



# DESIGN AGAINST CRIME

The effects of the use of behavioural insights for dealing with complex policy problems, in this case the use of nudging in fighting undermining crime in Rotterdam Zuid in The Netherlands

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# Design against crime

The effects of the use of behavioural insights for dealing with complex policy problems, in this case the use of nudging in fighting undermining crime in Rotterdam Zuid in The Netherlands

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## Hartcore

Het hart van Rotterdam  
Uit puin en as herrezen  
Klopt weer als een speer  
En niemand houdt het tegen  
Het is de motor van het land  
De bron van alle leven  
Het middelpunt van het heelal  
Het brood waarvan we eten  
Het hart van Rotterdam  
Mag dan een kunsthart heten  
Het is het centrum van het nu  
De harde kern van heden

*Jules Deelder, Rotterdam 2013*





## Summary

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In a complex world in which hundreds of choices are presented to us every day, it is impossible to make fully rational decisions at all times. This insight is reflected in a change in behavioural science. For many years, the view of the 'homo economicus' was broadly accepted: individual decision-making was supposed to be based on rationality and utility maximization (White, 2016). Reality however turned out to be different: humans are not so rational at all. According to Kahneman, Tversky and others, people think that most of their decisions are based on rationality. In reality however, they are also influenced by heuristics (mental shortcuts), their environment and other non-rational aspects (Kahneman, Slovic, & Tversky, 1982; Kahneman & Tversky, 1984; Tversky & Kahneman, 1974). Most public policies however, are still based on the idea of a rational human being, in spite of the fact, which was just mentioned, that a great part of human behaviour cannot be explained by cost benefit analyses and that other factors influence human action as well. Classical tools of policy making which are used to influence behaviour, are therefore mainly based on the idea of people making rational decisions. These tools are 1) prohibition and commandments, 2) financial incentives and 3) warning and persuasion (van Oorschot, Haverkamp, van der Steen, & van Twist, 2013). If people do not base most of their decisions on deliberate considerations and consequently do not always act fully rational, a different perspective on how to influence behaviour and regulate public life is needed. In order to create effective policies, more aspects influencing citizens' behaviour should be considered. According to Thaler and Sunstein, a fourth way of influencing behaviour is nudging (Thaler & Sunstein, 2008; Thaler, Sunstein, & Balz, 2014). They define nudging as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008, p. 12). The idea of choice architecture applies to the environment in which people make decisions and perform certain actions.

Today, this insight is increasingly used in the public sector as a different form of influencing behaviour (French, 2011; Halpern, 2015; Rainford & Tinkler, 2011). The general aim of nudging is "to steer people's choice in directions that will improve their lives, . . . as judged by themselves" (Thaler & Sunstein, 2008, p. 5). If this is indeed the case, nudging might be a very useful additional tool in classical public policy making, especially in the case of complex policy problems. Complex or wicked problems are defined as problems which cut across boundaries (Popp, MacKean, Casebeer, Milward, & Lindstrom, 2014), in which many actors are involved and by a high degree of uncertainty (Van Bueren, Klijn, & Koppenjan, 2003). The context of these problems is highly uncertain "with regard to the nature and extent of the risks involved for individuals and society as a whole" (Van Bueren et al., 2003, p. 193). Complex problems cannot be dealt with by a single actor since no actor has all the knowledge, capacity or authority needed (Waardenburg, Keijser, Groenleer, & de Jong, 2016). Therefore, a network of actors is needed (Klijn & Koppenjan, 2015, p. 21). Moreover, a fully rational approach is inadequate for dealing with those complex problems. Therefore, nudging might be helpful in dealing with those problems since it is based on a broader picture of elements leading to human behaviour.

The use of behavioural insights in safety studies and in policies improving safety is only in an early state. Sharma and Scott (2015) argue that the use of nudging can be a way to deter people from performing criminal activities by using cues in the environment which deter crime. Therefore, nudging can be used to create a 'design against crime'. Moreover, criminal activities, especially organized crime, are among the complex problems that society is facing today. Since a fully rational approach most often does not work in dealing with such complex problems (Klijn & Koppenjan, 2015; Morçöl, 2003; Popp et al., 2014), the additional insight nudging offers might be very useful for dealing with crime related problems. Undermining crime is a form of organized crime which damages the legal institutional structures or the

informal structures which safeguard the functioning of society (Scherpenisse, van Twist, & van der Steen, 2014; Tops & van der Torre, 2014).

Flowing from the above, the research question of this study can be formulated as follows:

*What are the effects of the use of behavioural insights for dealing with complex policy problems, in this case the use of nudging in fighting undermining crime in Rotterdam Zuid in The Netherlands?*

In order to shed light on this, the literature on complex policy problems is used to analyse undermining crime as a complex problem. Also, the theory of network governance is used. The second body of literature used in this study is the one on nudging and the broader theoretical insights of behavioural science. In evaluating the effects of the use of behavioural insights, specifically nudging, a distinction is made between the direct effectiveness of the network and the indirect effectiveness, referring to the collaboration within the network. The latter aspect is added because it is argued that the better the network actors are able to collaborate, the more effective the network is (Ansell & Gash, 2007; Buuren, Boons, & Teisman, 2012), in this case meaning the better they can fight undermining crime. Network effectiveness is defined as “the attainment of positive network level outcomes that could not normally be achieved by individual participants acting independently” (Provan & Kenis, 2008, p. 230). The second, indirect, component of dealing with complex policy problems refers to the collaboration of actors within the network. Concerning network collaboration, part of the definition of Ansell and Gash (2007) for collaborative governance is used: “a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets” (Ansell & Gash, 2007, p. 544). Concerning nudging, the definition of Thaler and Sunstein is used (see above) and both the explicit and implicit use of nudging are considered. Implicit nudging is designing a choice architecture without explicitly using the concept of nudging itself, however using the same ‘techniques’.

In order to answer the research question, a case study is performed concerning undermining crime in Rotterdam Zuid (the southern area of the city). This area of the city is argued to be problematic in terms of disproportional poverty, unemployment, analphabetism and criminal activities, which are interconnected and are reinforcing each other (Commission Deetman & Mans, 2011). The problems are not unique for this area. However, the scale and intensity of the problems are. This makes Rotterdam Zuid an unusual case in the Netherlands. Moreover, the area is very diverse in terms of cultural and ethnic groups and the various neighbourhoods are each characterized by their own challenges and problems. The empirical data for this study are collected in Rotterdam Zuid where a network of actors (the Hartcore network) is fighting undermining crime. By interviewing 15 of the involved actors (working at the Police, Municipality of Rotterdam, Public Prosecution, Tax Authority and the Regional Information and Expertise Centre), analysing documents and observing meetings of the Hartcore network, it was possible to collect a rich set of qualitative data. These data were used to evaluate the effects of nudging to deal with undermining crime.

Before the research question can be answered, it has to be determined whether the network actors use nudging at all and, if so, what their experience is with the use of this in dealing with undermining crime as a complex problem. The findings of this study show that all respondents are aware of the complexity of the problem: they describe the inability to deal with the problem of undermining crime alone. They realize it is not just a safety issue but that it is part of a broader set of problems. They mention both the complexity caused by different perceptions of actors as well as by the unpredictability of developments and interventions. In general, respondents described how difficult it is to know the effects of interventions: usually they cannot be measured since it is impossible to isolate them from other developments and interventions in the area. One of the main findings of this study is the observation that



nudging was used in order to fight undermining crime in Rotterdam Zuid. It was used as one of the instruments of policy making within a mix of others. Twelve interventions are described in which (elements of) nudging are found, this concerns both implicit and explicit forms of nudging. The 'different way of thinking and influencing' of most respondents is often linked to the idea of nudging (implicit nudging). However, respondents often do not label this as such.

The influence of nudging on the network effectiveness of fighting undermining crime was found in multiple interventions. Actors mainly used social norms to trigger certain behaviour. Moreover, the influence of the surroundings was analysed to see which changes would lead to different, less criminal behaviour. Framing was mentioned as well as a way of consciously choosing certain words, telling a particular story and showing certain pictures in order to evoke certain behaviour. By making some options easier than others, the nudge of 'increase in ease and convenience' was used by some actors. The nudge of simplification was used by simplifying reality in a picture or scheme to trigger behaviour. Usually, respondents describe that it was easier to experience the effect than to measure it (sometimes it was both experienced and measured). It makes sense that effects are easier experienced than measured, because it is hard to find a direct relation between the use of nudging and its effect. Concerning the effects of nudging on the collaboration between actors in the network, less nudges were found which aimed at improving this. Especially the nudges of simplification and framing were described by respondents as positively influencing the collaboration within the network. Particular the commitment to the process and shared understanding seemed to increase because of the use of nudging. Interestingly, this shows the possibility to nudge not only others but also oneself while being aware of it.

In conclusion, the findings of this study suggest that the use of behavioural insights positively affects dealing with complex policy problems, in this case the use of nudging in fighting undermining crime. Because of the different way of thinking nudging contains, actors create different kinds of interventions in which behavioural insights are taken into account. The use of nudging has a positive effect on both the network effectiveness and on the collaboration within the network. The influence of nudging does not seem to depend on the explicit use of it; nudges which are implicitly used seem to have an effect as well.

Concerning the broader implications of this study, behavioural insights seem to offer an additional perspective when dealing with complex policy problems. Contrary to the current development of the creation of separate Behavioural Insight Units/Networks, the findings of this study suggest that behavioural insights should not be seen as a separate (fourth) way of policy making and implementation. Instead, they should be understood as something which should be incorporated in the regular view on policy making and interventions: as part of a mix of policy instruments and as part of good governance. Actors fighting undermining crime in Rotterdam did not explicitly decide to use behavioural insights in order to have more impact. Instead they used the idea, sometimes even without being aware of it, within a broader approach. In fact, nudging was most often implicitly used and some actors were still sceptical about the use of nudging as such. And yet, they still used these insights to improve their interventions.

The main challenge is how to be rational about irrationality. How can we deal with the ice berg when most of it is invisible? The ice berg symbolises both the consciousness of people: while only a small part of it is dominated by rational thinking, most of it is invisible and irrational. The ice berg symbolizes undermining crime as well: we only see a small part of it. The challenge for actors fighting undermining crime is finding ways to deal with both the invisible parts of undermining crime as well as the irrationality of people. Being more aware of the use of nudging techniques might be a first step in doing so. A first step in a design against crime.



## Preface

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It is one of the first days of my internship: at an empty looking building at the vibrant Witte de Withstraat in Rotterdam is a small celebration. Colourful balloons and enthusiastic people are the first things I notice. The walls are decorated with posters of Rotterdam and stories of people working and living there. 'A thesis about undermining crime and nudging?', people react surprised. For the first concept I'm at the right place indeed, but nudging? 'Isn't that some kind of manipulation?' Some do know what nudging is, but the combination with undermining crime is a strange one for most people. 'But how about the fly in the toilets at Schiphol Airport, or the lighting dots at the cyclists traffic light which show how long you have to wait, those are familiar?' When I gave people the classic, easy examples of nudging, suddenly it was not such a weird and abstract concept anymore. People came with all kind of examples from Rotterdam Zuid: coloured walls in the neighbourhoods, arrows at the metro station, vlogs made by the police. And the reason everyone came to this celebration: to launch a new website with stories of and from Rotterdam Zuid, to show a different side of the area and create another frame than the negative one so often used. Apparently nudging and undermining crime was not such a weird combination afterall.

This thesis marks the last milestone of my time as a student. Within the last year as a master student at the Erasmus University Rotterdam, many complex policy problems were the subjects of lectures, debates and site visits. What fascinated me most often was the actual complexity of those problems, the inability of one to have a clear overview, to really know and understand what is going on. Undermining crime is such a problem: what is it, who is to blame? Are there no ways we can deal with those problems like undermining crime more effectively?

When the concept of nudging was introduced in one of the lectures, I decided to use this concept as well. An important requirement for me was to find a topic which could use an additional perspective, not just for me but for someone out there as well. Therefore the goal of this thesis is not just to graduate and write an interesting thesis, but to actually add something to the field of practice as well. I hope interesting and, above all, useful concepts are provided in this thesis and actors within the network in Rotterdam Zuid as well as in other places, can actually use some of them.

In line with the purpose of this thesis, I am especially grateful to all the respondents who were happy to explain everything about their ways of dealing with undermining crime, their ideas and struggles. Many thanks to Martijn van der Steen, who made sure to critically reflect on the parts I wrote as well as making sure I would not get lost in all the interesting things I found on my way of writing this thesis. Thanks to Jorren Scherpenisse as well who was happy to introduce me to the fascinating world of the Hartcore network in Rotterdam. Thanks to the other colleagues at the NSOB who helped me in writing this thesis, always happy to think along and reflect critically on my texts. Moreover I want to thank Joop Koppenjan for his feedback. Last but not least, I truly want to thank my family and friends for their support during these months of writing, especially my Dad, Laura, Mirko and Tessel for critically reflecting on my texts and the helpful feedback.

I am very grateful to look back at such an interesting and good year. I hope you will enjoy reading this thesis and will find some new and useful insights.

*Myrthe van Delden*  
*Utrecht, 2<sup>nd</sup> of August 2018*

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# 1. Introduction

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In a complex world in which hundreds of choices are presented to us every day, it is impossible to make a fully rational decision all the time. This insight is reflected in a change in behavioural science. For many years, the view of the 'homo economicus' was broadly accepted: individual decision-making was supposed to be based on rationality and utility maximization (White, 2016). Reality however turned out to be different: people are not so rational at all. According to Kahneman, Tversky and others, people only think that most of their decisions are based on rationality. In reality however, they are also influenced by heuristics (mental shortcuts), their environment and other non-rational aspects (Kahneman, Slovic, & Tversky, 1982; Kahneman & Tversky, 1984; Tversky & Kahneman, 1974). Many examples can be found to illustrate this: although everyone knows smoking is very unhealthy and there are many better alternatives to McDonalds, still many people smoke and go to McDonalds (Thaler & Sunstein, 2008). People do not pick the best option by weighing all the different options, instead they find other ways to make choices by relying on their automatic system (Halpern, 2015; Kahneman, 2011; Thaler & Sunstein, 2008). Taking this into account, 'decisions' and 'choices' are not only active, rational choices but are also used to describe actions of people. Those actions can be both automatic responses as well as active, rational choices. When mentioning those concepts, both kind of rationalities are acknowledged: the 'goal means rationality' as well as the broader form of rationality in which many things 'just happen to us' and lead to certain actions.

This insight on social behaviour and individual decision making brings up questions about how to deal with them in society. If people are influenced by their environment that much and they make decisions based on their automatic system instead of rational calculations, how can they be influenced in the right way? With respect to organized crime which is undermining society, many young people get involved in those practices when they lack other opportunities. Poverty and a lack of education enhances the chance of getting involved in criminal activities (Commission Deetman & Mans, 2011). Moreover, the lack of resilience is seen as the biggest indicator for criminal activities (Jansen, 2017). Can we blame young

## **What is undermining crime?**

Undermining crime is a form of organized crime which damages the legal institutional structures or the informal structures which safeguard the functioning of society – from now on referred to as undermining crime (Scherpenisse et al., 2014; Tops & van der Torre, 2014). In English this form of crime is often referred to as organized crime with an undermining effect on society. The term undermining crime as such is not often used. In order to specify this form of organized crime however, the term of undermining crime is used here.

Undermining crime comes in different shapes: the production and trade of drugs, fraud, money laundering, human trafficking, cybercrime – all forms of criminal activities with an undermining character. An important element of undermining crime is the organized aspect of it: criminals are collaborating in networks which cut through borders of sectors and nations as well. Those networks are very dynamic which enables them to quickly respond to local challenges and possibilities. In the Netherlands, a recently published article by the newspapers the Volkskrant, states that in one out of three municipalities undermining criminal activities are taking place (Homans, 1961). In 2015 already, the NOS (the Dutch Broadcast Foundation) reported on the undermining of the local authority in one out of five municipalities in the Netherlands (Parsons, 1937). Especially in some areas, those undermining criminal networks create a parallel economy and structure, which undermines the society, the rule of law and the legal economy.



people for growing up in a poor neighbourhood with no resilience? Knowing that choices are not made in a fully rational way and are heavily influenced by environmental factors, it becomes hard to argue that those young people can be held accountable entirely. However, when a car is stolen, we feel a punishment is justified and when smuggling drugs, people should get fined. At the same time, maybe this is not the only way those kinds of practices can be addressed.

Most public policies however, are still based on the idea of a rational human being, in spite of the fact, which was just mentioned, that a great part of human behaviour cannot be explained by cost benefit analyses and that other factors influence human action as well. Classical tools of policy making are used to influence behaviour, are therefore also mainly based on the idea of people making rational decisions. These tools are 1) prohibition and commandments, 2) financial incentives and 3) warning and persuasion (van Oorschot et al., 2013). If people do not base most of their decisions on deliberate considerations and consequently do not always act fully rational, a different perspective on how to influence behaviour and regulate public life is needed. The change in behavioural economics has also led to a change in policy thinking (John, Smith, & Stoker, 2009) and the so-called 'behavioural turn' (Feitsma, 2018).

In order to create effective policies, more aspects influencing citizens' behaviour could be considered. Therefore, policy should entail ways to deal with other forms of rationality than just the 'goal-mean' form. According to Thaler and Sunstein (2008), a fourth way of policy making to influence behaviour is nudging. Nudging is defined as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008, p. 12). The idea of choice architecture applies to the environment in which people make decisions and perform certain actions (Thaler et al., 2014). For example, many people end up with the default option, either because it is the easiest or because they fail to act at all (ibid.). By defining this default option deliberately, choice architects can help people to 'make' (end up with) better choices. A classic and often used example of Thaler and Sunstein (2008; Thaler et al., 2014) for the application of nudging is the design of food in a school cafeteria. They found that "[f]oods displayed at the beginning or end of the line are more likely to be eaten than items in the middle, and foods at eye level are more likely to be consumed than those in less salient locations" (Thaler et al., 2014, p. 428). Having this knowledge, the question is what to do with it. Should the food be displayed in such a way that most profit is made or in a way that children pick the healthiest food? The example shows how small changes in the choice architecture can lead to very different outcomes. Moreover, as Thaler and Sunstein (1999) point out: "there is no such thing as a 'neutral' design" (p. 3). It is not possible to create a context which does not influence the choice of people. Whether or not people are aware of it, the architecture of choice is influencing human behaviour.

The idea of nudging and choice architecture is already used extensively in the private sector to maximise sales or profits (French, 2011; Oliver, 2013; Thaler & Sunstein, 2008). Recently, this insight is increasingly used in the public sector as a different form of influencing behaviour (French, 2011; Halpern, 2015; Rainford & Tinkler, 2011). The general aim of nudging is "to steer people's choice in directions that will improve their lives, . . . as judged by themselves" (Thaler & Sunstein, 2008, p. 5). If this is the case, indeed, nudging might be a very useful fourth additional way of public policy making (next to prohibition, financial incentives and warnings), especially when dealing with *complex societal problems*. Considering the misunderstanding of the term complexity in several studies, 'complexity' has to be differentiated from 'complicatedness' at this point. In the case of *complicated* situations, relations are understandable and causes can be determined. As a consequence, a rational approach might be sufficient in order to deal with these problems. In the case of *complex* problems, this is not enough (Klijn & Koppenjan, 2015). *Complex or wicked problems* are characterised as problems which cut across categories (Popp et al., 2014), in which many actors are involved, and by a high degree of uncertainty (Van Bueren et al., 2003). In addition, the context of these problems as well as the problems themselves are highly uncertain "with regard to the

nature and extent of the risks involved for individuals and society as a whole" (Van Bueren et al., 2003, p. 193). Complex problems cannot be dealt with by a single actor since no individual actor has all the knowledge, capacity or authority needed (Waardenburg et al., 2016). Therefore, a network of actors is needed (Klijn & Koppenjan, 2015, p. 21). Moreover, a fully rational approach is inadequate for dealing with those complex problems. As a consequence, especially nudging might be helpful in dealing with those problems since it is based on a broader picture of elements leading to human behaviour.

In certain sectors, behavioural insights are already used, like in the field of health care (Blumenthal-Barby & Burroughs, 2012; Epstein, Fiscella, Lesser, & Stange, 2010; Marteau, Ogilvie, Roland, Suhrcke, & Kelly, 2011) and the environmental sector (Thaler & Sunstein, 1999; Torma, Aschemann-Witzel, & Thøgersen, 2018). The use of behavioural insights in safety studies and in policies improving safety is only in an early state. The field of safety policy is increasingly characterized by "instruments that couple the concern for control with the freedom of behaviour . . . , because control is most effective when its underlying values are internalised by citizens. These latter nudging techniques . . . are a more sophisticated approach to achieving change in people than traditional methods of law enforcement and punishment" (Schuilenburg & Peeters, 2015, p. 3). Internalizing values is one way in which a form of nudging is used to deal with crime. However, research offers many more potential insights which might be very useful for fighting crime. Sharma and Scott (2015) argue that the use of nudging can be a way to deter people from performing criminal activities by using cues in the environment which deter crime. Therefore, nudging can be used to create a 'design against crime'. Moreover, criminal activities, especially organized crime, are among the complex problems that society is facing today. Since a fully rational approach most often does not work in dealing with such complex problems (Klijn & Koppenjan, 2015; Morçöl, 2003; Popp et al., 2014), the additional insight nudging is offering might be very useful for dealing with crime related problems. Undermining crime is one of those complex problems.

One of the most vibrant streets in the Southern part of Rotterdam is packed with colourful stores, with traffic noise, many people going for their daily shopping. Having a closer look however, the density of Money Transfer Organizations is conspicuous. Within two streets, 19 of those places can be found: some very visible, others hidden in 'normal' tabaco stores, bakeries and supermarkets. This number is especially striking because it is much higher than the average number and it is in one of the poorest Dutch neighbourhoods. After investigating those Money Transfer Organizations, 10 of them are closed because of illegal practices: one can work for multiple organizations, store money in the basement or a café next door which is used as illegal bank. It is not visible from the outside, but the mix of legal and illegal practices is undermining the legal structures and the resilience of the neighbourhood as well.

