbeterd worden zodat risicofactoren geïntegreerd kunnen worden in het huidige of toekomstige beleid?
23. Welke instrumenten kunnen er volgens u voor zorgen dat alle risicofactoren aangetoond kunnen worden?
24. Zou de integratie van risicofactoren problemen op kunnen leveren? Zo ja, welke?

Interviewvragen beleidsuitvoerders
Uitvoering huidig beleid

1. *Komt volgens u de uitvoering van het huidige beleid overeen met wat beschreven staat in de circulaire Wapens en Munitie 2012? Zo nee, waar ligt dit aan?*
2. *Wat zijn volgens u de doelen die in de circulaire worden gesteld?*
3. *Worden volgens u deze gestelde doelen behaald?*
4. *Vinden er op uw afdeling evaluaties plaats? Zo ja, welke? (over het aantal geweigerden, intrekkingen, kluiscontroles, communicatie met derden)*
5. *Leiden deze evaluaties tot verbetering van de uitvoering van het beleid?*
6. *Worden er binnen de huidige beleidsuitvoering wel eens fouten gemaakt? (zo ja, welke consequenties en hoe worden ze opgelost?)*
7. *Wordt er informatie uitgewisseld met derden (schietverenigingen, KNSA, belangenverenigingen, vergunninghouders) over de uitvoering van het beleid? Zo ja, op welke manier? Zo nee, vindt u dit noodzakelijk?*

Tevredenheid huidig beleid

8. *Hoe staat u tegenover het huidige landelijke beleid, vind u dat er voldoende wordt gedaan om gebeurtenissen als in Alphen te voorkomen? (het verbieden van verschillende schietsportdisciplines, minder wapens voor jongeren, verplichte deelname aan wedstrijden)*
9. *Hoe staat u tegenover de beleidsbepaling en uitvoering binnen uw afdeling, vindt u dat er voldoende gedaan wordt om misbruik van wapens te voorkomen? (neemt de afdeling buiten de circulaire om nog maatregelen ter verbetering van het huidige stelsel?)*
10. *Welke problemen of tekortkomingen herkent u in het huidige beleid en hoe zouden deze problemen opgelost kunnen worden?*

Toepassing risicofactoren in huidig beleid

11. *Naast de 'harde informatie' over vergunninghouders, wordt er ook gekeken naar 'zachte informatie', zoals risicofactoren die kunnen leiden tot antisociaal gedrag?*
12. *Op welke manier wordt er door uw afdeling gekeken naar risicofactoren, kunt u voorbeelden noemen?*
13. *Worden op deze manier alle risicofactoren aangetoond?*
14. *Hoe wordt 'zachte informatie' gehandhaafd binnen de wet wapens en munitie, kan iemand op basis van risicofactoren worden geweigerd voor het behouden van een wapenvergunning? (is er al eens iemand op basis van het bovenstaande geweigerd?)*
15. *Wordt 'zachte' informatie of informatie over risicofactoren, wel eens doorgespeeld naar uw afdeling door derden zoals een schietvereniging? Zo ja, op welke manier wordt er dan met deze informatie omgegaan?*
16. *Wordt er door u wel overwogen om 'zachte informatie' mee te nemen in het huidige beleidsproces?*
17. *Hoe wilt u dit aanpakken?*
18. *Worden volgens u op deze manier alle risicofactoren gedekt?*

Mogelijke vernieuwingen met betrekking tot risicofactoren

19. *Hoe kan volgens u het huidige stelsel verbeterd worden zodat risicofactoren geïntegreerd kunnen worden in het huidige of toekomstige beleid?*
20. *Welke instrumenten kunnen er volgens u voor zorgen dat alle risicofactoren aangetoond kunnen worden?*
21. *Zou de integratie van risicofactoren problemen op kunnen leveren? Zo ja, welke?*

C. The risk factor model (Dutch)

"de Centrale Acht "	
1. Antisociaal gedrag in het verleden	**5. Familiale/huwelijks omstandigheden**
Negatief contact met de politie Gearresteerd voor het plegen van een strafbaar feit	Kwaliteit familierelatie, kwaliteit relatie, antisociale verwachtingen binnen familie en relatie
2. Antisociaal persoonlijkheidspatroon	**6. School en werk**
Impulsiviteit, avontuurlijkheid/nieuwheid zoekend, betrokken bij problemen, minachting voor anderen, sociale beperking, negatieve emotionaliteit, geringe vriendelijkheid, lage zelfgerichtheid, inter-persoonlijke gladheid, gebrek aan schuldgevoel, parasitaire levensstijl	Slechte prestaties op school/werk, lage betrokkenheid op school/werk, lage vorm van beloning op school/werk, lage vorm van tevredenheid op school/werk
3. Antisociale cognitie	**7. Vrije tijd en vermaak**
Identificatie met misdaad, identificatie met misdaad en geweld, identificatie met criminelen en crimineel gedrag, negatieve houding tot de wet en het justitiële systeem, in de veronderstelling dat misdaad loont, het geloof dat misdaad gerechtvaardigd is	Lage mate van betrokkenheid in anticriminele vrijetijdsbestedingen, lage mate van voldoening in anticriminele vrijetijdsbestedingen
4. Antisociale kenniskring	**8. Alcohol- en/of drugsgebruik**
Associatie met voorstanders van criminaliteit en crimineel gedrag, isolatie van tegenstanders van criminaliteit en crimineel gedrag	Problemen met alcoholgebruik, problemen met drugsgebruik
"de Extra Drie"	
Persoonlijke/emotionele stress	
Grote psychische stoornis	
Oorspronkelijke sociale klasse	

"de Grote Vier"

D. Research model