The example described above is a current problem in the Southern area of Rotterdam (Rotterdam Zuid). Those Money Transfer Organizations (MTO's) are some of the more visible forms of undermining crime. However, as the actors involved in the Hartcore network realize, this is only the tip of the iceberg. The problem is so serious that legal and social structures in the area are damaged (undermined) and the resilience of the neighbourhood is detrimentally affected. In order to deal with this complex problem, multiple actors fighting undermining crime have come together: the Police, the Public Prosecutor, the Municipality of Rotterdam, the Tax Authority, the Regional Information and Expertise Centre Rotterdam (RIEC) and the National Program of Rotterdam Zuid (NPRZ). They call themselves the Hartcore network, referring to a poem of Jules Deelder. This poem, printed on page five of this thesis, refers to the potential of Rotterdam, the heart of the city which resurrected from its own ash. Actors in Rotterdam Zuid are trying to establish this change in the Southern region of Rotterdam. They are trying to unlock the

potentials of the area and to decrease the organised criminality which has an undermining effect on the neighbourhoods. The metaphor of the iceberg is often used: the biggest part is under the water level and hence invisible. In Rotterdam, they use this metaphor to describe the problem of undermining crime and the way in which they deal with it. When trying to break down an iceberg, instead of continuously trying to cut pieces of the iceberg itself, it is much more effective to heat the water around it, so it will slowly melt. This is what the actors fighting undermining crime in Rotterdam Zuid aim to do as well: instead of just focusing on the visible aspects of the problem, trying to change the environment in which undermining crime takes place might be much more effective. Their approach is quite different from what public officials did before. In fact, instead of only focussing on more and tougher punishments, actors are now trying to change environmental factors, to increase the resilience of the area and to create different perspectives for the inhabitants.

This different way of dealing with undermining crime provides an interesting case for reflecting on the practices of crime fighting. There is a growing awareness among scientists of psychological dynamics on the behaviour of people which is increasingly included in other areas such as policy making and economic theories. Public decision makers start to understand that the main questions of behavioural psychologists also play an important role for public policy making: why do people behave the way they do? Why do you organize illegal gambling in your café when the chance of being caught by the police is quite high? Is it because of calculated choices or are people influenced by their environment as well: does it influence you where you grow up, what others in your environment do? Not only practitioners recognize the influence of the environment on people's behaviour, but also scientists understand its importance more and more. Already in 1982, Kelling and Wilson came up with the so-called 'Broken Windows Theory'. They showed that a damaged and polluted environment invites misbehaviour (Wilson & Kelling, 1982). People tend to throw their rubbish on the street more easily in a polluted environment, just as the presence of graffiti on walls stimulates small criminal behaviour (Bongers, 2014). Other studies also show that our behaviour is influenced by the environment (North, Hargreaves, & McKendrick, 1997).

### 1.1 Research question and research goal

In this study, it is researched how behavioural insights, specifically nudging can be used in dealing with complex problems. This is researched in one specific context by conducting a case study: the dealing with undermining crime in Rotterdam Zuid. As described above, undermining crime can be regarded as a complex policy problem. In evaluating the effects of the use of behavioural insights, specifically nudging, a distinction is made between the direct effectiveness of the network and the indirect effectiveness, referring to the collaboration within the network. The latter aspect is added because it is argued that the better the network actors are able to collaborate, the more effective the network is (Ansell & Gash, 2007; Buuren et al., 2012), in this case meaning the better they can fight undermining crime. The goal of this research is to add to the formulation of theory on the use of behavioural insights in the public sector, in particular to the use of nudging in dealing with complex problems. In order to do so, it is researched what the effects of nudging are on the direct effectiveness of the network and the indirect effectiveness, referring to the collaboration within the network fighting undermining crime. The latter aspect is added because it is argued that the better the network actors are able to collaborate, the more effective the network is (Ansell & Gash, 2007; Buuren et al., 2012), in this case meaning the better they can fight undermining crime. Both the implicit and explicit use of nudges is researched.

Therefore, the **research question** is:

*What are the effects of the use of behavioural insights for dealing with complex policy problems, in this case the use of nudging in fighting undermining crime in Rotterdam Zuid in The Netherlands?*

In order to shed light on this, the literature on complex policy problems is used to analyse undermining crime as a complex problem. Also, the theory of network governance is used for analysing the effectiveness of the network fighting undermining crime and the collaboration within the network. The second body of literature used in this study is the one on nudging and the broader theoretical insights of behavioural science. In order to answer the research question, a case study is performed concerning undermining crime in Rotterdam Zuid. The empirical data are collected at a network of actors (the Hartcore network) which is fighting undermining crime. By interviewing 15 of the actors (working at the Police, Municipality of Rotterdam, Public Prosecution, Tax Authority and the Regional Information and Expertise Centre), analysing documents and doing observations at meetings of the Hartcore network, it was possible to collect a rich set of qualitative data. These data were used to evaluate the effects of using nudging to deal with undermining crime.

## 1.2 Relevance

This study has both a societal and academic relevance. This paragraph explains first what the academic relevance is (1.2.1) and argues subsequently what the relevance is from a societal perspective.

### 1.2.1 Academic relevance

In the last decades, complexity has been an upcoming concept within public administration. Network theory (Kickert, Klijn, & Koppenjan, 1997; Klijn & Koppenjan, 2015; Van Bueren et al., 2003), complexity theory (Buuren et al., 2012; Gerrits, 2012; Klijn, 2008) and the theory on interactive governance (see a.o. Edelenbos, 2005; Torfing, 2012) all included complexity in public administration as a new way of looking at societal problems. All of them, emphasised the aspects of unpredictability and uncertainty of these problems. For public administration this meant that the rational approach in which calculations can solve the problem of unpredictability, came under pressure.

Simultaneously, more aspects of behavioural science were included in public administration (compair Feitsma, 2018; Grimmlikhuijsen, Jilke, Olsen, & Tummers, 2017). Different aspects of public administration could benefit from a further integration of these two fields. Some Dutch scholars describe this new wave as ‘Behavioural Public Administration’ (Grimmlikhuijsen et al., 2017): “the field of study which systematically analyses evaluative judgments, decision-making and the (intended) behaviour of public managers, public professionals and citizens during citizen-state interactions, by drawing upon recent advances in our understanding of the psychology and behaviour of individuals” (Tummers, 2018). In line with this new wave of behavioural insights, nudging is based on the theories in Behavioural Science and draws upon recent understandings of individual behaviour.

Nudging itself has been researched already quite extensively, both as a theoretical concept (Abdukadirov, 2016; Goodwin, 2012; Kahneman, 2011; Rainford & Tinkler, 2011; Thaler & Sunstein, 2008; Thaler et al., 2014) and its application to practice (Blumenthal-Barby & Burroughs, 2012; Halpern, 2015; Marteau, Ogilvie, Roland, Suhrcke, & Kelly, 2011; Schillemans & de Vries, 2016; World bank, 2014). Also within the public sector, the idea of nudging is used and researched for some years (see Blumenthal-Barby & Burroughs, 2012; Epstein, Fiscella, Lesser, & Stange, 2010; Marteau, Ogilvie, Roland, Suhrcke, & Kelly, 2011). The ideas of behavioural psychology have been used within policy dealing with crime, however nudging and choice architecture itself for the prevention of criminal activities has been mentioned only by a few scholars (Greene & Bornstein, 2013; Schuilenburg & Peeters, 2015; Teichman & Zamir, 2018). This case study of a network dealing with the complex problem of undermining crime, can add to this new wave in public administration and to the use of nudging within the public sector.

This turn in public administration is labelled by Feitsma (2008) as the ‘behavioural turn’. In line with this, an argument for the further integration of these two fields is the additional insight nudging is offering to

public policy. As this study shows, policy makers can be regarded as choice architects as well. Moreover, this study not only adds to the formulation of theory on the use of behavioural insights in the public sector, it shows how nudging can be used in addition to other instruments in practice as well. Instead of the so-called, fourth way of policy making, behavioural insights are argued here to be necessary in every public policy. This insight sharpens the further integration of the two fields and creates new starting points for further interdisciplinary research (see 6.4).

### 1.2.2 Societal relevance

For a long time, Dutch safety policies and safety problems did not mention undermining crime as a big problem. Because of its invisible character – there are almost no reports from citizens and almost no direct victims – for a long time, this form of crime has not been understood as a big societal problem (Tops & van der Torre, 2014). However, in multiple places in The Netherlands, there is a deep-seated undermining criminal structure. Criminals are meeting at hotspots and robust criminal networks are developed. Simultaneously, those places are often blind spots of governmental actors (Schram, Scherpenisse, & van Twist, forthcoming) and especially because of the absence of public authorities, those places are tempting for criminals. The Southern region of Rotterdam is such an area in which criminal activities are undermining the legal and social structures. The problems in the area are characterized as very complex (Commission Deetman & Mans) and because the program which is trying to improve the area (National Program Rotterdam Zuid) is often undermined itself, a parallel program dealing with undermining crime in the area started in 2013. There is an ongoing search for ways to structurally improve the area, to create different (legal) opportunities for residents, to change the norms and to show that ‘crime does not pay off’. Firstly, this study shed more light on the phenomenon of undermining crime in the Netherlands and shows the complexity of the problem. Moreover, it gives new insights in the use of nudging when dealing with the complex problem of undermining crime.

By approaching undermining crime as a complex societal problem, the need is stressed to deal with this problem in networks of involved actors. In these networks, alternative ways, next to the rational approach, are used in order to create real impact. Nudging as a way to deal with undermining crime can create an additional insight and might thereby broaden the current approach. Both for policy makers at the municipal and national level, as well as practitioners at the Police, Tax Authorization, Public Prosecutor and the Regional Information and Expertise Centre (RIEC, ‘Regionale Informatie en Expertise Centra’), the results of this research can be useful in improving their ways of fighting undermining crime. Additionally, this research might provide insights into the already existing approach (of fighting criminality in Rotterdam Zuid) because the implicit use of nudging is evaluated as well, next to the explicit use they are already aware of. By making actors aware of their implicit use, the actors can broaden their view. This study offers new opportunities concerning ways to deal with undermining crime. Next to the local societal relevance of this study, it can furthermore provide new insights for other networks dealing with complex societal problem, as some of the results can be transferred to other domains. For example, the use of nudging combined with other techniques of policy making is a useful insight for other networks as well. As is argued in this study, nudging takes into account the behaviour of people, both their rational as well as their automatic behaviour. This can lead to policy which is more effective because of the use of this broad approach. As is the case in Rotterdam Zuid, it can enable actors to deal more effectively with complex policy problems. This inclusion of behavioural insights in policy making means something for policy makers themselves as well: they should be open towards these relatively new insights and should be eager to see which implicit nudges they might already use so those can be made explicit. Concerning the societal relevance, this study gives mainly new insights for networks dealing with undermining crime, however is relevant as well for other networks dealing with complex problems.

### 1.3 Structure of the paper

In line with the proposed research question and the purpose of this thesis, firstly the relevant theoretical concepts are described (chapter 2). The first body of literature is complexity theory supplemented with insights from network theory and theory about network collaboration (2.1). The second body of literature describes a change in thinking within behavioural science and subsequently the concepts of heuristics, biases and nudging (2.2). Within the last part of this chapter, the symbiosis of complexity theory and nudging is explained (2.3). Subsequently, the conceptual model is illustrated and the operationalization of the most important concepts is described (3.1 and 3.2). The methodology of this study is discussed here as well (3.3). The case study of undermining crime in Rotterdam Zuid is explained and illustrated and the empirical findings are described in the next chapter (chapter 4) and illustrated with multiple examples. Subsequently those findings are analysed by using the theoretical insights (chapter 5). Based on this analysis, the research question is answered and the concluding findings are presented (chapter 6). Within this last chapter, the broader implications of this study are discussed as well (6.2). Moreover, the presented findings of this study have to be interpreted in light of some methodological limitations, those are described here as well (6.3). Furthermore, the recommendations both for science as well as for practice are named (6.4 and 6.5). Lastly, a list of references and some appendixes can be found.





## 2 Theoretical Framework

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In this section, the theoretical foundation of this research is described. Because of the two central concepts in the research question, two bodies of literature are discussed here: complex policy problems (2.1) and nudging (2.2). Firstly, the theory on complex policy problems is described which starts with a description of a change in thinking: from government to governance (2.1.1). Subsequently, the concept of complexity is researched in the context of public administration (2.1.2) and the implications for dealing with complex problems in the public sector (2.1.3). Lastly, both the external and internal component of this is discussed (2.1.4). Subsequently, the second body of literature touched upon in the research question is discussed. Firstly, a change in thinking within behavioural science is described (2.2.1) after which the idea of heuristics is explained (2.2.2). Heuristics lead to biases which are described next (2.2.3). Nudging itself is researched subsequently (2.2.4), followed by the use of it within the public sector (2.2.5). Lastly, the symbiosis of the two bodies of literature is explained in the context of this study (2.3).

### 2.1 Complex policy problems

The body of literature used in this thesis concerning complex policy problems is derived from both public administration and complexity theory. To explain the idea of complex policy problems, a change in thinking about public administration is explained, as well as the important concepts of complexity theory and public administration.

#### 2.1.1 From government to governance

The growing complexity in society has led to challenges in the public sector and to a change in public administration. Complex or wicked problems are challenges in society which are very hard to deal with since they cut across existing disciplines, policy areas and authority and geographical jurisdictions (Keast, Mandell, Brown, & Woolcock, 2004). Moreover, these problems are wicked not only because of the lack of knowledge about the causes, but even more so because of the diverting and sometimes even clashing interests and perceptions of the actors involved (Klijn & Koppenjan, 2015). Simultaneously, the complexity is caused by uncertainty about the way in which problems will evolve or can be solved (ibid.). Those complex problems challenge the government to take up a different role. It is characterized by governing mechanisms which do not rest solely on the authority of the government but connect different actors operating within different sectors (Milward & Provan, 2000). This shift from government to governance has been researched by multiple scholars (see Keast et al., 2004; Klijn & Koppenjan, 2015; Milward & Provan, 2000; Peters & Pierre, 1998; Popp et al., 2014; Rhodes, 2012) in which many came up with a slightly different definition of this new concept. An often used description is the one of Klijn (2008, p. 507): "Governance tends to emphasize the horizontal relationships between governmental organizations and other organizations. Governance is the process that takes place within governance networks comprising webs of relationships between government, business and civil society actors". Klijn and Koppenjan (2015, p. 11) define governance networks as "more or less stable patterns of social relations between mutually dependent actors, which cluster around a policy problem, a policy programme, and/or a set of resources and which emerge, are sustained and are changed through a series of interactions".

With the shift from government to governance, complexity became a central element in public administration (Klijn & Koppenjan, 2015; Klijn, 2008; Peters & Pierre, 1998; Rhodes, 2012). Complexity can be distinguished from complicatedness. Complicated systems consist of many elements as well but can be understood by calculation and analysis (Klijn & Koppenjan, 2015). Complexity goes beyond this stage of stability and predictability because of the dynamic nature of problems (Gerrits, 2012). Consequently, the

causes and outcomes of complex problems cannot be fully predicted (Gerrits, 2012; Klijn & Koppenjan, 2015; Morçöl, 2003).

### 2.1.2 Complexity theory and public administration

As many theories, complexity theory is a collection of different ideas and theories. However, all start with the notion of complexity and “the idea that the whole (the system) is more than the sum of the parts (the individual agents), while, at the same time, developments of the whole stem from the (interaction of the parts)” (Klijn, 2008, p. 301). As Gerrits (2012, p. 16) puts it: “the complexity of this world arises from the fact that the world is an enormously diverse place where local interactions between elements always render new and different outcomes”. Complexity theorists focus more on dynamics and changes of a phenomenon than on the stable elements and given picture (Teisman & Klijn, 2008). “It is assumed that phenomena like policy, decision making and institutions evolve. . . . A complexity theory is more focused on making films of how phenomena develop under a variety of influence” (Teisman & Klijn, 2008, p. 288). Next to the idea of dynamics and changes, the notion of complexity implies the idea of open systems: “... the inter-relationship, inter-action and inter-connectivity of elements within a system and between a system and its environment. . . . Complexity is therefore associated with the intricate inter-twining or inter-connectivity of elements within a system and between a system and its environment” (Chan, 2001, p. 1).

From complexity theory, some elements are interesting for organizational science and public administration in particular. Firstly, *nonlinearity* refers to the idea that there is a “lack of a direct or proportional relationship between the individual inputs and the aggregation of those inputs in the overall dynamics of the system” (Gerrits, 2012, p. 83). A small change can trigger a chain of reactions within a bigger system (Jervis, 1998). For public administration this means that developments are most often not driven by one single force but evolve in a nonlinear way (Teisman & Klijn, 2008). This can be caused by the self-organizing capacity of actors. Structures emerge through *self-organization* and are maintained without external control (Buuren et al., 2012; Gerrits, 2012; Grobman, 2005). This can lead to systems which are rather closed and sometimes hard to steer or govern (Klijn, 2008). Secondly, these dynamics are caused by *feedback loops*: either positive (reinforcing) or negative (dampening) (Gerrits, 2012; Sterman, 2000). Positive feedback leads to change in the system because an incentive is reinforced (Gerrits, 2012). Negative feedback is self-correcting since it has a dampening effect (ibid.). Thirdly, to understand developments of complex systems, *path dependency* is an essential concept. The key is that the historical evolution of a system determines to a certain extent its future (Buuren et al., 2012). This implies that changes are often in line with previous steps since it is hard to leave a certain route a system has once selected (Gerrits, 2012). The concept of path dependency is directly linked to the idea of *increasing returns* (ibid.). “In an increasing returns process, the probability of further steps along the same path increases with each move down that path. This is because the relative benefits of the current activity compared with other possible options increase over time. To put it a different way, the costs of exit- of switching to some previously plausible alternative- rise. Increasing returns processes can also be described as self-reinforcing or positive feedback processes” (Pierson, 2000, p. 252).

### 2.1.3 Implications for dealing with societal problems

In line with the described concepts above, the question is not whether complexity exists, the question is how to deal with it. To quote Gerrits (2012, p. 18): “complexity is not a choice, it just is”. This applies to the public sector as well: thinking about the world as a complex place in which nonlinearity, feedback dynamics and path dependency are determining for many developments, the approach of governments should fit this as well. Still too often, a simplistic, machine metaphor is used to explain the world and therefore the way in which we plan and organize (Anderson, 1999; Gerrits, 2012; Grobman, 2005; Klijn &

Koppenjan, 2015). Instead, organizations and projects should be perceived as complex systems in a complex environment, according to Grobman (2005). By using the machine metaphor, projects are organized as if the world works in a predictable way and a predefined plan will work out as such. In reality however, most projects have high overruns both in costs and in time and things hardly ever go as planned (Gerrits, 2012). Following Anderson (1999), the insides of complexity theory should be used to adopt a different way of thinking about organizations as open systems.

Adopting the idea of open systems and nonlinearity, planning and control might be a limitation for organizations in terms of their adaptability. Too much freedom on the other hand “might push the organization over the tipping point into chaos” (Grobman, 2005, p. 374). An organization should therefore invest in innovation and learn to be able to adapt to changes in the environment (Lewis, 1994). Moreover, diversity and uncertainty should be valued over fixing and synchronizing everything (Grobman, 2005). Because of the influence of neighbouring systems, the awareness and monitoring of the context is very important (Lewis, 1994, p. 374). In complexity theory, the context is often described as very important for complex systems (Teisman & Klijn, 2008). For public administration, these insights might help to see “public decision making in relation to its environment” (Gerrits, 2012, p. 49). Another element of complexity theory, described above, is path dependency. This concept can help to explain certain developments: by considering the past of actors, collaborations and projects, the present and future can be put in a different light. It can help to make films of governance processes (Teisman & Klijn, 2008) instead of a snapshot of just one moment.

All of this is linked to *system thinking*: a different way of thinking about actors and organizations in their environment. Instead of focussing on players and isolated components, the focus is on processes and interactions (Gerrits, 2012). This is very contrasting to the idea of top down management and the manageability of organizations. From a complexity point of view, systems are unmanageable and because “dynamics, self-organization and emergence are the norm, adjusting to these changes is often a wiser strategy than trying to get a grip on them” (Klijn, 2008, p. 313).

#### 2.1.4 Collaboration within networks

From a complexity perspective, complex policy problems cannot be dealt with by one actor. This actor simply does not have all the required knowledge or power to deal with the problem on his own. Governance networks are seen as a way of dealing with complexity in society. Actors within a network have to collaborate in order to share knowledge and combine expertise. This form of collective action is often described as collaborative governance (Ansell & Gash, 2007; Buuren et al., 2012). A well-known definition of collaborative governance is given by Ansell and Gash (2007, p. 544): “a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets”. Actors joining such a collaborative governance process are mutually dependent (Klijn & Koppenjan, 2015; Torfing, 2012) which makes networks horizontal and self-organizing (to a certain extent) (Rhodes, 1996). This means that decision making in networks is a very complex process which is caused, among other reasons, by different perspectives actors have and the fact that they are used to different structures and rules (Klijn & Koppenjan, 2015).

Although it is hard to define factors which lead to a good collaboration in networks, Ansell and Gash (2007) have developed a cyclical process of collaboration which shows factors influencing the collaboration in networks. They mention the following factors:

- ❖ Face-to-face dialogue: this leads to ‘thick communication’ which is necessary for “building trust, mutual respect, shared understanding, and commitment to the process” (Ansell & Gash, 2007, p. 558).
- ❖ Trust-building: this is essential in the whole process but especially important to be recognised by leaders because building trust among stakeholders is needed for a good collaboration.
- ❖ Commitment to the process: “stakeholders’ level of commitment to collaboration is a critical variable in explaining success or failure” (Ansell & Gash, 2007, p. 559). It means that stakeholders believe that collaboration is the best way to achieve their goals and desirable policy outcomes. This can also be described as ownership to the process, which means that there is a shared responsibility for the process.
- ❖ Shared understanding: at a certain point during the process, all stakeholders must have developed a shared understanding of what their collective goal is, how problems are defined and what possible interventions are.
- ❖ Intermediate outcomes: small wins are important in a collaborative process since this is “essential for building the momentum that can lead to successful collaboration” (Ansell & Gash, 2007, p. 561)

#### 2.1.5 Effectiveness of networks

The high degree of instability and uncertainty in networks can lead to very slow and ineffective processes. In order to prevent this, actors should try to create (some) stability in a network. Milward and Provan (2000, p. 370) argue that “network effectiveness will be highest under conditions of general network stability” since it increases the probability of the development of shared norms and ways of solving dilemmas. Actors can do this by trying to bridge different ideas and norms while being aware of the different perceptions at stake (Klijn & Koppenjan, 2015). Network effectiveness can be defined as “the attainment of positive network level outcomes that could not normally be achieved by individual participants acting independently” (Provan & Kenis, 2008, p. 230).

In practice, network level outcomes are hard to measure. Especially when dealing with complex policy problems, outcomes cannot ‘just easily’ be measured, as is the case with simple policies. Because of the lack of hard results and measurements in complex policy problems, accountability of policy dealing with complex problems can be therefore problematic as well. In order to be able to justify policy and behaviour dealing with these kind of problems, the idea of ‘enriched accountability’ (‘Rijker Verantwoorden’) was introduced in the Netherlands (Bos & Groen, 2015; Groen, Nap, & Vos, 2018). The central idea is that accountability should be much broader than just a presentation of numbers because numbers give a distorted picture of the complex reality. Instead, real cases should be central through stories, pictures and people, all in relation to the purpose of the policy. Purposes can differ between actors, but this is always the case in reality. In line with this idea, effectiveness is not only about the ‘hard’ results which can be measured, but also about expected effectiveness and experienced effectiveness as well. By taking those aspects into account as well, the less measurable stories of actual people working in the field become part of the effectiveness of policy as well.

## 2.2 Nudging

The second body of literature used in this study is the one of behavioural science. In order to explain the concept of nudging, a couple of steps have to be taken. Firstly, this is a change in behavioural science. Subsequently the concepts of heuristics and biases are explained after which the concept of nudging itself is discussed. Because the use of it is in a public context, governmental nudging is added as well.

### 2.2.1 From 'homo economicus' to 'homo sapiens'

For a long time within economics, humans were seen as rational actors, who are trying to maximize their own utility. They would be able to make the optimal decisions by making full rational calculated choices (see Homans, 1961; Malinowski, 1922; Mauss, 1925; Parsons, 1937). Also within policy making, this idea is often applied: "people consider all possible costs and benefits from a self-interested perspective and then make a thoughtful and rational decision" (World bank, 2014, p. 3). The rational picture of humans influences the way in which policies are designed: choice options are expanded and actors are triggered by incentives based on market forces and privatization (Schillemans & de Vries, 2016). Policies based on these ideas often results in disappointments about their effects (Overman, 2016). However, changing insights in human behaviour and decision making have led to a different picture of humans. Instead of the rational 'homo economicus', people are better described as 'homo sapiens': many decisions are made automatically and this 'mindless choosing' is influenced by many factors next to our own rationality (Thaler & Sunstein, 2008). According to Van Dijk and Zeelenberg (2009), the rational choice theory is mainly a normative theory: it explains the choices people should or should not want to make, not the choices people actually make. Often people make different choices than the ones that would be best from a rational perspective. The concept of 'automatic thinking' explains why humans make these apparently irrational decisions: next to calculations, people are influenced by psychological and social aspects like mental models and social thinking (World bank, 2014). Often, decisions are intuitive, automatic and emotional instead of rational calculations. Partly this can also be explained by the 'lack of willpower': people want to be healthy and sporty but are tempted by sugary food and having lazy afternoons (van Dijk & Zeelenberg, 2009). Other decisions are taken automatically: people have habits and therefore repeat certain behaviour over and over again. Because those habits are part of our unconscious system, education and information are not always effective here (ibid.). Kahneman and others (1972; 1974) developed the idea of a system which is rather unconscious and automatic, next to one which is rather conscious and rational.

#### **Different terms to describe the 'homo sapiens'**

Within the literature, different terms can be found to describe the idea that people's behaviour is explained by more than full calculated choices. Many use the concept of 'bounded rationality' (see Kahneman, 2003; OECD, 2017; Rainford & Tinkler, 2011; Sunstein & Thaler, 2003; World bank, 2014) to describe this: people are unable to process all information available and therefore fully understand a situation or consequences of decisions they make (John et al., 2009). Others use the concept of 'irrationality' (see Schillemand & de Vries, 2016) to indicate the predictability of irrational human behaviour on which choices are based. According to Sunstein (2018) however, this is not the right term when talking about nudging. A broader concept which is often used as well, covers the idea of human action caused by different kinds of rationalities: next to the economical one, there is a more automatic, social version. Thaler and Sunstein (2008) mainly use the division Kahneman and Tversky (1984) came up with: the automatic system versus the reflective system (both are explained later on more extensively). In this sense 'mindless choosing' covers the idea quite well, referring to different aspects leading to human behaviour than just the rational mind. Being aware of the different concepts used in the literature, the last concept is used here.

The central idea of this approach is that there are two kinds of thinking: one which is automatic and intuitive, the other is rational and reflective, see table 1 (Thaler & Sunstein, 2008). The first system, the automatic or affective one, is characterized by rapid and intuitive decisions (Kahneman, 2011; Klucharev & Smidts, 2009; Thaler & Sunstein, 2008). Decisions are taken before people even think of it, they are based on our instinct, on 'gut feelings'. This system is used when we have to dodge for something, when we see something we like or if we speak in our own language. Actions resulted from this system are "uncontrolled, effortless, associative fast, unconscious and skilled" (van Oorschot et al., 2013). The actual reasoning is done in our second system, the reflective system. This system is more self-conscious and deliberate and is used for the actual thought-through decisions (Thaler & Sunstein, 2008). This way of thinking is not as fast as the first one (Klucharev & Smidts, 2009) and results into actions which are characterized as self-aware, rule-following, controlled and effortful (van Oorschot et al., 2013). It is used for (higher) mathematical calculations or to figure out the shortest route on a map.

<i>Automatic system</i>	<i>Reflective system</i>
Uncontrolled	Controlled
Effortless	Effortful
Associative	Deductive
Fast	Slow
Unconscious	Self-aware
Skilled	Rule-following

**Table 1 - two cognitive systems (Thaler & Sunstein, 2008, p. 22)**

However, we think we use this system much more than we actually do. Very often, we think of making a deliberate decision when we actually rely on our intuition and automatic system. "[T]he automatic system influences most of our judgments and decisions, often in powerful and even decisive ways. Most people, most of the time, are not aware of many of the influences on their decisions" (World bank, 2014, p. 6). Often, we make mistakes because we rely too much on the automatic system (Thaler & Sunstein, 2008, p. 22). As Kahneman (2003, p. 1450) concludes, "people are not accustomed to thinking hard, and are often content to trust a plausible judgment that quickly comes to mind".

## 2.2.2 Heuristics

Our automatic system does not work randomly. In fact, most human decisions are very well predictable (Schillemans & de Vries, 2016). People develop systems which they rely on and which offer easy ways of decision making. Those mental models are not created by people themselves, instead they are based on worldviews, concepts, stereotypes, categories, prototypes, identities and causal narratives which people draw from their environment (World bank, 2014). "Mental models affect what individuals perceive and how they interpret what they perceive" (ibid., p. 11). Those mental models or rules of thumb are called heuristics. The idea of heuristics and what it means for human thinking has been developed by Kahneman and Tversky (1974). They came up with three main heuristics – anchoring, availability and representativeness (Thaler & Sunstein, 2008).

**Anchoring** is a way of creating mental shortcuts by estimating something based on a certain starting point. The value of this starting point is influencing the outcome (Tversky & Kahneman, 1974). This value can be the result of the way in which something is formulated or a partial computation (ibid.). An example used by Thaler and Sunstein (2008, p. 26) is an experiment in which students were asked two questions: 1) How happy are you? 2) How often are you dating? Asking the questions in this order, the correlation between the questions was quite low (.11). However, when the question about dating was asked first,

followed by the happiness question, the correlation was much higher (.62). Apparently, when students first think of their dating life, it influences the way they judge their happiness.

Another form of anchoring which influences decision making is by setting norms. A telling example is the way in which the amount of a possible donations is presented (Thaler & Sunstein, 2008, p. 26). Typically, a charity gives a range of options such as €25, €50, €75, or 'other'. It turns out that people will donate more money when a range is presented like €100, €150, €200 or 'other' than the first range. Although in both forms they can still fill in the amount they actually want to give, because of the 'other' part, however, the range itself is influencing the behaviour of the donator because it sets a different norm.

**Availability** is another heuristic and is a rule of thumb that is used by people to assess risks. When an event is easier to imagine, the subjective likelihood increases (Carroll, 1978). "Availability is a useful clue for assessing frequency or probability, because instances of large classes are usually recalled better and faster than instances or less frequent classes" (Tversky & Kahneman, 1974, p. 1127). People use this mental model when they assess the likelihood of a risk by asking themselves how many examples come to their mind (Thaler & Sunstein, 2008). The more examples they have in mind, the higher they will assess the risk. After people have been involved in a car accident, they would assess the risk of it as being much higher than before because they are (now) familiar with the threat (Thaler & Sunstein, 2008, p. 27). The same applies to climate change: people try to answer the question whether they should fear it by thinking of examples (Tversky & Kahneman, 1974). This heuristic helps to explain differences in risk perceptions between groups and nations (Sunstein, 2006). The chance that people buy an insurance for natural disasters increases significantly when they have experienced one recently, regardless of the risk they are actually facing (Thaler & Sunstein, 2008). Problematic of this heuristic is the fact that "availability is affected by factors other than frequency and probability. Consequently, the reliance on availability leads to predictability biases" (Tversky & Kahneman, 1974, p. 1127).

Two biases that are closely linked to the availability heuristic are salience and familiarity (Sunstein, 2006; Thaler & Sunstein, 2008; Tversky & Kahneman, 1974). Those biases also influence the way in which people assess risks. Familiarity has to do with the extent to which someone is familiar with a risk. Some examples of this bias are already given. Closely linked to familiarity is salience: when people see a house burning down, it has a far greater impact on their risk assessment than when they read about it in a newspaper (Kahneman, Slovic, & Tversky, 1982).

The last heuristic is **representativeness** (Tversky & Kahneman, 1974). This rule of thumb is used by people to estimate the likelihood or probability of something to happen (Bar-Hillel, 1984; Grether, 1980). "The subjective probability of an event, or a sample, is determined by the degree to which it: (i) is similar in essential characteristics to its parent population; and (ii) reflects the salient features of the process by which it is generated" (Kahneman & Tversky, 1972, p. 430). For example, people think a man in a blue suit is more likely to be a lawyer than a man in shorts, just because the man in the blue suit matches more with the image people have of lawyers. Sometimes this kind of heuristic is called the prototype heuristic (World bank, 2014). The use of this heuristic can lead to serious misperceptions: "this approach to the judgement of probability leads to serious errors, because similarity, or representativeness, is not influenced by several factors that should affect judgements of probability" (Tversky & Kahneman, 1974, p. 1124). This is illustrated very well in an example about 'cancer clusters', given by Thaler and Sunstein (2008, p. 34): sometimes, in particular neighbourhoods, the number of people diagnosed with cancer is disproportionately high. Often in such a case, this is investigated as a possible 'epidemic' of cancer. This so-called 'cluster' can be explained by random fluctuations, however because of representativeness heuristics, people can see causal patterns in situations like this which are actually not present.



### 2.2.3 Biases

Biases are systematic mistakes which are caused by heuristics (Croskerry, 2002; Tversky & Kahneman, 1974; World bank, 2014). Within the literature, many different biases are described. Some are linked to the heuristics described above, however others can be linked to the general influence of framing – the use of mental models. The ones discussed here are the most important in the context of public administration.

**Framing/presentation-bias** – people are influenced to a great extent by the way in which something is framed or presented. In general, people are biased because of the frame they use. They do so in order to be able to organize experiences and distinguish between things they have to take into account and things they can ignore (World bank, 2014). People simply need those frames to survive and most often they work very well. In some cases however, important information is ignored or the frame influences the decision making disproportionately (ibid.). A great example is given by Thaler and Sunstein (2008, p. 39): a doctor says to a patient: ‘after five years, of a hundred patients who had this surgery, ninety are still alive’. When he frames it differently and says: ‘after five years, of a hundred patients who had this surgery, ten are dead’, people will react differently, although the statements are exactly the same. Framing works on two levels: as a frame people use themselves and as a frame which is presented to them (Kahneman & Tversky, 1984; World bank, 2014). The latter is the frame which is used to describe and present choices to people (like in the example about the surgery). The first one is about interpretation and mental editing. “A frame is also the interpretation that decision makers construct for themselves, based on the way they mentally edit and interpret the information they receive. When situations are complex, ambiguous or entail missing information, default assumptions and other “mental models” that individuals bring to a problem influence what they pay attention to and how they interpret what they perceive. Framing in this sense is a part of decision making” (World bank, 2014, p. 27).

**Overconfidence bias** – this bias is about the overconfidence people have in their own abilities, chances and capacities (OECD, 2017; Thaler & Sunstein, 2008; World bank, 2014). For example, 90% of all drivers think they drive above average and nearly everyone thinks they have an above-average sense of humour (ibid., p. 35). It shows that people are unrealistically optimistic when it comes to themselves, even when they are fully aware of the statistical facts (van Oorschot et al., 2013). This can explain a lot of individual risk taking, when it comes to small guesses like luck in the lottery, to choices which are much more fundamental. Entrepreneurs starting a new business estimate their chance of failing much lower than the average: they estimate that their chance of success is 90% and simultaneously say to be aware of the 50% success rate of typical starting businesses (Thaler & Sunstein, 2008, p. 35).

**Confirmation bias** – linked to overconfidence is the confirmation bias. It is the tendency of people to filter and interpret information in such a way it fits their own framework; they tend to ignore or underappreciate information which is presented in probabilities (World bank, 2014, p. 18). It is linked to the tendency of people to hold on strong beliefs they have and ignore information which might prove them wrong. Information is automatically interpreted in such a way that it support their beliefs and therefore creates biased information search (Dawson, Gilovich, & Regan, 2002).

**Present or status quo bias** – this bias is caused by the tendency of people to stick to the current situation (Thaler & Sunstein, 2008). Samuelson and Zeckhauser (1988, p. 8) conclude that “individuals disproportionately stick with the status quo”. Doing nothing or sticking with the status quo happens a lot when it comes to people’s health plans and retirement programs (ibid.). It applies to small habits as well: kids tend to sit at the same spot every day in class, even when they do not have to (Thaler & Sunstein, 2008). The present bias results in inconsistent choices as well because people tend to overweight the present relative to the future (World bank, 2014). Often costs in the present have to be made to reach

certain future goals, however the present costs are more salient than the ones in the future (ibid.). This bias can easily work against people when others explode the status quo. The automatic enrolment of subscriptions is an example of this. Another way is the default option: people tend to stick to the option in which they are automatically enrolled. This way of steering is discussed later on because it is a powerful nudge as well.

**Loss aversion bias** – people make systematic mistakes because they hate losses. “Roughly speaking, losing something makes you twice as miserable as gaining the same thing makes you happy” (Thaler & Sunstein, 2008, p. 36). When something is presented as a loss, people experience it as a bigger impact than when they count the same thing as a gain (Kahneman & Tversky, 2013; World bank, 2014). This is linked to the anchoring heuristic: people take a reference point to judge whether a change is a gain or a loss, rather than that they take an absolute value to base their decision on (World bank, 2014). A good example of this is an experiment which was done with students (Thaler & Sunstein, 2008, p. 37): half of the group received a coffee mug, the other half got chocolate bars. They cost about the same and in pre-tests, students were as likely to choose the chocolate as the mug. It turned out that when students got the opportunity to switch from a chocolate bar to a mug or vice versa, only one in ten switched (ibid.). We simply do not want to change a current situation when we face the risk of losing something.

**Following the herd; social norms and rules bias** – humans are sensitive for what others do and think. We simply like to conform to the group (Thaler & Sunstein, 2008). According to Postmes, Steg and Keizer, (2009) the influence of social norms on human behaviour cannot be overestimated: although we think we are not influenced by it extensively, we actually are. They give the example of a research of Nolan and others (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008) which shows that when people are asked what the main reason for saving energy is, they mention environmental reasons and saving money. Moreover, the behaviour of others is the least important reason they argue. This study however shows that the usage of energy of ‘the neighbourhood’ is the main indicator for the usage of energy of people. It is one of many showing that social norms influence human behaviour extensively. Another research showing this was done by Solomon Asch (1955). He asked people to do an easy test and answer honestly. They almost never errored when they did not see the answers of others. However, when they did and all the others (all strangers) gave an incorrect answer, people errored more than thirty percent of the time (Asch, 1955; Thaler & Sunstein, 2008). Although people knew the answer they were giving was wrong, they still did so because of social pressure. Many experiments like this one show the same: when everyone around you does something, most probably you will do the same (Thaler & Sunstein, 2008). Thaler and Sunstein (2008, p. 63) describe this as the problem of ‘collective conservatism’: “the tendency of groups to stick to established patterns even as new needs arise”. Linked to this is ‘pluralistic ignorance’: we think we do something because we like it, actually we do so because others do so (ibid.).

### **Behavioural Economics ≠ Behavioural Insights ≠ Nudging**

Those different concepts are often used as interchangeable and therefore similar. Although they are connected, they are not the same. In the report of the European Commission (Sousa Lourenco, Ciriolo, Almeida, & Troussard, 2016, p. 10) this is explained very well: “Behavioural economics is a scientific discipline that applies psychological insights into human behaviour to explain economic decision-making. [Behavioural Insights] result from multidisciplinary research in fields such as economics, psychology and neuroscience, to understand how humans behave and make decisions in everyday life”. The concept of nudging was originally defined by Richard Thaler and Cass Sunstein (2008, p. 12) as “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives.” For example, changing the position of food on a restaurant menu can have an effect on consumer choices. Nudging is one of the several behavioural techniques policy-makers can use to direct people towards ‘better choices’, without using bans or other expensive and time-consuming alternatives”.

#### 2.2.4 Nudging as a way of dealing with heuristics and biases

Clearly, there are many ways in which human decision making is based on systematic mistakes. People rely to a great extent on their automatic system, which leads to certain mental shortcuts (heuristics) and causes those systematic mistakes (biases). If people rely on their automatic system and we do not want them to get into too much trouble (for example get involved in criminal activities), “we need to consider what the tendencies of people’s automatic system in specific situations are and ask what is likely to happen if people rely on their automatisms and reflections” (van Oorschot et al., 2013). Since people lack stable and clear preferences and are actually strongly influenced by the context in which they make their choices, designing a ‘better’ context can help people making better and more sustainable decisions (Sunstein & Thaler, 2003). Next to this problematic aspect of ‘decision making’, this knowledge creates opportunities to influence behaviour. Since every design influences decision making, there is not such a thing as a neutral design by which people are not influenced (Thaler & Sunstein, 2008). Designing a context in which people make decisions is what Thaler and Sunstein call ‘choice architecture’ (ibid.). The size of these designs can vary from smaller contexts like a fly in a urinal, to larger contexts like the design of a new school cafeteria (Thaler & Sunstein, 2008). The example referred to is the image of a little fly in the urinal in the men’s room at Schiphol Airport, in Amsterdam. “It seems that men usually do not pay much attention to where they aim, which can create a bit of a mess, but if they see a target, attention and therefore accuracy are much increased” (Thaler & Sunstein, 2008, p. 4). This fly can be classified as a nudge. Thaler and Sunstein themselves define a nudge as “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives” (2008, p. 6). Important for a successful nudge is that the actual options do not change, but only the way in which they are presented. For different heuristics and biases, nudges are designed to reduce the risk of the automatic system making systematic choices.

One is the **default option**: people often choose the path with the least resistance (2008, p. 6). A default option is the standard option in which people are enrolled automatically when they do nothing (Abdukadirov, 2016; Rainford & Tinkler, 2011; Thaler & Sunstein, 2008; World bank, 2014). Default options are powerful nudges: people still have the opportunity to choose another option, however a large number of people can be expected to end up with the default one, whether or not this is actually the best option for them. An alternative to the design of a default option is the required choice. In this case people have to choose instead of being enrolled automatically. This option favours the freedom of choice, especially in complex cases. However, a good default option might be the best way to go (Thaler &

Sunstein, 2008). In this way, the bias of people to stick to the status quo and choose the option most people do, can be used to influence behaviour.

Linked to the expected error of systematic mistakes, is the design of **giving feedback and warnings**. We know that people tend to make their choices based on what others do or based on the present instead of the future. Moreover, framing is affecting their choices. Taking this into account, it might help a lot to give people feedback so they can improve their performance (Thaler & Sunstein, 2008). Especially in complex decision making, people have a hard time making a good decision and often base their decision on biases (ibid.). One way of preventing the negative consequences of this is by giving feedback on their choices (World bank, 2014). This can be done during the decision making process itself or when the decision is already made. However, the latter option asks for room in the system to review a decision. Barriers to change behaviour should be reduced as well (ibid.). Important feedback mechanisms are the ones telling us what is about to go wrong. A laptop or phone is warning us when it is running out of battery and that we should do something to prevent it from shutting down (Thaler & Sunstein, 2008, p. 99). Warnings like those on cigarette packages are meant to influence behaviour as well. Another way of warning is by giving a small version of the real picture so it is possible to already assess whether the real situation is the way we expect it to be. This is what is done by digital cameras nowadays: they show you a small version of the actual picture you have taken, so you can immediately see how well it matches with your idea of the real picture of you have to change something (ibid.). Something similar can be done with more complex systems and decisions.

Linked to giving people feedback to help them improve their decisions, is by **structuring complex choices and simplification: make it easier**. If decisions are very complex, we are tempted to stick to the status quo so we do not have to make an active decision (van Oorschot et al., 2013). When choices are simple and there are only a couple of well-understood options, people are able to make a good comparison. However, when the number of choices increases, more dimensions are added. Especially when we cannot oversee the consequences anymore, people are very likely to use simplifying strategies based on biases to make choices (Thaler & Sunstein, 2008). Choice architecture can help a lot in these cases because it can structure information in such a way that people have less trouble understanding it and translating it to their own situation. By making certain options easier or less time consuming, certain behaviour can be encouraged. For example, by making it easier for people to change insurance, actually doing so is encouraged.

**Social norms or peer pressure** is a way in which people can be influenced, as discussed above. People tend to change their behaviour towards the social norms. This leads to biased choices but can be used as a nudge as well (Abdukadirov, 2016; Thaler & Sunstein, 2008; van Oorschot et al., 2013; World bank, 2014). A very simple nudge might be to inform people about what others do. As illustrated in the example of the reasons for saving energy, the key determinant was the usage of people in the neighbourhood. Another example is given by Thaler and Sunstein (1999): owners of dogs more and more tend to walk around with bags to clean up after their dogs, just because others do the same although the risk of being fined for not cleaning up is almost zero. The same holds for tax compliance: an experiment in Minnesota showed that next to informing, educating and warning people about filling out their taxes, the only intervention which had a significant effect was one in which people were told that more than 90% of the people in Minnesota already filled out their taxes (Thaler & Sunstein, 2008, p. 72).

**Reminders** are another way of influencing people's behaviour (Sunstein, 2014; Thaler & Sunstein, 2008). This can be done by mail, text message or post as for coming obligations, overdue bills and important decisions like a health care plan. People tend to forget to respond because of all the choices they have to make (Sunstein, 2014). Therefore, reminders can be a very useful tool to influence people. Scholars

examined that reminders have to be written in a certain format (Halpern, 2015). Moreover, people should be able to act immediately, for example by clicking on a link or sending a form back.

In addition, a successful nudge relies heavily on its **timing** (Halpern, 2015). As Halpern (2015, p. 149) stresses: “interventions are more effective before habits have formed, or behaviour has been disrupted for other reasons”. For example: reminders were sent to customers when the rates on their savings were decreasing, which was more effective than reminders sent at other times (OECD, 2017, p. 217). Asking people for a donation before Christmas works much better than just after Christmas; asking people a week in advance what they want to have for lunch and their choices are much healthier than when asked on the day itself (2015, p. 149).

**Priming** is the last form of nudging which is discussed. Priming is about creating a situation in which people are reminded of certain values and goals by which those values are activated. When people are asked what they intend to do, they are more likely to act according to what they answered (Thaler & Sunstein, 2008, p. 76). This applies to voting as well as to following a diet. Another form of reminding is proven to have an influence as well: when people are reminded of eating salad (instead of burgers) they are more likely to actually have a salad (van Oorschot et al., 2013). By drawing people’s attention towards certain characteristics by making some of them more prominent than others, behaviour can be changed. It all comes down to offering people certain simple cues by which they are ‘primed’ into a certain form of behaviour (Thaler & Sunstein, 2008). This can be in the form of visible elements of the environment but also by music and smell for example. For example: voting in classrooms stimulates voting in favour of educational improvement (van Oorschot et al., 2013).

#### 2.2.5 Governmental nudging

As shown above, there are several strategies of nudging that can be applied in a variety of situations. Recently, public sector officials began to understand the opportunities of nudging as well and started to use these behavioural and psychological insights in the public sector (Schillemans & de Vries, 2016). Because policy aims at changing behaviour of people, it makes sense to use a behavioural perspective in policy as well. Policy makers increasingly rely on those new insights to design effective policies. Thaler and Sunstein (2008) were among the firsts to translate behavioural science insights into policy making. Recently, multiple examples can be found of governmental units applying these insights to policy making (Halpern, 2015). Obama appointed Sunstein, co-author of the book ‘Nudge’ as head of the Office of Information and Regulatory Affairs (OIRA) within the office of Management and Budget. “A key tool for achieving this improvement in the cost-effectiveness of regulation was to use the lessons of behavioural economics and insight” (Halpern, 2015, p. 41). Within the British Government, this new approach was adopted as well by David Cameron by creating the ‘Nudge Unit’ - the Behavioural Insights Team within the Cabinet Office (Halpern, 2015). In line with their idea of ‘Big Society, not Big Government’, the Behavioural Insights Team argued for the use of nudge: “There has been the assumption that central government can only change people’s behaviour through rules and regulations. Our government will be a much smarter one, shunning the bureaucratic levers of the past and finding intelligent ways to encourage, support and enable people to make better choices for themselves” (Behavioural Insights Team, 2010, p. 4). Within the Dutch government as well, multiple small units apply behavioural insights to policy making (Schillemans & de Vries, 2016). The Scientific Council for Government Policy (Wetenschappelijke Raad voor het Regeringsbeleid) published a report in 2009 about the ‘human decision maker’ (de menselijke beslisser). The different teams are united in the Dutch Behavioural Insight Network in which knowledge is exchanged. The central idea of those units is to ‘watch behaviour before writing the rules’ (Wetenschappelijke Raad voor het Regeringsbeleid, 2014) and effectively influence human behaviour.

Different arguments are presented why governments should do so. According to Oliver (2013, p. 687): “the private sector . . . make[s] subtle changes to the choice architecture in order to maximise sales or profits all of the time of course, and some may contend it is legitimate for the government to use ‘counter-nudges’ to steer the public towards making decisions that better serve their long-term deliberative goals”. As argued in the report of the World Bank (2014, p. 202): “All people—rich and poor alike—sometimes make choices that do not promote their own well-being. Although mistakes can arise even after careful deliberation, people are especially prone to make choices that do not reflect their long-term interests when they think automatically”. Governments should therefore use behavioural science insights to promote freedom and well-being. Thaler and Sunstein (2008, pp. 5-6) argue that nudging by governments can be seen as ‘libertarian paternalism’: libertarian because it is preserving free choice, paternalistic because it tries to make “choosers better off, as judged by themselves” (p. 5). In this sense, libertarian paternalism is about helping subjects to make choices which make their life longer, healthier and better by making it easier for them to do so (van Oorschot et al., 2013). Many governments have adopted this approach to design policy in a ‘smarter’ way. The advantages are the low costs, wide application, sustainable renewal and preservation of free choice (John et al., 2009; Rainford & Tinkler, 2011; Thaler & Sunstein, 2008).

However, nudging is criticised as well. Some argue it does not address fundamental problems (John et al., 2009; Rainford & Tinkler, 2011) and only deals with the symptoms. Others argue it is still paternalistic since it is designed in a top-down approach and it contains a normative idea about what ‘good choices’ are (French, 2011). Goodwin (2012) even argues that the paternalistic aspect is so worrying that nudging is not an appropriate policy instrument at all. In his latest article, Sunstein (2018, p. 1) refute all those critiques by arguing that they are based on misconceptions: “Nudges always respect, and often promote, human agency; because nudges insist on preserving freedom of choice, they do not put excessive trust in government; nudges are generally transparent rather than covert or forms of manipulation; many nudges are educative, and even when they are not, they tend to make life simpler and more navigable; and some nudges have quite large impacts”. Moreover, Thaler and Sunstein (2008) argue that there is not such a thing as a ‘neutral design’ so when choice architecture is part of a policy, governments can better make sure it is used for the better. Another criticism is that nudges are not transparent and therefore manipulative. Accordingly, the Dutch Scientific Council for Government Policy argues that transparency is essential for the successful use of nudging. Especially when nudging is used in more controversial areas, a (public) discussion should be held about the appropriateness of the use of it (RMO, 2014; Wetenschappelijke Raad voor het Regeringsbeleid, 2014). The government has to use a much more transparent approach than the private sector does and should always be aware of the principles of the rule of law and good governance (ibid.). Governmental nudging can be used as well to strengthen the resilience and role of citizens in society in general and in their democratic role specifically (RMO, 2014). In this sense, nudges can be used to enable people to make choices without enforcing one in particular (ibid.).

### 2.3 The symbiosis of complexity theory and nudging

So far, the two bodies of literature are described and the relevant concepts for this study are explained. Although they might seem to be quite distinct, they can be linked very well.

Within traditional policy-making, people were regarded as rational human beings. Policy was designed as if societal problems were stable and solvable. However, this traditional way of policy-making was not suitable for dealing with complex policy problems (Popp et al., 2014) and solving societal problems by control and regulation did not work anymore (Bekke, Kickert, & Kooiman, 1995). In response to this traditional idea, a new perspective on policy-making was developed. Complexity theory and network theory offered new perspectives on societal problems and public policy-making. From a complexity/network perspective, the traditional rational idea is too simplistic and is denying the complex aspects of systems, organizations and societal problems. Systems cannot be explained as machines in which everything is predictable and understandable. Instead, governing mechanisms do not rest solely on the authority of the government anymore but connect different actors operating within different sectors (Milward & Provan, 2000). Those networks are characterized by the different perceptions of actors, the mutual dependency of actors, their operative autonomy and the rules which are developed internally. In this way, the different knowledge, capacity and insights of various actors can be used to deal with a societal problem.

Insights from behavioural theory are based on the same perspective as complexity theory and offer a tool how to conceptualize policies taking into account the unique characteristics of a complex policy problem. Both theories disagree with the idea of a rational human being (Anderson, 1999; Gerrits, 2012; Grobman, 2005; Klijn & Koppenjan, 2015). Since a fully rational approach is not working when dealing with complex policy problems, behavioural insights, among others nudging, might be very helpful in dealing with those problems. It is based on a broader picture of elements leading to human behaviour and in doing so, it goes beyond the rational picture of people. Nudging is based on the idea of people relying to a great extent on their automatic system and therefore making mental shortcuts and systematic mistakes. Very often, people do not make the best decision, from a rational point of view. Instead, they are influenced by their environment. This context dependency is acknowledged within complexity theory as well. The context of a complex problem is very important for its characteristics and from a public administration perspective, it might help to see “public decision making in relation to its environment” (Gerrits, 2012, p. 49).

The reason both theories are used in this study is because nudging, and more broadly behavioural insights, might offer alternative ways to the rational one of designing public policy in order to deal with complex societal problems. By being aware of the influence of the environment on the behaviour of people as well as on the characteristics of complex problems, this environment might be an interesting starting point for public policy.



### 3 Conceptual Framework

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In this chapter the way of conducting this research is explained and justified. As becomes clear in the research question, the use of behavioural insights is the independent variable in this research. Since the focus is on nudging, is referred to as such (see 3.2.1). Concerning nudging both the explicit use of it as well as the implicit (indirect) use of nudging is taken into account. The dependent variable is dealing with complex policy problems. In order to evaluate this, a distinction is made between the direct effectiveness of the network and the indirect effectiveness, referring to the collaboration within the network (see 3.2.2). This relation is shown in the conceptual model below (3.1). The different concepts are operationalized subsequently (3.2). The way of conducting this research is explained in the methodology section (3.3).

#### 3.1 Conceptual model

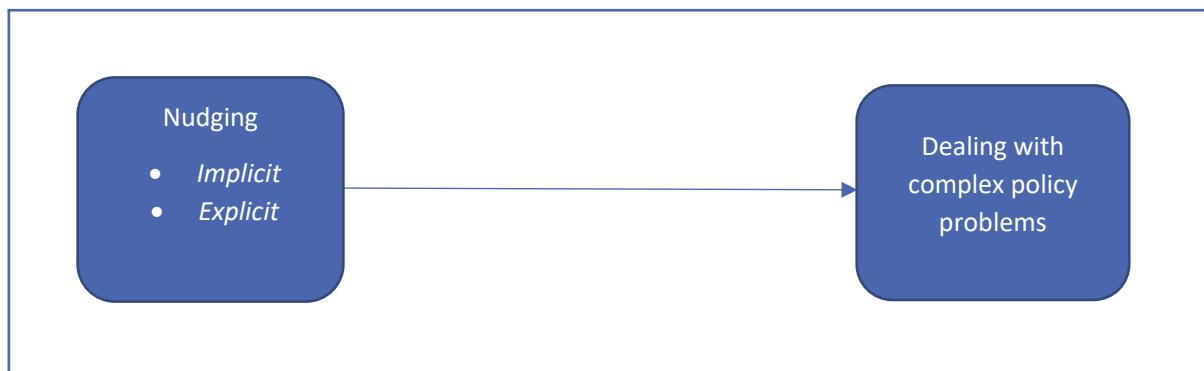


Image 1 - conceptual model

#### 3.2 Operationalization

In this part of the conceptual framework, the various concepts are operationalized. In the conceptual model, as described above, the relation between nudging, both implicit and explicit and dealing with complex policy problems is central. The different concepts are operationalized in order to collect empirical data.

##### 3.2.1 Nudging

Concerning the definition of nudging, the original definition of Thaler and Sunstein (2008, p. 12) is used, in which nudging is defined as “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives”. Choice architecture is the design of a context in which people take decisions (Thaler & Sunstein, 2008). In this study, the word ‘predictable’ in the definition of nudging, is interpreted in a broad way: predictable is regarded as a reasonable assumption about the alteration of people’s behaviour. Because every complex problem differs, full predictability is impossible.

Explicit nudging is actual nudging while being aware of doing so. Actors therefore have to be familiar with the idea and concept. Implicit nudging is designing a context without explicitly using the concept of nudging itself, however using the same ‘techniques’. In the table below (table 2), both implicit and explicit nudging are operationalized in the same way because the only difference is in the labelling. Even when actors implicitly nudge, they still nudge. Therefore, in the table itself, it is put together. In the analysis, the distinction is made between implicit and explicit nudging. All nudges described in the second chapter are

included here. Moreover, the general idea of nudging is taken into account as well as framing. Although framing itself is not a specific nudge but can be regarded as a presentation bias, it can be used in a similar way as a nudge. Therefore, it is regarded as such.

### 3.2.2 Dealing with complex policy problems

Dealing with complex policy problems is the dependent variable. A positive change is witnessed when actors perceive the network to be able to deal with complex problems better than it could before. 'Dealing with complex policy problems' is chosen over 'deliberately steering' because both the intended as well as the unintended actions of actors fighting undermining crime are taken into account in this study. Dealing covers both of these kinds of actions. In evaluating the effects of the use of behavioural insights, specifically nudging, a distinction is made between the direct effectiveness of the network and the indirect effectiveness, referring to the collaboration within the network. The latter aspect is added because it is argued that the better the network actors are able to collaborate, the more effective the network is, in this case meaning the better they can fight undermining crime.

Network effectiveness is defined as "the attainment of positive network level outcomes that could not normally be achieved by individual participants acting independently" (Provan & Kenis, 2008, p. 230). The internal component of dealing with complex policy problems refers to the collaboration of actors within the network. A network is defined as "more or less stable patterns of social relations between mutually dependent actors, which cluster around a policy problem, a policy programme, and/or a set of resources and which emerge, are sustained, and are changed through a series of interactions" (Klijn & Koppenjan, 2015, p. 22). For the indicators of collaboration, the ones of Ansell and Gash (2007) are followed. Those derive from their definition of collaborative governance. The second part is defining collaboration and is used in this research: "a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets" (Ansell & Gash, 2007, p. 544).

Variable	Dimension	Indicator
<b>Nudging</b>	1. Idea of <b>nudging</b> : deliberately changing the surroundings to change behaviour	<ul style="list-style-type: none"> <li>• <i>Using this argument for interventions</i></li> <li>• <i>Reasoning in this way</i></li> </ul>
	2. <b>Framing</b> through emphasising certain aspects and leaving others out. This can be done by choosing certain words, creating a certain picture or by telling a certain story. Implicitly certain behaviour is stimulated	<ul style="list-style-type: none"> <li>• <i>Consciously choosing certain words</i></li> <li>• <i>Consciously telling a particular story</i></li> <li>• <i>Consciously creating a certain picture</i></li> </ul>
	3. Deliberately designing a certain <b>default option</b> , a standard option while being aware of the influence on the behaviour of people in dealing with complex issues	<ul style="list-style-type: none"> <li>• <i>Changing the default option</i></li> <li>• <i>Implementing a default option</i></li> <li>• <i>Being aware of the influence of the option which is the default</i></li> </ul>
	4. Give <b>feedback</b> on behaviour of people – warnings, graphs, intermediate results – in a complex context	<ul style="list-style-type: none"> <li>• <i>Organize a system in which people get feedback on their behaviour immediately</i></li> <li>• <i>Warnings of people's behaviour</i></li> </ul>

		<ul style="list-style-type: none"> <li>• <i>Graphs which concern people's behaviour</i></li> <li>• <i>Intermediate results</i></li> </ul>
	5. <b>Simplification</b> by structuring complex choices: simplifying different options, information and regulations to support people in dealing with complex issues	<ul style="list-style-type: none"> <li>• <i>Simplified picture</i></li> <li>• <i>Simplified information</i></li> <li>• <i>Simplified options</i></li> <li>• <i>Simplified regulations</i></li> </ul>
	6. <b>Increases in ease and convenience:</b> consciously making a certain option in a choice architecture more easy and low-cost, reducing barriers (time, money, effort) in order to stimulate certain behaviour in a complex setting	<ul style="list-style-type: none"> <li>• <i>Changing one or more options</i></li> <li>• <i>Consciously making one option different than the other ones; nicer/less time consuming/cheaper/easier</i></li> </ul>
	7. Using <b>social norms</b> or peer pressure to change behaviour: emphasizing what most people do, think or prefer and calling on social norms or rules to stimulate certain behaviour in complex contexts	<ul style="list-style-type: none"> <li>• <i>Explicitly calling on behaviour of others</i></li> <li>• <i>Explicitly naming a social norm or rule</i></li> </ul>
	8. <b>Reminders:</b> reminding people by text message, email or post by which people can act immediately	<ul style="list-style-type: none"> <li>• <i>Sending reminders about previous set goals:</i></li> <li>• <i>by mail, app, post or text message</i></li> </ul>
	9. <b>Priming</b> is about creating a situation in which people are reminded of certain values and goals and thereby affecting those as well by activating them, with the purpose of influencing behaviour	<ul style="list-style-type: none"> <li>• <i>Designing a situation people are reminded of previous values/goals</i></li> <li>• <i>Using a situation to remind people of values/goals</i></li> </ul>
<b>Network effectiveness</b>	1. <b>Measured</b> effectiveness by network actors: measurements of (part of) the network policy	<ul style="list-style-type: none"> <li>• <i>Measured effect of an intervention</i></li> <li>• <i>Hard data about an intervention</i></li> <li>• <i>Report about the effect of an intervention</i></li> </ul>
	2. <b>Experienced</b> effectiveness of network actors concerning the effects of (part of) the network policy	<ul style="list-style-type: none"> <li>• <i>Effect of an intervention which is experienced by an actor</i></li> <li>• <i>Effect of an intervention which is experienced by someone known by an actor</i></li> </ul>
	3. <b>Expected</b> effectiveness of network actors: perceptions and expectations concerning the effects of policy of (part of) the network of involved actors	<ul style="list-style-type: none"> <li>• <i>Effect of an intervention which is expected by an actor</i></li> <li>• <i>Perceptions of actors on interventions</i></li> </ul>

<b>Network collaboration</b>	1. <b>Face-to-face dialogue:</b> conversation between two or more actors concerning (part of) the network policy/collaboration/outcomes	<ul style="list-style-type: none"> <li>• <i>Real life meetings of actors concerning their collaboration, the network policy/outcomes</i></li> </ul>
	2. <b>Trust-building</b> (relational) between actors within the network and the perception of actors of trust in the network (based on Klijn, Edelenbos, & Steijn, 2010, p. 205)	<ul style="list-style-type: none"> <li>• <i>Actors live up to agreements</i></li> <li>• <i>Actors give each other the benefit of the doubt</i></li> <li>• <i>Actors keep the others in mind</i></li> <li>• <i>Absence of opportunistic behaviour</i></li> <li>• <i>Actors do assume that intentions of the others are good</i></li> </ul>
	3. <b>Commitment</b> to the process of all actors involved in the network (based on Ansell & Gash, 2007, pp. 559 - 560)	<ul style="list-style-type: none"> <li>• Belief that this process in the best way to achieve desirable policy outcomes</li> <li>• Feeling of ownership for the process</li> <li>• Shared responsibility among actors</li> <li>• Up-front willingness to the process independently of the preferred results</li> </ul>
	4. <b>Shared Understanding</b> by all actors involved of the definition of the problem, the goal of the collaboration, the shared mission and the process (based on Ansell & Gash, 2007, p. 560)	<ul style="list-style-type: none"> <li>• <i>Agreement on the definition of the problem</i></li> <li>• <i>Shared understanding of the goal/purpose/mission</i></li> <li>• <i>Agreement on the process</i></li> </ul>
	5. <b>Intermediate Outcomes</b> of the result of the network of actors by the presentation of results during the process and/or the celebration of small wins	<ul style="list-style-type: none"> <li>• <i>Presentation of intermediate results for partners in the network</i></li> <li>• <i>Presentation of intermediate results for others in the own organisation</i></li> <li>• <i>Moments organized to celebrate small wins – with partners and/or external actors – like drinks, diners and other events</i></li> </ul>

Table 2: variables, dimensions and indicators

### 3.3 Methodology

Within this part, the chosen methodology of conducting this study is explained and justified. Firstly, this concerns the chosen research design (3.3.1), after which the case selection is explained (3.3.2), the way of collecting data (3.3.3) and the data analysis (3.3.4). The quality of this research is assured by formulating a couple of criteria for qualitative research (3.3.5).

### 3.3.1 Research design

In order to conduct this research, a case study approach is used. Yin (2004) described the use of case study methodology as the exploration of the “how and why of contemporary phenomena within a real-life context” (Gale, 2015, p. 87). The aim of this research is to explore the use of behavioural insights, specifically nudging in dealing with complex policy problems, in this case the use of nudging in fighting undermining crime in a deductive way. The rationale behind this design is the possibility to study a case in depth. Although both qualitative and quantitative research methods are useful, the majority of case studies on this topic uses a qualitative design. Since the aim of this study is not to generalize a large-n study, but to describe and explain a certain phenomenon, a qualitative design is much more suitable (Boeije, 2005). Moreover, because of the nature of this research, it is hard to formulate general theories: complex problems, in particular undermining crime, and the network dealing with them are very context dependent, therefore generalisable conclusions are hard to formulate. The description of contextual and specific characteristics, rather than general findings, suits a qualitative approach (Boeije, 't Hart, & Hox, 2009; Bryman, 2012). In line with the qualitative approach, this research regards events and developments as connected to their context rather than isolated from each other (Bryman, 2012). This approach suits the idea of complexity in which complex problems are seen as context dependent. Especially because this research is about the unique approach of fighting undermining crime in this specific case, a qualitative case study is very suitable to understand the reasons, logics and motives of various actors as well as the complexity of the situation (Boeije, 2005). This study aims to research the possible contributions of behavioural insights, specifically nudging in dealing with complex policy problems and give an in-depth picture of a unique case and approach. The case used is fighting undermining crime in Rotterdam Zuid.

The aspiration to formulate general findings, as quantitative research methods aim to do, would in fact limit the research, because this approach would pass by on the value and richness of in-depth findings which are specific for this case. Therefore, a qualitative case study is most suitable.

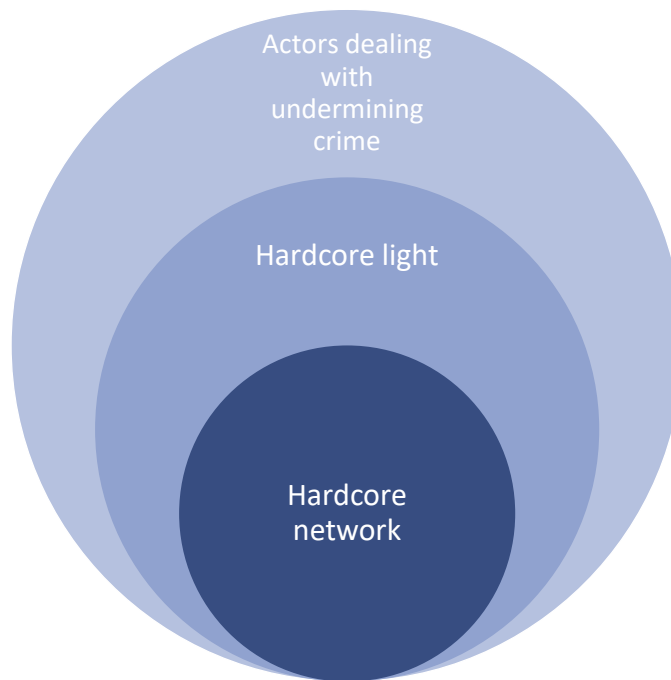
### 3.3.2 Case selection

In a single case study, it is important to select a case deliberately, so a proper in-depth study can be conducted (Gerring, 2008). For this research, cases were selected in which a network is dealing with undermining crime. Moreover, the indication of the use of behavioural insights was a requirement for the case. Fighting undermining crime in network collaborations is relatively new in the Netherlands. With the structural implementation of Regional Information and Expertise Centres (RIEC) in the Netherlands in 2012, the governmental approach of fighting organized crime got a more structural character. This was the start of a network collaboration in fighting undermining crime. One of those networks is located in Rotterdam where undermining crime is a serious problem. In this research, this network is taken as the case study. This case can be regarded as an exemplifying case. Bryman (2012, p. 70) uses this label instead of the representative or typical case. All refer to a case which serves as an example for comparable cases. Although every complex problem is unique and embedded in its own specific context (Gerrits, 2012), lessons can still be helpful for comparable cases. Since undermining crime is not only a problem in Rotterdam, but in other areas in the Netherlands and around the world as well, insights from this research can be useful for other cases as well. In that sense, the case is unique but only until a certain extent.

The network in Rotterdam fighting undermining crime was founded in 2014. From the start on, it mainly focused on the Southern part of Rotterdam (Rotterdam Zuid). The National Program Rotterdam Zuid already started in 2011 because of the ‘non-Dutch’ kind of problems (further explained in 4.1) which asked for a special approach (NPRZ, 2017). Crime control however was not a part of this program. The new network, Hartcore, is a so-called integral approach in which the Police, the Public Prosecutor, the

Municipality of Rotterdam, the Tax Authority and the Regional Information and Expertise Centre Rotterdam (RIEC) collaborate in order to fight undermining crime in Rotterdam Zuid. Those are the key actors in the network. A broader network is formed by actors who join on specific topics, like the National Program Rotterdam Zuid, the Safety House ('Veiligheidshuis'), Customs and the Marechaussee (Schram et al., forthcoming). This level of the network is identified as 'Hardcore light' (see image 3). Because the program has a highly structural character, the argumentation is that the approach should be structural as well, which implies an integrated approach both on administrative and operational level. The starting point of the collaboration is that only with the knowledge, insights and capacity of all parties, a real change in the area can be realized (ibid.).

In this study, the core actors of the network as well as the additional actors are considered. Moreover, a third level is distinguished concerning actors who are not directly involved in the network in Rotterdam but are part of one the organizations involved in the network, see image 3. For example, the police in other parts of the Netherlands who might have valuable information for the network in Rotterdam, some related branch organizations like the Netherlands Gambling Authority and the Nederlandse Bank (the central bank of the Netherlands).



**Image 2: different layers of the network fighting undermining crime in Rotterdam Zuid**

### 3.3.3 Data collection

Collecting empirical data for this research started in March 2018 and lasted until June 2018. In order to collect a 'rich' and divers set of data, different kinds of sources were used (see appendix A). By using a triangulation strategy, different sources can be used to clarify and check findings (Bryman, 2012, p. 392). The main source of data are semi-structured interviews with 15 involved actors. In order to interview these respondents, a topic list was made (see appendix B). Interviews were held with people involved in the network and dealing with undermining crime in Rotterdam Zuid. Most interviews were therefore held with actors in the hardcore network. Simultaneously interviews were held with actors in the so-called hardcore light network: actors who are involved in the network sporadically. Lastly some interviews were held with actors from the wider network. All the main actors from the hardcore network were

interviewed which means at least one person from every organization was interviewed. Concerning the actors from the other two levels of the network, snowball sampling was used to select respondents. In using this sampling technique, a small group of relevant people was selected (the hardcore network in this research) who were asked who else they believed to be important to talk to concerning this topic (Bryman, 2012, p. 424). An advantage of this technique is that it shows the connectedness of actors in the network (ibid.).

Interviewing was chosen as the main method for collecting data because it is a method which provides rich data and allows flexibility in adjusting to different situations (Bryman, 2012, pp. 470 - 471). It is a suitable way to track down personal opinions and experiences because there is room for respondents to share their thoughts with the interviewer. Because in this research the interpretations and experiences of interviewees are highly important, semi-structured interviews were conducted. Semi-structured interviews allow the interviewer to prepare questions about important topics for the research, but also allows room to ask further question on a certain topic if necessary or relevant (Boeije, 2005; Silverman, 2015).

The second source of data are participant observations. This source is regarded as a valuable contribution to the research because of the different kind of data it generates. Observations provide knowledge about actors in their natural setting and the researcher might get a better understanding of certain practices and why they occur (Matthews & Ross, 2010, p. 257). Matthews and Ross (2010, pp. 257 - 258) distinguish different roles of the observer. The role taken in this research is the one of 'participant as observer'. In most of the meetings and events the data were collected, the observed were aware of the researcher doing observations. All meetings between March 2018 and July 2018 of the Hardcore network and the meetings of part of the actors meeting with researchers (from the NSOB, RONT and the Police Academy) for the research on 'Enricher Accountability' ('Rijker Verantwoorden') are used for participant observation.

Thirdly, document analysis was done. This method of collecting data is used to get a 'richer' picture of the case, since document analyses can provide different kind of data like policies, numerical data and reports (Matthews & Ross, 2010, pp. 277 - 278). Documents might be more precise and might contain a larger amount of data than people can provide in interviews (ibid.). It is important to be aware of the source of the document, the reason it is written and what its meaning is (Bryman, 2012). Documents are socially constructed and therefore can mean more than just what is written on paper (Matthews & Ross, 2010). In this research, documents were analysed which were regarded as important by the interviewed actors.

#### 3.3.4 Data analysis

In order to analyse the data obtained by interviews, all interviews were recorded and transcribed if respondents agreed (all did). Recording the interviews helps the researcher to interpret the data not only by what was said but by how it was said as well (Bryman, 2012, p. 248). Documents were fully analysed. The relevant observations for this research were written down in reports. Interviews, documents and reports of observations were coded in order to compare different answers and sources. The coding was done by using the program NVivo. The data were post-coded which means coding was done after the data were collected (Bryman, 2012, p. 248). A coding scheme was developed from both the theory and by open coding (see appendix C). Open coding is the process of detailed analysis of sources in order to identify, name and develop different codes. This is done through reading and re-reading transcripts (Strauss & Corbin, 1967). Coding helps to structure and reduce the (amount of) information and compare different sources on a similar topic (Boeije, 2005; Bryman, 2012). This makes it possible to analyse the data and look for patterns and explanations.

### 3.3.5 Quality of the research

In most researches, the quality is assessed in terms of validity and reliability. However, multiple scholars (Bryman, 2012; Guba & Lincoln, 1994; Lincoln & Guba, 1985; Mason, 1996) have argued that those criteria are developed for assessing quantitative research and are therefore not suitable for qualitative research. Especially when studying a single case, it can never be a representation of a larger population but at the same time that is not the goal. As Yin (2013) argues, we should rather think about a case as an opportunity to shed empirical light on some theoretical concepts and learn certain lessons instead of as a sample. According to Guba and Lincoln (1994; 1985), qualitative research is based on different criteria than just validity and reliability. The aim of this kind of research is not to find the truth but to see and understand different perspectives on reality. Since this view is adopted in this research as well, the two criteria of trustworthiness and authenticity of Guba and Lincoln (1994; 1985) for assessing the quality of qualitative research are used here (Bryman, 2012, p. 390).

The trustworthiness of research exists of four criteria:

1. *Credibility*: this is one of the most important criteria since it is about the acceptability of the research findings. The question asked here is whether the research is actually researching what it claims to research. This criterion can be linked to the classic criterion of internal validity (Bryman, 2012, p. 390). This criterion can be met by defining and operationalizing the used concepts (Yin, 2013). In this research, the main concepts are defined in the previous chapter. Subsequently the concepts are operationalized by formulating indicators found in the theory when possible and explained when there was no suitable theory available. Moreover, to respondents it was always stressed that answering honestly was most important so if they felt they could not do so, not answering at all was not a problem. Concerning documents, the authenticity was checked before it was used as a source. The observations were reported in the most neutral way, without personal ideas and opinions. The use of triangulation is argued to make the research more credible as well (Bryman, 2012, p. 392).
2. *Transferability*: this criterion is about the generalizability (or external validity) of the research. It is the extent to which the results are applicable to other contexts (Lincoln & Guba, 1985, p. 290). In case studies it is usually not possible to generalize findings. Rather qualitative findings are orientated on uniqueness and societal context of a phenomenon (Bryman, 2012). The added value of the research is in the lessons and understandings others can get from it. This research might be interesting and helpful to other networks or actors fighting undermining crime as well as to people dealing with complex policy problems who are interested in the use of nudging. Because of the unique complex situation in Rotterdam Zuid, the generalizability of the research is low, however lessons and understanding are still useful.
3. *Dependability*: this criterion parallels reliability (Bryman, 2012, p. 390) and is about the extent to which it is likely that the same results could be found in a comparable context (Lincoln & Guba, 1985). To ensure this, an 'auditing' approach should be adopted which entails that a complete record of every phase of the research, is kept (Bryman, 2012). All data should be analysed and the researcher has to make sure no data are left out the analysis (Matthews & Ross, 2010). To ensure the dependability of this research, every step is described in detail. Especially the data collection and analysis are reported very accurately so the repeatability of the researched is ensured as much as possible.
4. *Confirmability* concerns the insurance of objectivity as much as possible (Bryman, 2012; Lincoln & Guba, 1985). While acknowledging that full objectivity is impossible in social research, the researcher has to show that the results are not influenced by personal biases, interests,



preferences and values (Bryman, 2012). Auditors and supervisors have to take up the role to critically reflect on the analysis and results. In this research too, absolute objectivity is impossible. To reduce personal influences, all parts of this study were critically checked by others. This was done by others present at meetings as well as by people not involved in this research. As Lincoln and Guba (1985) indicate, it is important to research phenomena from different perspectives. This is done by the use of triangulation: interviews are held, documents are analysed and observations are done. As described before, by using those three ways of collecting data, a richer set of data is collected and a more accurate picture can be given.

Next to those four criteria of trustworthiness, Guba and Lincoln (1989) suggest five criteria to ensure the authenticity of the research which concern a wider political impact (Bryman, 2012):

1. *Fairness* is about the extent to which different views and perspectives on a certain topic among members of the social setting are represented in the research (Bryman, 2012; Guba & Lincoln, 1989). To ensure this, interviews were held with members of all directly involved organizations and with some infrequently involved actors in the network as well. In this way, multiple perspectives are considered in this study. Moreover, in the interviews was room for the respondents to give their opinion on all aspects of the topic and to add topics as well.
2. *Ontological authenticity* is about the extent to which actors themselves arrive at a better understanding of the research topic and their own environment (Guba & Lincoln, 1989). In this study, key concepts were explained to the respondents and the results were shared afterwards. Moreover, by explaining the implicit use of nudging, respondents themselves become more aware of the use of nudging as well.
3. *Educative authenticity* is related to the above criterion and concerns the educational impact on members to appreciate the perspectives of others (Bryman, 2012). By both mentioning other perspectives during the interview as well as sharing the results afterwards, this is ensured in this study.
4. *Catalytic authenticity* concerns the impact the study has on the motivation of actors to engage in action to change their circumstances (Bryman, 2012). This is done by sharing the results of this study and thereby giving actors the opportunity to use the perspective of nudging in dealing with undermining crime as well as to get a better picture of the work and ideas of others in the network.
5. Lastly, *tactical authenticity* is about the impact of the research in terms of the empowerment of actors to engage in action (Bryman, 2012). The perspective of nudging can help actors to become aware of other ways of fighting undermining crime in networks.



## 4 Findings

*“You can feel that something is wrong when walking around in certain areas. It is like you lift a small part of a tablecloth: above it everything looks fine, however under it there is a whole other world in which things are happening which are definitely not good” (R3).*

In this chapter, the findings are presented which are collected in the interviews with involved actors in the area, the analysed documents and the observations of network meetings. First a more detailed impression of the case of Rotterdam Zuid is given (4.1). Subsequently, the specific way of dealing with the problems in the area by involved professionals is elaborated on (4.1.1). Because many respondents referred to a couple of interventions (part of) the network organized, those examples are reported here as well (4.2). Every intervention is first described, after which the used nudge is explained and the effect it has on the network outcome and/or the collaboration within the network.

Because all the interviews were done in Dutch, citations are translated by the researcher and therefore not the exact words the respondent used.

### 4.1 Undermining crime in Rotterdam Zuid

The southern part of Rotterdam is a unique area because of its location, inhabitants, possibilities and challenges. A gathering of multiple problems leads to a complex situation and makes the area one of the most challenging ones in the Netherlands. Problems like poverty, unemployment, analphabetism and criminal activities are interconnected and are reinforcing each other (Commission Deetman & Mans, 2011). The problems itself are not unique, however the scale and intensity of the problems is. In terms of inhabitants, the area is comparable with the Dutch cities Eindhoven or Groningen, both medium size cities in the Netherlands of approximately 200.000 inhabitants (ibid.). It indicates how big the area of Rotterdam Zuid (south) is. Moreover, the area is very divers in terms of cultural and ethnic groups and the different neighbourhoods are characterized by their own problems and challenges. In the media and by many people, Rotterdam Zuid is framed as a very problematic and bad area. In 2011, the commission of Deetman and Mans concluded that the problems of Rotterdam Zuid are ‘un-Dutch’ and therefore a unique approach is needed. In order to realize this, the National Program Rotterdam Zuid (NPRZ) was created in 2012. The focus of this program is on education, work and living conditions. However, in 2014 it was concluded the program did not work as planned. This was mainly the case because of the big problem of undermining crime in the area. In order to deal with this, next to the NPRZ, a program was designed which had to deal with the problem of undermining crime in the area (Schram et al., forthcoming). Because undermining crime is so deeply rooted in the

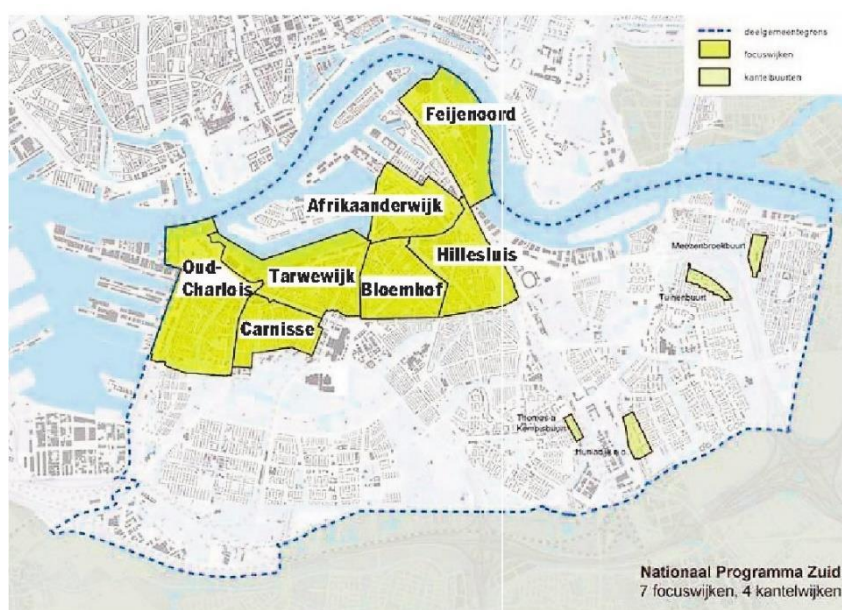


Image 3: map of the South of Rotterdam (NPRZ, 2018)

structures of the neighbourhoods, it cannot be isolated from other problems. It is that serious that for many, mainly young people, criminal activities are a real and attractive alternative to a regular education or job (ibid.). “In this area, everything the government wants to see going well, is bad and the other way around. . . . The density of problems makes it impossible for neighbourhoods to deal with it” (R11).

Undermining crime is a very smart kind of crime: people organize it in such a way it is as invisible as possible. For a long time, the focus of the government was on crime which was very visible and clear: robberies, fights, shootings, etc. This kind of crime is not so present anymore: “Nowadays it is less visible, however you can feel that something is wrong when walking around in certain areas (R3)”. Although respondents described undermining crime a bit differently, all mentioned the mixing of the underworld with the upper world (R2; R4-5; R11; R15). Criminal activities can be regarded as undermining when criminals abuse legal structures systematically, when it is about making money and status, criminals are trying to stay invisible and it has a disrupting effect on society (R13).

The awareness for this kind of criminal activities is relatively new. It is a new way of looking/thinking all actors dealing with it have to develop. Because it is most often not a visible form of crime, ‘you have to collect and interpret the signals’ instead of getting them directly from others (R15). Multiple actors referred to the saying of the Dutch soccer player Johan Crujff: ‘you will only see it when you will get it’ (‘Je gaat het pas zien als je het door hebt’) (R7; R15). The more they are looking for signals of undermining activities, the more they will find.

#### 4.1.1 The Rotterdam approach

To structurally deal with the problems of undermining crime in Rotterdam Zuid, a special civil servant was appointed. The so-called ‘city marine’ was asked to trigger a sustainable change in the area. Together with a first ‘coalition of the willing’, he started with a couple of initiatives in the area. Other partners in the network, which calls itself ‘Hartcore’ (not because of their way of working but because of the [inspiring poem of Jules Deelder about Rotterdam](#), see page 5 as well) are the Rotterdam police, the Municipality of Rotterdam, the Public Prosecution, the Tax Authorities and the Regional Information and Expertise Centre (RIEC). The NPRZ is nowadays involved as well. All involved partners are working together in an integral way. This is needed because no partner can deal with the problems alone because they do not have all the necessary knowledge, expertise or possibilities, but need those of the other partners as well. According to one of the involved police officers:

In my opinion, the integral aspect is needed to be able to deal with complex problems: in Zuid as well, if we continue doing things the way we did, nothing is going to change – to actually realize a change, a coalition is needed (R12).

Another added value of this network approach is the different perspectives actors bring to the table when it comes to finding ways to deal with undermining crime. The approach in Rotterdam Zuid is therefore “a mix of hard and soft instruments . . . : some guys you just have to lock up but in the long run, we have to include people in society, otherwise we’ll fail for sure” (R14). To realize this, four approaches are used in Rotterdam Zuid: ‘signalization, prevention, tackling problems and stimulating good developments’ (R11; R12; R14). By now, all actors are aware of the need of including all perspectives in the approach. The problems they are dealing with are, among others, illegal hemp cultivation, Money Transfer Operators (MTO’s), illegal gambling, human trafficking and underground banking. The different themes are dealt with in so called ‘rotary knobs’ (‘draaiknoppen’) concerning youth, criminal money, real estate, drugs, branches and other topics in which all organizations involved are represented (D3).

The collective approach is characterized by the usage of the different logics of the involved organizations. Depending on the problem, the actors determine who can deal most effectively with it. In doing so, they

sometimes are contributing to a collaboration which is not directly helpful for themselves. However, multiple actors (R2; R8; R9; R14) indicated that after a while, the collaboration has added value for all of them, for their own ability of dealing with undermining crime. Not only do the involved actors react to the problems at hand, they are trying as well to change the situation in Rotterdam Zuid in such a way that future undermining criminal activities can be prevented. This has to do with breaking down certain structures and stimulating sustainable change. Their shared ambition is to create “a safe, honest and fair Rotterdam” (R4), in which people can live, stay and work in an enjoyable way (D16). Working in such a way however, requires a redefinition of the classic job of involved organizations. The police cannot only catch criminals anymore (R11-12), the Tax Authority cannot just look at the correctness of tax declarations (R8-9), the municipality cannot only come up with new laws and regulations (R1-3) and the Public Prosecution cannot only prosecute people (R5-7). All need to think about ways to combine their core business with new approaches in order to really deal with the problem of undermining crime.

## 4.2 Interventions of network actors

By interviewing the main actors of the network fighting undermining crime in Rotterdam Zuid, a wide range of interventions were described in which (elements of) nudging were used. Most often the respondents were not aware of this, however most are familiar with the concept of nudging. In this part the different interventions of (part of) the network are described and interpreted in terms of nudges and their effects.

### 4.2.1 A different way of looking at problems

‘Not so long ago, a police officer would try to catch a drugs dealer by arresting some of his costumers and subsequently the dealer himself. However, within two weeks, the dealer would do the exact same job again or someone else would have taken his place. Of course, the police has to keep on doing this, however we have to do something about the problem itself, otherwise we are trying to empty the ocean with a thimble’ (R1; R12).

Especially in the safety domain, the tendency is to tell people what they should do, what is prohibited and what the consequences are (R1). The assumption is that people are rational and do actually think about choices they make, that is not the case however (R1; R3). Often it is said that punishments should be tougher and fines should be higher, “but do you really think that someone who has to pay a fine of €400 is not going to break the law anymore if the fine is raised to €900? I do not think so” (R3). For all partners, this means a change in the way they are dealing with problems. Respondents of the police mentioned a change towards a way of working in which they are not ‘just’ reacting to incidents but are trying as well to break down certain systems together with other partners (R11-13). The goal is not (anymore?) to just get people in jail but to figure out as well what leads to certain criminal activities (R4). At the Tax Authority as well, they mentioned the needed change in the way of thinking: people are raised with a fiscal perspective, for dealing with undermining crime however, a much broader perspective is needed (R8; R9). Various respondents from the Public Prosecution mentioned the feeling that just prosecuting people was not enough to actually deal with the problem. It is still needed and important, but to realize a real improvement in the area, other actors are needed as well. For example, youth care organizations in the area. To organize meetings with actors out of the familiar prosecution scene and to share information with each other, much more is possible (R5-7). Respondents from different organizations mentioned that instead of going for the quick wins, they are trying to focus on changing patterns and breaking down certain networks (R1; R4; R7; R10). They increasingly realize that it is only the top of the iceberg they are aware of and which is visible (R1; R7). The city marine describes the way of dealing with undermining crime as ‘heating the water around the iceberg so the ice will slowly melt, because just keeping on slashing the iceberg is meaningless’ (D16). Sometimes it has to do with flip-thinking; a story of one of the

civil servants is a beautiful example of this: at one of the main squares in Rotterdam Zuid, Zuidplein youngsters were hanging out every Friday and Saturday night, not just to meet one another but to fight and to rebel. The police and civil servants tried to calm down the situation by asking for more police, later on accompanied by dogs as well. What turned out to be most effective however, was an organ grinder who was playing his music on those nights (R3).

Those stories and others discussed in this chapter as well, show a change in the way of thinking of actors: they are more aware of the bigger picture and thereby of different ways of influencing as well, next to the direct and rational approach. There is not a specific nudge which is used here, but the awareness of the influence of the environment on one's behaviour can be recognized.

#### 4.2.2 The influence of the surroundings

When talking about the kind of interventions respondents are organizing concerning undermining crime and the reasons why they do certain things, the idea of nudging is often very present. Although most actors do not call it nudging, the idea of the influence of the surroundings on behaviour of people is something most people are aware of. Moreover, they use this idea as well to argue for certain interventions. Multiple actors are looking at what kind of behaviour the surrounding is inviting people to (R1-4; R7; R12). In order to make use of this idea, meetings with housing corporations are organized to see what they can do about the 'appearance' of their buildings (R1; R4). A model which is developed to discourage certain behaviour is mentioned by multiple involved people as the 'barrier model' in which they create all kind of barriers to prevent people from doing 'wrong'. An example is given about the car branch in which actors from the Hartcore network are collaborating with people from the branch itself to make it much harder to use car businesses for illegal activities. One of those barriers is the introduction of the possibility to only pay by card, which makes laundering money much harder (R2). In other branches they are trying the same: to make sure the branch itself is checking as well if someone is actually running a proper business and what someone's background is.

By designing the surroundings in such a way certain behaviour is discouraged and other behaviour is encouraged, nudging is implicitly used. "If the environment is one in which criminals can do whatever they want, . . . the resilience in a neighbourhood will disappear. We need action of governmental actors to show the good people that criminal activities are not accepted" (R14). Implicitly the respondent is referring here to the norm in the neighbourhood and the attempt of the government to make sure the norm is not set by criminals. Moreover, the example of the car branch shows the use of a social norm as well: by showing car businesses the acceptance of cash is not okay anymore, a norm is set as well. Moreover, they are warned about the risks they are taking when they do not follow this new norm.

Influence of the surroundings and the car branch	Indicators
<b>Nudge: idea of nudging</b>	Arguing the influence of the surroundings on the behaviour of people
<b>Nudge: social norm</b>	Behaviour of others in the branch and in the neighbourhood
<b>Nudge: feedback</b>	Warning people of the risk they are taking if they do not adjust to the norm
<b>Effect: external</b>	Actors expect this is going to have an effect, measured effect was not yet known
<b>Identified in</b>	R1-4, R7, R12, R14

Table 3: nudges and effects in 'influence of the surroundings and the car branch'



#### 4.2.3 Badger is mad - 'detour' influence

In one of the neighbourhoods of Rotterdam Zuid, a cartoon badger was designed and kids could find signs on the streets to find out where this badger was living. 'It turned out it was living in one of the parks, the Zuiderpark. Always when it appeared, it was accompanied by a police officer because the police is the friend of badger. There were videos made about the badger and it went to schools to tell about a 'burglary in its castle' which took place and what the kids had to do now'. By creating this cartoon of a badger, actors tried to influence the perceptions of the children about the Police and about safety. The goal is to change the attitude of people towards the Police and the idea is that when children will talk about it, it will influence their parents and other family members as well.

A strategy which is used multiple times in order to deal with undermining crime, is trying to find other persons or things who/which can influence the actor they actually aiming for.

This is another way of consciously changing the surrounding in order to change the behaviour of an actor or group. This positive introduction of the Police to children and to 'learn' them to report to the Police (R1), is one of the given examples. The nudge of using the social norm to change behaviour can be recognized in this intervention. When children learn in this way that the Police is reliable and that it is normal to report a crime, it is a norm which is tried to teach them. Moreover, by reminding them of this norm again in video's, visits of Badger to schools and poster, priming is used as well.

Although not all respondents are aware of this strategy, they argue that telling people something or warning them directly is not always the right way to convince them and actually change their behaviour (R1-3; R7; R12). More often, some argue, it is more effective to search for people or things in a community who/which can influence the rest. In these cases, the rational way of influencing is not leading anymore. In terms of effect, respondents (R1; R12-13) argue that just measuring this is impossible, so the effect is more an experienced and expected one. Experienced because the Police officers in the neighbourhood actually experience how kids react differently; expected because involved actors believe this way of influencing behaviour works.

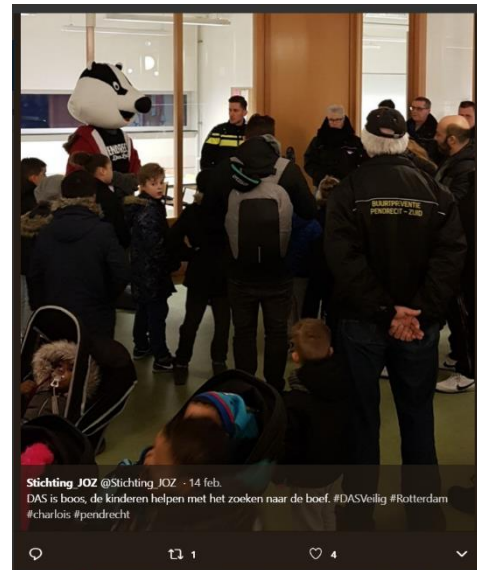


Image 4: Badger surrounded by police officers (Stichting JOZ, 2018)

The badger	Indicators
<b>Nudge: social norm</b>	Behaviour of children towards the Police and the norm of reporting to the Police
<b>Nudge: framing</b>	Police framed as the friend of badger and of children; difference between good and bad (helping Police vs the ones breaking into badger's castle)
<b>Nudge: priming</b>	Reminding children of those values by inviting badger at school, signs in the neighbourhood
<b>Effect: external</b>	Experienced by Police officers in the neighbourhood: children coming to them; Expected: believe in the effect of this intervention

Identified in	R1-3, R7, R12-13
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Table 4: nudges and effects in 'the badger'

#### 4.2.4 Beijerlandselaan and Afrikanerwijk – two real nudges

One of the bigger streets in Rotterdam Zuid, the Beijerlandselaan and Groene Hilledijk (the extension of the Beijerlandselaan) is a street full of different shops and stores, however it is not the nicest and most peaceful street in the area. Respondents asked the Chief Government Architect of the Netherlands and others to walk through the area and look at the kind of behaviour the environment is inviting people to (R1; R6-7; R10). One of the observations was the awnings at all the stores which are blocking the view and together with the mess in the street, the overview is lost. In another neighbourhood, the Afrikanerwijk, they already changed the environment to invite more people to walk into the neighbourhood: the first stores and bars you see when leaving the metro station are redecorated, roads are extended and awnings are taken away in order to make the whole overview much nicer (R1; R3).

The question of what kind of behaviour the context is inviting people to, is quite a new one. The original idea was that people do certain things because they want to, not because of the setting they are in. Within the network, this new question is actually asked by multiple actors (R1; R3; R7; R10). At the Beijerlandselaan and the Groene Hilledijk this process is still ongoing, so in terms of effect actors can only expect that changing the appearance of the street will help. At the Afrikanerwijk however, a similar intervention already took place and according to one of the respondents (R1), the change is noticeable: there are more women and children on the streets the nicer cafes attract less disturbing people and the safety index of the neighbourhood showed an improvement as well.

Beijerlandselaan and Afrikanerwijk	Indicators
<b>Nudge: idea of nudging</b>	Deliberately changing the surroundings to change behaviour; using this reasoning as an argument for an intervention
<b>Effect: external</b>	Measured at the Afrikanerwijk in the safety index; Experienced by actors walking around in the Afrikanerwijk; Expected by actors at the Beijerlandselaan because of the invitation of a behaviour expert
Identified in	R1; R3, R6-7, R10

Table 5: nudges and effects in 'Beijerlandselaan and Afrikanerwijk'

#### 4.2.5 Early birds – changing the default and framing the message

When a young child gets in touch with the Police because of a small crime, because it is disrespectful, or just because it is alone on the street in the late evening, the Police normally talks with the parents of the child. Instead of telling them their child did something wrong and it is their responsibility to prevent it, they developed a different message: 'we are worried about your kid, can we help?' (R1). They changed the age of the children they are doing this with to a lower age, because in that phase, parents can still influence them. Moreover, parents are most often very happy with the offered help because they do not know what to do. Often the Police or Public Prosecutor can link them to one of the youth organizations working in the neighbourhood.

The change towards a younger group of kids was a very conscious one: the standard was to focus on the ones with the age of 17 and older, however they changed this towards a younger age to increase the



influence. Next to the change of this default, they use the frame of offering help instead of the blaming one, because they believe (and experience) that this has a bigger effect. Parents were in fact much more willing to talk to them than before (R1).

Early birds	Indicators
<b>Nudge: default</b>	Deliberately changing the default of the age of the children when the Police talks to the parents
<b>Nudge: framing</b>	Changing the emphasis in the message the Police is using
<b>Effect: external</b>	Experienced by professionals in the neighbourhood
<b>Identified in</b>	R1

Table 6: nudges and effects in 'early birds'

#### 4.2.6 A city to be proud of – #Zuidvertelt and other stories

For a long time, Rotterdam Zuid was known by most people as a bad area where one did not want to live. “The reputation of Rotterdam Zuid is a disaster”, as one of the respondents (R1) put it. In order to change the reputation and to change the attitude of people towards Rotterdam Zuid to a positive one, a couple of initiatives emerged. The Police started with #zuidvertelt (south tells), stories of people from Rotterdam Zuid and people working there, telling a positive story (R1; R7; R10; R12). Those people tell about their experiences, their ideas about the area. Although they are not all positive ones, it shows the many opportunities of the area. The aim is to change the reputation of Rotterdam Zuid, both of the inhabitants as well as of others. One of the Police officers had the same goal when he made the video ‘the beating heart of South’ ([het koppend hart van zuid](#)):

“when we started at South, everything was bad, but I thought we need a positive picture of the area as well” (R14) and therefore he made this video: to show both the difficult and the beautiful places of Zuid (see video below). He especially aimed for his colleague’s, to show them the potency of the area and to point out good things as well. Although others were very sceptical about the initial idea, many were very enthusiastic about the video itself and it is already used at many places. “When I saw the Major and the Alderman both had tears in their eyes, I knew we made something good” (R14).



Image 5: video about Rotterdam Zuid: 'Het kloppen hart van Zuid (SGB Ondernijning Rotterdam, 2018)

All these initiatives are trying to show positive role models and aiming for empowering others by doing so. Moreover, it puts a different spotlight on the area: there are not just shootings in the South of Rotterdam but there are great people with promising potency as well (R1; R12). Using a different frame than the negative one which is so often used (in the media and by many others), actors consciously trying to influence the picture people have. “We very consciously are using a positive tone . . . , we communicate about increasing the safety instead of dealing with the unsafety” (Dela Haije, in Jansen, 2017).

Involved actors describe it is hard to measure a direct effect of such interventions (R1-2; R7; R12; R14). However, as one Police officer put it: “I do not know what the effect is in the long run, but I do know for

sure that it is bad not to do it” (R14). One instrument they use is the safety index of the different neighbourhoods in Zuid, however it is impossible to isolate such an intervention as positive framing from other interventions in the area in terms of effect. The effect is mainly experienced by actors themselves and by others they know (R1; R12; R14).

#Zuidvertelt and other stories	Indicators
<b>Nudge: framing</b>	Consciously choosing certain words, telling a particular story and creating a certain picture of Rotterdam Zuid
<b>Effect: external</b>	Experienced external effect of people having a more positive picture and better results in the safety index (partly measured)
<b>Effect: internal</b>	Experienced internal effect because of positive reactions of involved actors – shared understanding
<b>Identified in</b>	R1-2; R7; R10; R12; R14

Table 7: nudges and effects in '#zuidvertelt and other stories'

#### 4.2.7 De-anonymising the neighbourhood – crime can't be the norm

In some parts of Rotterdam Zuid, it is common not to go to work, that money comes from inexplicable places and the Police is an untrustworthy actor (R3). Others living there and children growing up in such an environment have such a different social norm around them that it does not stimulate them to 'just get a normal job' (R3; R12). When crime is the norm, it can become very hard for others not to adjust to this norm. Moreover, for a long time, many of those people involved in criminal activities could work anonymously in the area and feel they were not mentioned by anyone (R7). 'Trying to de-anonymising the area' is something multiple actors are trying. What they mean in that it should be noticed if people do something illegal or when, especially young people are tend to become part of illegal activities/groups. As another respondent mentioned: 'the absence of the government in a certain area leads to more crime' (R3). It leads to the diminishment of collective resilience when crime is a normal thing in an area. To make sure that this is not going to happen, actors of the Hartcore network are trying to show in all possible ways that crime does not pay off (R1; R4; R7; R11-14). One part is by prosecuting criminals and by clearly showing that the government is dealing with those people and cases. Moreover, it is about making sure people (who might do something illegal) know that the government is watching them (R6-7; R12). The aim is that the 'good people' know that the Police is an actor they can actually trust. An initiative trying to establish this is DAS (described above) and school visits of the Police and/or Public Prosecution as well.

The used line of reasoning here is one of changing the environment in order to evoke a certain kind of behaviour. A frame is used (consciously) when talking about crime as something which does not pay off (R4). Even more clearly, the nudge social norm is used: respondents (R2-3; R12) are aware of the negative influence of the wrong norm in an area and simultaneously that setting a different norm (for example at school about the Police) can change behaviour. In terms of effect, again it is hard to separate those interventions from the others and therefore to know what the effect is. The extent to which the Police is trusted is partly measured in the safety index and can be seen in the amount of notifications the Police gets.

De-anonymising the neighbourhood	Indicators
<b>Nudge: social norm</b>	Being aware of the current social norm in some areas and trying to change this norm in order to influence behaviour
<b>Nudge: framing</b>	Consciously creating a certain picture and a certain message that crime does not pay off
<b>Effect: external</b>	Experienced effect by actors in the neighbourhood witnessing a changing norm; Measured effect in the safety index and the amount of reports from the area itself
<b>Identified in</b>	R1-4; R6-7; R10-14

#### 4.2.8 Money Transfer Organizations

Multiple actors mentioned the way they dealt with the many Money Transfer Organizations (MTO's) in Rotterdam Zuid as a success story (R1; R5-6; R8; R11; R13; R15). It is called one of the examples in which they felt they were able to actually disrupt unwanted patterns and change something for the better (R11). What happened was that it turned out that only in just two streets, there were 19 MTO's, which is quite unlikely (R3, R15). Some disappeared when some civil servants went there, 'just to do some small talk' (R3). After making it a case of Hardcore, they were able to close 10 of them, partly because of suspected transfers, illegal money and objects which were found (R7; R13). To convince his colleagues and superiors of this intervention, a Police officer (R13) made a simple video and image of the many MTO's in the area and the others felt so ashamed they were not aware of this, that they were convinced straight away of this strategy. In order to prevent illegal MTO's returning to the area, someone from the Public Prosecution invited the Nederlandse Bank (the central bank of the Netherlands) to be shown around in the area. 'When the visit was opened by the Alderman and closed by the Mayor, the invitees felt how important this topic was and that they could not be the ones not joining this intervention' (R5).

In terms of direct effect, the intervention was not very successful: some fake money was found, as well as passports (R13). The sequel of the intervention however, was much bigger: the branch itself was invited to the area and became aware of the need to prevent such illegal practices. Moreover, half of the MTO's was closed. This effect was very visible and clear which helped actors to legitimate their actions (R5; R7; R13). The video which was made as well as the image of the MTO's to convince others of this intervention (see image 7), can be regarded as a simplification nudge: be showing just the illegal MTO's in the area, the picture and message was very clear. The involvement of the branch itself can be seen as an example of creating barriers to prevent certain unwanted behaviour.



**Image 6: image of the closed MTO's (SGBO Rotterdam, 2018)**

MTO's	Indicators
<b>Nudge: framing</b>	Consciously choosing certain images, inviting certain people and telling a particular story when talking to colleagues and the Nederlandse Bank
<b>Nudge: simplification</b>	Simplified picture of the MTO's in Rotterdam Zuid
<b>Effect: external</b>	Measured effect of the confiscated objects and the amount of closed MTO's; Expected effect of a decrease of illegal money at Rotterdam Zuid
<b>Effect: internal</b>	Experienced effect of the involvement of the Nederlandse Bank and the support of network actors for this approach (commitment of others)
<b>Identified in</b>	R1; R3; R5-7; R8; R11; R13; R15

Table 9: nudges and effects in 'MTO's'

#### 4.2.9 Illegal gambling is not a game

In many cafes in Rotterdam Zuid people can watch all kind of sport matches while having a drink together. Some people make a bet, however at some places this is organized professionally. The huge amount of cash and gambling notes show the illegal practices. Not only criminals are part of those games, gambling addicts are as well (Schram et al., forthcoming). Often, those people get into trouble and are even more vulnerable for criminals. When the Public Prosecution got an idea of the seriousness of this problem, especially in the area of Rotterdam Zuid, it became one of the cases of Hardcore in which they involved the Netherlands Gambling Authority as well (R2; R5: R8). The persons who facilitated illegal gambling were prosecuted, however that was no solution for the addicted gamblers or for the café owners who

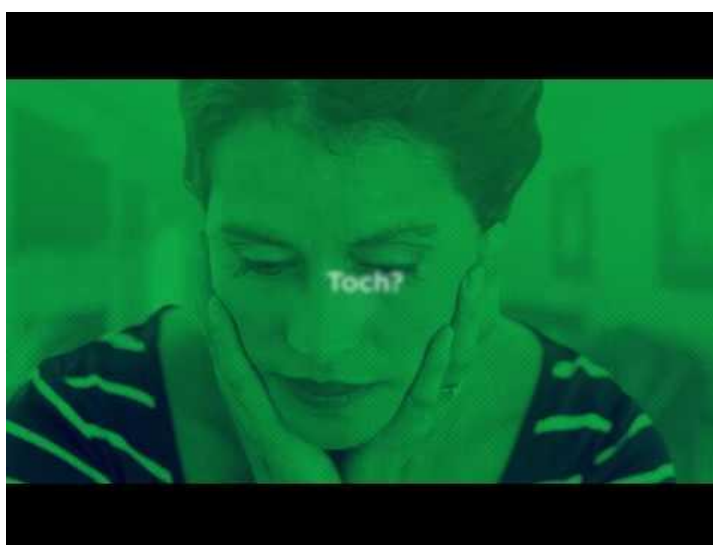


Image 7: illegal gambling campaign poster ("Illegal gambling at soccer matches? That is something my brother would not do! Right?) and image 9: video about the campaign (Kansspeelautoriteit, 2018)

were pressurized (R5). To deal with the core of the problem as well, the partners of Hardcore started a campaign. Because they already knew that people were aware of the illegal aspect, the goal was to make people aware of the frequency of the gambling, the seriousness of the problem and to start the conversation. The key message was: 'talk about it' (R1; R3; R5). "We wanted to get the issue on the table,

that people would talk about it so the shame on the issue would decrease” (R5). Next to the fact that many did not know about the way in which facilitators were cheating and making a lot of money at the expense of the gamblers, the issue was a very shameful one, especially in the Turkish community at Zuid (R1). The message was told in a video and posters (see image 8) as well as video carts were made and distributed among cafes in the area.

In order to deal with all aspects and the causes of the problem of illegal gambling, the partners of Hartcore together with the Netherlands Gambling Authority were forced to think in a different way: telling people something is illegal when they are aware of it, is not going to change much (R1). To really influence people’s behaviour, the pressure of their social environment was used: be stimulating people to discuss it and by showing that others think you should not do this. Here the social norm is used as a nudge. Moreover, on the website of the campaign, people could find what they can do themselves:

What can you do? Do you know someone struggling with this? Maybe your father, brother or son? The café owner on the corner? Or do you have problems because of illegal gambling yourself? Start talking about it. Or seek help. Because you can stop. Really. (The Netherlands Gambling Authority, 2018)

The goal was to decrease the illegal gambling in the area and, in the long run, to increase the social resilience (R2). Multiple actors described the difficulties of measuring the effect of this intervention (R1; R2; R8). An indicator was the amount of views the video got (11.000 and 1.400 people clicked on the link of the website subsequently) (R1). Another was the ‘significant increase of interest the Foundation of Anonymous Gambling got’ (an organization which helps addicted gamblers). Moreover, some meetings were organised about it by people themselves and involved professionals witnessed a decrease of the problem (R1). Both of the latter ones are experiences effects, measured effects turned out to be much harder to find (R8).

Illegal gambling is not a game	Indicators
<b>Nudge: framing</b>	The message was framed in such a way it would get people thinking instead of telling them it is illegal
<b>Nudge: social norm</b>	Calling on the behaviour of others and describing a social norm
<b>Effect: external</b>	Measured effect: the amount of views of the video and the increase in interest the Foundation of Anonymous Gambling got; Experienced effect of professionals in the area
<b>Identified in</b>	R1-2; R5; R8

**Table 10: nudges and effects in ‘illegal gambling is not a game’**

#### 4.2.10 Donald Duck – making reading fun

For the students at the Da Costaschool in Rotterdam Zuid, the start of last school year was quite an unexpected one: they all got the Donald Duck magazine a whole year for free. The City Marine of Rotterdam Zuid came up with this idea because he saw at home how this magazine was a very nice way for his children to read. When the NPRZ organized a meeting about language deficiency of children in Rotterdam Zuid and how this limits them in their ability to learn and to express themselves, he thought of this intervention. The Donald Duck became the ‘Trojan Horse’ (R1) to introduce Dutch into families and to ‘seduce’ children to read more Dutch.



The idea behind this initiative is that language deficiency is an indicator for early dropout from school and from work and social activities as well (R12; R14). The effect of the Donald Duck is visualised in the scores of the students which increased already during the year and hopefully the scores at the end of the year will prove the improvement of the students. Teachers already mention a difference in the language proficiency of children (R1). This 'Donald Duck offensive' is an example of stimulating and supporting good developments (R11; R14). Implicitly, actors nudged the students to read more in Dutch by making it a nicer and easier option.

Donald Duck	Indicators
<b>Nudge: increase in ease and convenience</b>	Making it easier and nicer for kids to read Dutch
<b>Effect: external</b>	Measured effect: language test; Experienced effect by the teachers at the school
<b>Identified in</b>	R1; R11-12; R14

Table 11: nudges and effects in 'Donald Duck'

#### 4.2.11 Bad and Breakfast – vlogging about undermining

Multiple times residents called the Police about a coffeeshop in the neighbourhood and they were frustrated nothing seemed to happen with those notifications. Why did nothing change? Contrary to appearances, the Police and others were very busy organizing a raid in the coffeeshop. It turned out to be a successful one: three people got arrested and the coffeeshop was closed for a couple of weeks by the Municipality (O3; O4; R11; R14). To show and explain to citizens that this kind of interventions need a lot of preparation, how many partners are actually involved and that the role and input of citizens is essential for the success of it, a mini-documentary is made by the Police. Police Officer Sander Boer is followed during this raid, the preparation and the finishing part. It shows the complexity of this topic and the many actors who are needed to actually deal with it. Viewers are asked to respond to the video and say something about the undermining criminal activities they might know themselves (R11; R14). The idea is to introduce this topic to people, to show that the partners of Hartcore are actually dealing with the problems and, in particular, how important the role is of citizens themselves is. The implicit message is that reporting a crime or possible crime to the police is what you should do.

PRO247 is an initiative of the Rotterdam Police in which they show in vlogs what the job of a Police officer actually contains. The bigger goal is to frame the Police in such a way that people understand better why the police sometimes behave the way they do and to increase the legitimacy of the Police. By showing different situations and hearing the reactions of the officer, "we want to show people that some reactions to the Police are just not normal at all", a Police officer puts it (O3).

A nudge which is used in this initiative, and recognised as such by respondents themselves, is framing (O4; R11-14). The Police and other involved actors are framed in a certain way by emphasising certain parts of the job and by telling a story (in a vlog or mini documentary) in a certain way. Moreover, a social norm is set by showing other citizens who actually help the Police and by disqualifying disrespectful and aggressive behaviour. Some of the videos use simplification as well to explain complex issues to the viewers by reducing the complexity to a simplified picture so it is understandable.

The direct effect of those videos is measurable because of the amount of views (which is a lot) (R12). The bigger effect however is impossible to measure. Here again, it is beyond measurable effects: the intervention cannot be separated from others. They use the safety index of neighbourhoods to get an

indication whether the safety and perception of the Police changes in a positive way. An internal effect is the increase in shared understanding of involved actors of each other's job.

Vlog bad and breakfast	Indicators
<b>Nudge: framing</b>	Consciously choosing certain words and images to tell a particular story
<b>Nudge: social norm</b>	Setting a social norm by showing what is 'normal' behaviour
<b>Nudge: simplification</b>	Simplified information
<b>Effect: external</b>	Measured effect: amount of views; Experienced effect by Police officers and other professionals working in the area
<b>Effect: internal</b>	Experienced increase in shared picture of the approach and each other's job
<b>Identified in</b>	O3-4; R11-14

Table 12: nudges and effects in 'vlog bad and breakfast'

#### 4.2.12 No gun in my neighbourhood – setting the norm

The many shootings in Rotterdam Zuid indicate one of the main problems in the area, according to many inhabitants and the City Marine. To decrease the number of shootings and guns in the neighbourhoods, multiple organizations started an initiative together. In order to spread the message, a video and posters were made with the slogan: “weapons out of the neighbourhood; not in our street; if you see a gun, stay away but do something, report it” (R1). Moreover a [website](#) was made on which people could sign the petition and show their support to the campaign. In order to create real impact, people organizing this campaign asked people on the street if they wanted to be on the picture with the poster. The goal was to show others that many people are against it. Actors asked this to address the problems of ‘snitching’: people feel they are letting others down when reporting to the Police (R1; R7). By showing how many others are against guns in the neighbourhood as well, “they tried to change the norm: you do not have a gun, and one step further: if someone has a gun you report it” (R1). Many people stood up against gun violence and joined the campaign (709 people have signed the petition at the moment of publishing). People with all different kind backgrounds found a common ground in the joined action against (possession of) weapons (R1).

In this intervention, a couple of nudges can be identified. The use of the social norm in the neighbourhood was a conscious decision of the use of nudging by the initiating actors. By showing others that many people are experiencing the same problems and are against gun violence, the issue of ‘snitching’ would hopefully disappear, actors argued (R1; R12). Of course, the set norm was that it is normal not to have a gun and to report it if someone has one.



Image 8: people from the initiative 'wapens de wijk uit' (RTV Rijnmond, 2018, April 2)

No gun in my neighbourhood	Indicators
<b>Nudge: social norm</b>	Actors are explicitly calling on the behaviour of others and naming a social norm
<b>Effect: external</b>	Expected effect because it just started, possible effect is put in measurable indicators
<b>Identified in</b>	R1; R6-7; R12

#### 4.2.13 The 3 minutes society – Agora pages and South newspapers

[illegible]

60



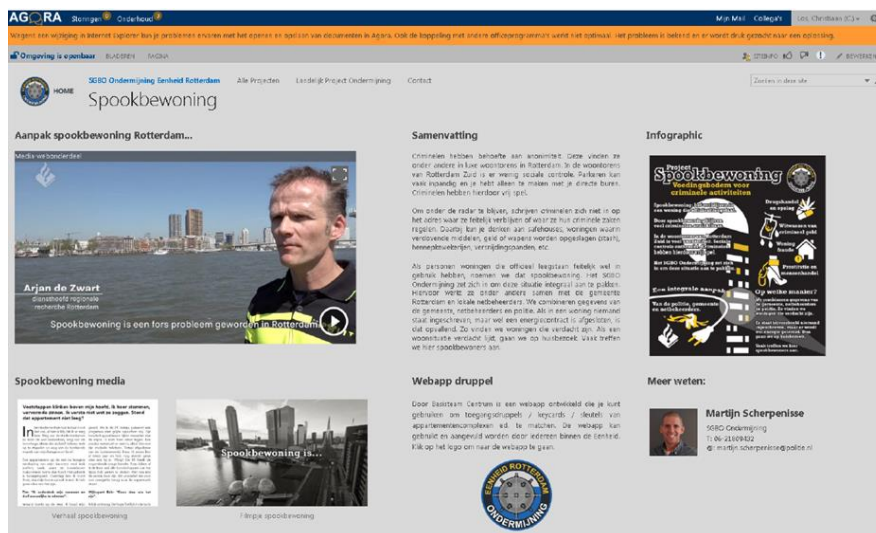


Image 10: Agora pdf of the Police about illegal housing (SGBO Rotterdam, 2018)

Another aspect the makers of those Agora pages focus on is the way it looks: “it should just look attractive”, one of the Police officers put it (R11). With catchy pictures and videos, they are trying to make it look nice and attractive to get someone’s attention. The Agora page about illegal housing is a good example of this (see image 11).

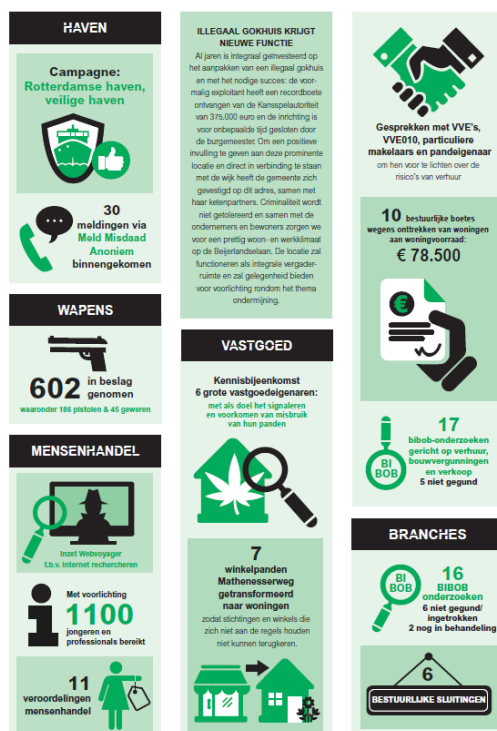


Image 11: second page of the report of undermining crime of the Municipality of Rotterdam (Gemeente Rotterdam, 2018)

At the Municipality of Rotterdam, they changed the way in which they show the results of their policy concerning undermining crime. This [document](#) of only three pages is full of infographics, some short texts with information but mainly pictures and numbers (see image 12). As one of the civil servants put it: “ones a year I want to have a clear overview in which we can show, together with all the partners we are working with, what we are actually doing” (R2).

At the NPRZ, a similar change took place: instead of a big document full of complex tables, a report presented as a ‘newspaper’ is the new way in which they are reporting their progress, initiatives and results (R10). Because it is much clearer and it does not take long to read, many more people actually read it and are very positive about it.

An obvious nudge used in all three examples is simplification. Actors (R2; R8; R10; R12) themselves argued that because of the simplified picture, people are triggered and actually read the text or watch the video. Because of the given overview or clear steps, readers are triggered to do something themselves. This is one of the goals of those pages (O2; O4). The idea of 3 seconds/minutes/clicks suits

the idea of the nudge ‘increase in ease and convenience’, because it costs less effort and time to actually read the information. By making it look nice and attractive as well, people are invited (seduced) to read it. Especially in the Agora pages of the Police, the makers chose their words and the images carefully: they are aware of the influence of framing on their colleagues and others (R12-13).

Most respondents are very positive about the effect of these kind of pages. “It just works: people read it, get it and are very enthusiastic about it” (R13). Respondents at the Tax Authority expect these kinds of pages to help them as well explaining others what they are actually doing at the Police. Within the first

couple of months of 2018, there were between a 750 and 1100 people a month visiting the Agora pages and often contact persons are called for further questions (D11).

Agora-pages	Indicators
<b>Nudge: framing</b>	Consciously choosing particular words, images and people to tell a certain story
<b>Nudge: simplification</b>	Simplified options, steps and pictures of complex processes/practices
<b>Nudge: increase in ease and convenience</b>	Easier, nicer and less time consuming to read the pages
<b>Effect: internal</b>	Measured effect: number of visitors; Experienced effect: reactions of colleagues
<b>Identified in</b>	D1-13; O2; O4; R2; R8: R10-13

Table 14: nudges and effects in 'Agora-pages'

### 4.3 Effectiveness: how do you know what you bring about?

Regarding the effectiveness of the interventions in Rotterdam Zuid fighting undermining crime, all respondents (R1-15) agreed on one thing: it is very difficult to measure it in a classic way (mainly numbers). This new way of dealing with undermining crime in a network as they are doing in Rotterdam Zuid is regarded as an experiment (R4). The final effect they are trying to achieve is shared as well: making Rotterdam Zuid a safer and more liveable place and a way to get there is by increasing the social resilience of the area (R2; R6-7; R10-12; R14-15). Finding a way to measure this is hard though. Because it concerns an issue which is not fully in the picture yet, it is sometimes hard to say whether the situation is getting better or worse, or that more is discovered about undermining practices (R2; R4). Moreover, it is typically a 'project' which is not going to be finished within a year or two but needs a lot of patience, time and adjustment.

Concerning the effects of the Hardcore network interventions, most respondents talk about a combination of expected, experienced and measured effects. "It is a combination of factors: if your gut feeling is telling you something is gonna make a difference, you should do it and see if the numbers and analyses prove you right" (R2). Actors however differ in the way in which they think effects should be measurable in the short run or that in the long run a difference should be witnessed. This seems to depend on the way they are held accountable within their own organization as well. For example, the Public Prosecution and Tax Authority are centralized organizations which have to hit certain targets (R5-6; R8-9). The part of the Police dealing with the undermining crime (the SGB0) and civil servants at the Municipality, the NPRZ and the city marine, seem to have more freedom in terms of the initiatives they organise (R1-2; R11-12) and thereby the effects they have to measure in the short run. The RIEC is mainly focussing on cases and on the direct effect of their actions, like the closure of a building and the way in which governmental actors are collaborating, not so much on the indirect effects on for example criminal networks and the societal resilience (R15). This shows how differently the involved actors are dealing with getting grip on the effects of their actions and in terms of the freedom they get from their own organisation.

In terms of *expected effect*, actors look at similar approaches and 'copy' successful initiatives from other places or past interventions (R5-6; R10; R13). Expected effect can be a combination of a good analysis and gut feeling as well, a Police officer argues (R11; R13):

You have to trust you are doing the right thing when you are working together with so many involved and experienced professionals. If we are going to wait till we have proven everything, in 30 years we are still thinking what to do (R11).

*Experienced effects* seem to be the most important one: stories of residents and professionals from Rotterdam Zuid itself are used as an indicator. The causality between one intervention and experienced effect is however impossible to define (R1; R6). To illustrate their different way of thinking about effects, they use the metaphor of the iceberg. One of the Police officers added to this that “storytelling is often a much more suitable way to share successes and experiences because the complexity of these problems is not expressible in numbers” (Jansen, 2017, p. 2).

Parts of the effect are possible to *measure*, though this is most often a bigger picture. An example is the safety index which is made every second year by the Municipality of all neighbourhoods. Actors use this as well to measure the effects (R1-2; R6; R11). A critical note though is that those numbers often reflect what the network is focussing on (R1). Some respondents are quite critical and argue that for the residents of Rotterdam Zuid, the effects are still too often negligible, and those people should be the ones witnessing the effect (R6-7; R10). The NPRZ organized a cost benefit analysis to measure their effects, which was generally positive. Some respondents however argue that the effects which are measurable are not always telling them how well they are actually doing: the real effects are often in the long run. An aspect of the interventions as well is “practicing to look differently at the world in order to connect with the rhythm of the city, to learn how to collaborate and to deviate from the familiar pattern” (R11).

Some respondents mentioned some negative effects of the interventions as well: counter reactions from criminals and struggles in finding a right balance in the collaboration between network activities and actors’ core business. Because the latter one concerns the collaboration within the network, it is discussed later on. Concerning the first one:

Some criminal groups feel that the government is organizing itself and therefore they are organizing contra-activities . . . It shows that we are hitting them at the right place, but it means something for the government itself as well (R15).

Another actor argues this is unavoidable and otherwise the neighbourhood would be affected negatively again (R14).

#### 4.4 Collaboration: finding a balance between networking and core business

In order to research the influence of nudging on the collaboration of actors dealing with undermining crime in Rotterdam Zuid, data about this topic were collected as well.

##### 4.4.1 Collaboration all the way?

The network approach itself is for all actors beyond dispute: “only the safety approach is not enough” (R12); “the integral approach is the starting point of the approach of undermining crime, otherwise everyone is just doing their own job” (R2). All respondents agree that on their own, they cannot deal with the problem: to create real societal impact, collaboration is needed (R1-15). The way in which they are collaborating and to what extent actors should collaborate, respondent have different ideas. The Police and the Municipality (including the NPRZ and city marine) seem to have a lot of faith in the process of collaboration in the network (R1-2; R11-14). They however realize as well that it is not easy:

A network approach is the difference between a one-night-stand and a real relationship: a network it is not a one-night-stand in which you just have fun; a real integral approach is much more, sometimes it even hurts a bit”, according to one of the Police officers (R11).

Although respondents mention the difficulty to truly collaborate, they believe that in this way they can prevent certain problems instead of keeping on reacting to incidents (R4; R13). Moreover, actors believe in the process because they are convinced that together they are doing the right thing (R11).

At the Tax Authority and Public Prosecution however, they feel a bit more tension between their core business and the network. One of the Public Prosecutors explained that it is sometimes hard to find a right balance between the priorities of the network and their own job (R6). At the Tax Authority as well, they sometimes feel this tension (R8-9). In both organizations, this seems to be partly linked to the accountability system. The right balance between the organization's core business on the one hand and the network priorities on the other hand, seems to be a struggle all organizations are having till a certain extent.

#### 4.4.2 Sneak peeks and other ways to create a shared understanding

How do actors deal with those differences? How do they convince partners within the network as well as colleagues of their own organization of this way of working?

One method which is often mentioned in order to create more respect, getting more insights and more understanding of each other's job, network actors organized sneak peeks at each other's organization. It helped actors to learn about each other's organization and way of working. Within their own organization it helped to let the story of Hartcore be told by someone else (R5; R8; R12). Important as well is the acknowledgement of the differences of the individual organizations: "it would be helpful if you can allow each other's differences and at the same time move along" (R11).

Internally in the network and in the own organization, framing and setting a new norm is mentioned as well. Concerning framing, respondents mentioned to use a certain framework on purpose in order to convince others. A Police officer talked about a video he made in order to confront colleagues with undermining problems and to choose his words in such a way it would make them aware of the problem (R13). The positive framing of Rotterdam Zuid has an internal effect as well: the video about Rotterdam Zuid (het kloppend hart van Zuid) is an example, the way in which the city marine is reporting about Zuid another one (increasing the safety instead of dealing with unsafety). Both initiatives aim for improving the collaboration. In line with this, actors are trying to set a new norm: networking is the new way of working instead of the 'old go-alone strategy' (R1-2: R4; R7; R12). Respondents argue that by showing others that new interventions work and what the added value is of changing the traditional role of the organization, others are invited/induced to join and adjust their role as well. Towards external network partners, actors are showing their way of dealing with the problems by framing the message in such a way, the other party feels they cannot stay behind and have to think along in the prevention of similar problems (R5-6; R11; R14).

The Agora pages which are described in the previous part, are an example as well of the use of nudging improving the collaboration. By simplifying complex problems and network structures, people understand much easier what they can do themselves and what is happening.

#### 4.4.3 Coffee, food and trust

At the start of Hartcore, they invested a lot time in getting to know each other and creating a shared picture of the way of working in the network. These meetings and intensive contact created faith in the network and in each other (R1; R4; R12). Sustaining this relation and trust is turning out to be quite hard though (R1; R8; R10). The more actors seem to be able to find each other (running into one another as well as contacting others), the more they have a shared picture and trust each other (R6-7; R10; R14). For example: the Municipality and Police (SGBO) now share a building and a Public Prosecutor works at the NPRZ. This makes it much easier to truly collaborate, among others because it helps to just have coffee or

lunch together instead of only meeting each other at official moments (R14). Especially the more informal moments like a Christmas drink or a celebration of a small win (like a new video, website or intervention) help to strengthen the network, actors mention.



## 5 Analysis

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*“You have to be realistic: if you would capitalize everything, it would be worthless, but what we are doing is practising to look differently at the world, to connect with the rhythm of the city and practicing doing something different in order to be able to collaborate – so we should not just look what the direct effect is since we are practising to work differently. That in itself is very valuable”*  
(R11)

In the previous chapter, the results of this research are presented. In order to compare these with the theoretical insights and the conceptual model, this chapter analyses the findings from a theoretical perspective.

### 5.1 The complex world of undermining crime

All respondents who were interviewed emphasised that they are not able to deal with the problem of undermining crime alone. They seem to be aware of the complexity of the problem and realize that it is not just a safety issue but is connected to the environment in which children are growing up, language proficiency, education, job perspectives and living conditions. The experiences of respondents reflect the idea of an open system in which different elements all add up to different aspects of the problem. In order to deal with the different aspects of the problem, various actors are involved. Respondents describe how difficult it is to truly collaborate in the network because of the various perspectives, interests and solutions. In line with substantive and strategic complexity, actors have their own ideas about problems and solutions. Moreover, actors have different strategies to accomplice their goals; sometimes their ideas are in line with other actors, sometimes they divert from them (Klijn & Koppenjan, 2015). Quite often, interventions of the Hartcore network do not fit within the accountability system of individual organizations. Since they often still have to hit certain targets, meet certain policies etcetera, actors try to formulate and organize interventions in such a way that they fit the system of the own organization as well. This further adds to the complexity of the problem of undermining crime.

Another aspect of a complex policy problem is the unpredictability. This is found in the relation between interventions and effects, the actions of other actors and developments affecting the network. An example of unpredictability is the intervention concerning the MTO's in Rotterdam Zuid. When talking about this intervention and the initial problem, actors from different organizations have their own way of describing it. It shows the different perspectives which add to the complexity of dealing with undermining crime. For example, actors described that at the start of the interventions concerning the MTO's, they had no clue how it was going to develop and there would be a conference of the branch itself organized at the same time, where the intervention and results could be explained in order to prevent future problems. It shows both the complexity in terms of different perceptions of actors as well as the unpredictability of the development of interventions. In general, respondents described how difficult it is to know the effects of single interventions: usually they cannot be measured since it is impossible to isolate them from other developments and interventions in the area.

These descriptions are in line with the description of complex policy problems of Klijn and Koppenjan (2015). Despite the difficulties, all actors in the network realize that they cannot deal with the problems alone and they have to collaborate in order to make a real difference. In line with system thinking (Gerrits, 2012), the Hartcore network is focussing increasingly on flows and interactions instead of individuals and cases. Before, the focus was mainly on criminals and illegal events. They still focus on this, however it is shifting towards the flows of illegal money, the smuggling routes and providers of illegal practices for example. They do so in order to create a bigger impact, as the actors realize that dealing with individual

cases is not going to make a big difference in the end; instead they are trying to keep the bigger picture in mind. This is, however, not an easy task: prosecuting a criminal can be easy compared to improving the environment in which children grow up; giving a fine to someone breaking the law is easier than trying to prevent people from doing so.

By trial and error actors within the network are finding ways to deal with undermining crime. It goes slowly and not everything works out the way it was planned, but progress can be witnessed. Within the different interventions and ideas of the network, elements of nudging are used as well in order to create impact. This impact is witnessed both on the effectiveness of the network as well as on the internal collaboration of the network. Although network effectiveness and network collaboration can be regarded as very different concepts, this study shows nudging has an effect on both. This is described in the next paragraphs.

## 5.2 The use of nudging – implicit and explicit use in practise

In the theoretical framework of this study, the concept of nudging is defined as “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives” (Thaler & Sunstein, 2008, p. 12). It holds a different way of thinking about the way people behave and can be influenced. For most of the respondents, nudging was a familiar concept, though some defined it in a different way: positive influence, manipulation or just influence. Only two (R1-2) used the word nudging themselves when explaining the way in which they are fighting undermining crime. They consciously chose to use nudging in one or more interventions because they believe it has a positive effect. More respondents could come up with examples of nudging when explicitly asking them (R4; R6-10; R13). Most of them actually believe it helps them to have impact. Some are not sure what the exact effect is, however, they believe it has added value. One of the examples of the explicit use of nudging is the planned changes at the Beijerlandse laan and the changes at the Afrikanerwijk. Here the surroundings are (or will be) changed in order to alter certain behaviour. Another intervention in which the respondent explained the initial use of nudging is the campaign against guns in the neighbourhood.

Interestingly, more often the idea of nudging (referred to as implicit nudging) was mentioned. Implicit nudging is the idea of designing a context in which people make decisions with the purpose of altering people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives (Thaler & Sunstein, 2008). Most respondents argued that it matters how the neighbourhood looks like, what the social norm is in an area, which words you use when telling a story. They argued they figured out that only telling people how to behave and punishing them if they do something wrong, is not enough to break down patterns and truly fight the problem of undermining crime. This shows the acknowledgement of a different kind of thinking about altering people’s behaviour. Moreover, respondents argued that changing the environment is a way of changing behaviour. To get an idea of which aspects of the environment are inviting people to behave in an unwanted way, they also invited experts to think along with them. Multiple actors argued that although they did not use the term nudging as such, they are often using its idea (R5; R8-10; R12).

Some other actors are, however, sceptical about the added value of nudging when it comes to ‘real tough crime’, because they regard it as a soft instrument (R2; R4; R15). They argue that ‘smileys along the road and footprints to a garbage bin are nice but fighting undermining crime is something totally different’. Others doubt whether it can be used by the government as such (R10; R12). According to them, the line between nudging and manipulation is very thin and the government might go too far when using this. They agreed however that transparency would help a lot to prevent interventions from being regarded as manipulation. Interestingly, even when respondents doubt the use of nudging, they all mention it



implicitly: the idea of designing a context to influence behaviour. For example: from all the involved organizations respondents argued that something should change at the Beijerlandselaan because the way it currently looks invites people to unwanted behaviour. Some do not label this as nudging and are not aware of the similarities between their argumentation of the influence of the surroundings and the idea of nudging.

In the table below, an overview is given of the interventions, the found nudges and their effect, both on the network effectiveness (external) and the network collaboration (internal).

	<i>Intervention</i>	<i>Nudge</i>	<i>Effect: internal and external</i>
1.	<i>Influence of the surroundings</i>	<b>Social norm:</b> behaviour of others in the neighbourhood and in a branch + <b>feedback:</b> warning people of the risk they are taking if they do not adjust to the norm	<i>Expected external effect</i> by different actors, <i>measured effect</i> is not yet known
2.	<i>Badger</i>	<b>Social norm:</b> behaviour towards the Police and reporting a crime + <b>framing:</b> Police as the friends of badger + <b>priming:</b> reminding children of those values	<i>Expected external effect</i> by the involved actors and an <i>experienced effect</i> of Police officers in the neighbourhood
3.	<i>Beijerlandselaan and Afrikanerwijk</i>	<b>Idea of nudging:</b> deliberately changing the surroundings in order to change behaviour	<i>Expected external effect</i> at the Beijerlandselaan because of the advice of behaviour experts, <i>experienced effect</i> by involved actors when walking around in the Afrikanerwijk and <i>measured effect</i> at the Afrikanerwijk in the safety index
4.	<i>Early birds</i>	<b>Framing:</b> changing the message of the Police officers + <b>changing the default</b> of the age of the children the Police is talking to the parents	<i>Experienced external effect</i> by professionals working in the neighbourhood
5.	<i>#Zuidvertelt and other stories</i>	<b>Framing:</b> consciously choosing certain words, telling a particular story and creating a certain picture of Rotterdam Zuid	<i>Experienced external effect:</i> people are having a more positive picture of Rotterdam Zuid. <i>Internal experienced effect:</i> positive reactions of involved actors and a better shared understanding of the goal and of each other in the network
6.	<i>De-anonymising the neighbourhood</i>	<b>Social norm:</b> awareness of the bad social norm in some areas and actors trying to change this + <b>framing:</b> consciously creating a certain picture and message that crime does not pay off	<i>Experienced external effect</i> by actors in the neighbourhood witnessing a changing norm and a <i>measured effect</i> in the safety index and the amount of reports from the area itself

7.	<i>Money Transfer Organizations</i>	<b>Simplification:</b> simplified picture of the MTO's at Rotterdam Zuid + <b>framing:</b> consciously choosing certain images, inviting certain people and telling a particular story when talking to colleagues and others	<i>Measured external effect</i> of the confiscated objects and the amount of closed MTO's. <i>Expected external effect</i> of a decrease of illegal money at Rotterdam Zuid. <i>Experienced internal effect</i> of the involvement of the Nederlandse Bank and the support of network actors for this approach (commitment of others)
8.	<i>Illegal gambling is not a game</i>	<b>Social norm:</b> calling on the behaviour of others and describing a social norm + <b>framing:</b> putting the message in such a way it would get people thinking instead of telling them it is illegal	<i>Measured external effect:</i> the amount of views of the video and the increase in interest the Foundation of Anonymous Gambling got. <i>Experienced external effect</i> of professionals in the area
9.	<i>Donald Duck</i>	<b>Increase in ease and convenience:</b> making it easier and nicer for kids to read Dutch	<i>Experienced external effect</i> by teachers at the school and a <i>measured external effect</i> in the language tests
10.	<i>Vlog: bad and breakfast</i>	<b>Framing:</b> consciously changing certain words and images to tell a particular story + <b>social norm:</b> showing what is 'normal' behaviour + <b>simplification:</b> simplified information	<i>Experienced external effect</i> by Police officers and other professionals working in the area. <i>Measured external effect:</i> the amount of views. <i>Experienced internal effect:</i> increase in shared picture and understanding within the network
11.	<i>No gun in my neighbourhood</i>	<b>Social norm:</b> actors are explicitly calling on the behaviour of others and naming a social norm	<i>Experienced external effect</i> because it just started, possible effect is put in measurable indicators
12.	<i>Agora pages</i>	<b>Simplification:</b> simplified options, steps and pictures of complex processes/practices + <b>framing:</b> consciously choosing particular words, images and people to tell a certain story + <b>increase in ease and convenience:</b> easier, nicer and less time consuming to read the pages	<i>Measured internal effect:</i> number of visitors, <i>experienced internal effect:</i> reactions of colleagues. Both having an effect on the commitment to the process, the shared understanding and intermediate outcomes

Table 15: overview of all interventions, the used nudges and the effects

## 5.1 Network effectiveness – connecting with the rhythm of the city

Actors of the Hartcore network argued that alone they cannot really deal with the problems concerning undermining crime. In fact, they need one another to combine their capacities, expertise and information in order to be able to organize sustainable changes. Most of them indeed argued that the majority of the effects of the network cannot be achieved individually. The findings of this study confirm the difficulty of measuring network outcomes (Provan & Kenis, 2008), especially when it comes to the influence of nudging. This is due to a couple of reasons. Firstly, there is a lack of causality between causes and effects, which is one of the characteristics of a complex problem. Secondly, effects are hard to measure because they cannot be isolated from one another, and the approach of Rotterdam Zuid is a mix of multiple interventions intertwined with other programs and initiatives. Lastly, nudging is a quite new technique to use in such interventions and ways of measuring have not been extensively developed. Simple, concrete nudges can easily be measured, for example when comparing the amount of trash which is thrown away before the footsteps were painted on the pavement to the amount afterwards. However, this is not the case for measuring the changing social norm within a neighbourhood for example. For some of the used nudges in Rotterdam Zuid, an effect could be determined. As shown in table 15, this is mainly in terms of experiences of involved actors. In terms of bigger effects, the safety index which is made by the Municipality of Rotterdam is used to measure effect, though this is the effect of all interventions. Single effects of nudges can only be measured in terms of direct effects like the amount of views (video about illegal gambling and the vlog), closed buildings (MTO's) and visitors of a website (Agora pages). Those simple measurements are used to make the expected effect more likely. This is done using experiences of involved actors as well, Police officers working in the neighbourhoods, the city marine who has many connections in the area and the way in which the area is framed by others. These are actual effects though hard to quantify since it is impossible to isolate them from other developments in the area.

In the two cases in which nudging is used explicitly (Beijerlandselaan, Afrikanerwijk and the campaign against gun violence and possession of weapons) the use of nudging seems to help actors to legitimise the intervention (because of the reports of experts for example). Most interventions seem to create challenges concerning the accountability of interventions and policies (see among others the essay about 'Rijker Verantwoorden', (Scherpenisse, forthcoming)). The three different kinds of reporting effects (expected, experienced and measured) are combined by actors. Although it differs per actor how comfortable they feel with reporting effects in different ways than hard numbers, the different ways of reporting effects seem to work for this approach.

## 5.2 Network collaboration – understanding network partners better

The other aspect which is considered in this study is the effect of nudging on the collaboration within the network. All respondents seem to be aware of the need to collaborate, not only with the network partners but with others as well. Within this study, this is all regarded as the internal aspect: the collaboration of actors fighting undermining crime. Following Ansel and Gash (2007), a couple of indicators are used to say something about the effects of nudging on the collaboration. Respondents only mentioned three of them: 'commitment to the process', 'shared understanding' and 'intermediate outcomes'.

Especially the Agora pages are aimed at increasing the collaboration in the network. Here the nudges simplification, framing and increase in ease and convenience are used. The direct effect is measured by the number of visitors of the pages. The actual effect on the collaboration however is mainly experienced by involved actors. They mention the increase of shared understanding here because others get a better idea of the interventions and the reasons to organize it this way. This has a positive effect again on the commitment of others. Concerning the commitment to the process, most of the respondents mention

that they believe the collaboration in the Hartcore network is the best way to fight undermining crime. On a more detailed level however, most actors have a different view on processes, responsibilities and ownership. The nudging in the Agora-pages seems to have a positive effect on the commitment to the process since actors understand more about the ways of working of others. Creating the pages as well as collecting the stories for #Zuidvertelt creates some intermediate outcomes, which is another indicator of collaboration (Ansell & Gash, 2007), since it is a way to celebrate small wins.

The internal effect of nudging is mainly witnessed in an increase in the shared understanding of network actors: to a certain extent, actors do have a shared understanding, especially when it comes to the bigger goal of the collaboration. There is a shared feeling of urgency now as well. On the level of implementation and processes, there is not really a shared understanding. Per intervention/project the necessary actors do find each other, which increases the shared understanding of that intervention. In the search for a shared understanding of all the phases of the approach, many tensions are revealed. By framing certain stories, simplifying complex issues and using the social norm, the shared understanding of the goal, problems and processes seems to increase.

Next to the effect of nudging on the collaboration within the network, actors mention that the better they collaborate with others, the more effective they are as a network. In line with the theory of Ansell and Gash (2007), actors mention the increase of shared understanding of processes, goals and interventions as well as the commitment to the process. Intermediate outcomes were described as valuable for getting to know others and introducing new actors to the network. This was indirectly linked to an increase in the collaboration. Concerning the other two indicators mentioned by Ansell and Gash (2007) – face-to-face dialogue and trust-building – the findings of this study do not clearly show an increase because of the use of nudging.

## 6 Nudging and complex policy problems

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*“I do not know what the effect is in the long run, but I do know for sure that not doing it is not good” (R14)*

### 6.1 Conclusion

This research investigated the effects of the use of behavioural insights for dealing complex policy problems, in this case the use of nudging in fighting undermining crime in Rotterdam Zuid in the Netherlands. It aimed to add to the formulation of theory on the use of behavioural insights in the public sector, in particular to the use of nudging in fighting undermining crime. As a case study, the network fighting undermining crime in the Dutch city of Rotterdam was chosen. Building on theory from public administration, namely network governance and complexity theory, and theory from behavioural science, nudging, a conceptual model was proposed which concerned the effects of the use of behavioural insights for dealing with complex policy problems. The model showed the effectiveness of the network as well as the collaboration within the network.

Before the research question could be answered, it was determined whether the network actors use nudging at all and, if so, what their experience is with the use of this in dealing with undermining crime as a complex problem. The findings of this study show that all respondents are aware of the complexity of the problem: they describe the inability to deal with the problem of undermining crime alone. They are aware of the need to collaborate and of the connectiveness of the problem of undermining crime with other societal problems. Moreover, they mention the sometimes diverting perceptions of others which adds to the complexity of the problem and they experience the complexity in the difficulty of measuring effects. They use the idea of complexity to argue for a different approach, instead of the rational one which they argue and experience is not enough. Moreover, this study shows that nudging is actually used by actors in order to fight undermining crime in Rotterdam Zuid. As described before, this happens both implicitly and explicitly. The ‘different way of thinking and influencing’ of most respondents is often linked to the idea of nudging (implicit nudging). However, respondents often do not label it as such.

Regarding the research question, this study concludes that nudging indeed has an effect on fighting undermining crime. According to most respondents, the ‘different’ kind of interventions do have an effect. Sometimes this is a measured effect, sometimes it is experienced or expected. Because it does not always fit the accountability mechanisms or is not possible to isolate, does not mean there is no effect.

The influence of nudging on the effectiveness of the network fighting undermining crime is found at eleven out of twelve interventions. Usually, respondents describe that it was easier to experience the effect than to measure it (sometimes it was both experienced and measured). It makes sense that effects are easier experienced than measured, because it is hard to find a direct relation between the use of nudging and its effect. This is because of two reasons: first because complex problems are characterized by the uncertainty between causes and effects (Van Bueren et al., 2003) and non-linearity; the “lack of a direct or proportional relationship between the individual inputs and the aggregation of those inputs in the overall dynamics of the system” (Gerrits, 2012, p. 83). Secondly, the effect is often witnessed in bigger changes of the problem; the isolation of interventions and effects is impossible.

Concerning the effects of nudging on the collaboration between actors in the network, less nudges were found which aimed at improving this. Especially the nudges of simplification and framing were described by respondents as positively influencing the collaboration within the network. Particular the commitment to the process and shared understanding seemed to increase because of the use of nudging. Interestingly, this shows the possibility to nudge not only others but also oneself while being aware of it.

The influence of nudging does not seem to depend on the explicit use of it; the nudges which are implicitly used have an effect as well. Respondents often referred to the idea of nudging (designing a choice architecture) while using a different 'definition' of nudging: some thought of it as just influencing, others as something close to manipulation. Therefore, more interventions were labelled as nudging by the researcher than by the respondents themselves.

In conclusion, the findings of this study suggest that the use of behavioural insights positively affects dealing with complex policy problems, in this case the use of nudging in fighting undermining crime. Because of the different way of thinking nudging contains, actors create different kinds of interventions in which behavioural insights are considered. The use of nudging has a positive effect on both the network effectiveness and on the collaboration within the network.

## 6.2 Broader implications

Concerning the broader implications of this study, behavioural insights seem to offer an additional perspective when dealing with complex policy problems. The use of behavioural insights is often argued as a fourth way of policy making, next to prohibition, financial incentives and warnings. This is in line with the recent 'Behavioural Insights' movement witnessed in the Netherlands and other countries as well, of a variety of Behavioural Insights Networks, Teams or Groups (Feitsma, 2018; Halpern, 2015). It shows the increase of the application of behavioural insights in policy, implementation and communication. However, the findings of this study suggest something different than this fourth, separate way of policy making. Actors fighting undermining crime in Rotterdam did not explicitly decide to use behavioural insights in order to have more impact. Instead, they used the idea, sometimes even without being aware of it themselves, within their broader approach. In fact, nudging was most often implicitly used and some actors were still sceptical about the use of nudging as such. And yet, they still used these insights to improve their interventions. In this sense, nudging was used as one of the instruments of policy making within a mix of others.

Based on this study's findings, behavioural insights should not be seen as a fourth way of policy making and implementation, but rather as something which should be implemented in the regular view on policy making and interventions, hence as part of other instruments. Because all policy is aiming at changing, influencing or regulating people's behaviour, it should always consider the way humans behave and make decisions. So instead of creating separate units for applying behavioural insights, perhaps using this should just be part of good governance. Like communication is part of almost every policy nowadays and the importance of a good communication strategy is acknowledged by more and more people, considering behavioural insights should be part of policy as well. As in the studied case, nudging is not only something people choose to do in a certain intervention, but instead human behaviour is something to always consider. In line with this conclusion, the study shows the need to include behavioural insights in policy making. This should not only be done indirectly – like in this case happened a lot – however directly as well, because when techniques like nudging are used by governmental actors, the limitations and consequences of it should be considered.

This study stresses the limits of the use of nudging which should be considered by governmental actors in particular. The line between nudging and manipulation is not clear, but instead a grey area. Nudging can be a useful and appropriate tool for governmental actors when the choice architecture is changed in order to stimulate behaviour which is the opposite of forbidden behaviour. If this is not the case, normative questions should be asked before implementing such tools. Transparency and a proper public debate can prevent policy from being misdoubted as manipulation. Moreover, more research on the effectiveness of the use of nudging will improve the legitimacy of it as well.

It is important to state that this study is not arguing for the introduction of nudging as the new and only way of policy making. As Feitsma (2018) and others properly argue, the exclusive use of psychological insights holds the danger of a 'psychocracy' or technocracy in which decisions are only made for citizens rather than with citizens (Feitsma, 2018, p. 3). As is argued above, nudging should not be used as a fourth, separate way of policy making. Instead, behavioural insights should be one of multiple perspectives used in policy making. Policy makers are rather co-choice architects instead of choice architects because they often collaborate with others in designing a context (Feitsma, 2016). Complexity should not be reduced by the use of a single perspective but should be acknowledged by multiple perspectives which in fact show the complexity. Moreover, because of the uniqueness of every complex problem, a different combination of perspectives is suitable, in which behavioural insights can be used differently. The added value of nudging is not in the single use of it, however it is in the added perspective it brings to the table.

### 6.3 Discussion

As described before, this study can be regarded as a contribution to the merging of two big academic fields: public administration and behavioural science. By studying the effects of the use of behavioural insights for dealing with complex policy problems, in this case the use of nudging in fighting undermining crime in Rotterdam Zuid in The Netherlands, this in-depth study gives new insights which can be used both on a practical level as well as on an academic one. The chosen research method has advantages and limitations as well. The presented findings have to be interpreted in light of some methodological limitations.

Firstly, the transferability or external validity of the results of this study is complex. As described in chapter 3, the transferability of this study is low because of the use of a single case study. However, for this study this is not very problematic since the goal is to explore 'how and why of the contemporary phenomena of nudging, complex policy problems, undermining crime and networks within a real-life context' (Gale, 2015, p. 87), instead of formulating transferable results. Because of the in-depth study of the network fighting undermining crime in Rotterdam Zuid, the results and conclusion could be described in detail. This study should not be read as generalizable, however as an interesting case from which new insights and lessons can be learned. Because complex problems, especially the one of undermining crime, are very context dependent, the results and conclusions are mainly case-specific. Whether those insights are interesting for other networks fighting undermining crime, or other networks dealing with other complex problems, depends on comparable elements or challenges with this case. In order to make this study a bit more transferable, the case itself as well as the examples mentioned by the respondents are described as detailed as possible.

A second methodological shortcoming is the fairness of different views and perspectives on the topic (Guba & Lincoln, 1994). Concerning the network in Rotterdam Zuid, the different views and perspectives are ensured by interviewing involved actors from all organizations and different levels. However, on a broader level, different views on the use of nudging in dealing with complex problems by public actors are not fairly represented in this study. This is partly explainable because this was not involved in the research question, however the current debate about the use of nudging influences this topic as well. A more critical perspective on the use of nudging by public actors might influence the conclusion of this study.

Furthermore, a limitation of this study is the way in which data are collected about the influence of nudging. Network effectiveness is determined by the described effectiveness of respondents and is not determined by the researcher itself. Respondents might be too optimistic about the results and might give influences the benefit of the doubt. Concerning the collaboration in the network, it is more about the perception of actors which makes it possible to get a quite accurate picture of the actual collaboration.



Despite those limitations, this study can be regarded as an exemplifying case of the use of behavioural insights in dealing with complex policy problems, in this case the use of nudging in fighting undermining crime. In line with the findings and conclusions of this study, some recommendations can be formulated, both for science as well as for practice. Both are described below.

#### 6.4 Recommendations for science – future research

This study offers four suggestions for future research. Firstly, more cases could be studied in which actors are trying to deal with complex policy problems and using behavioural insights as well. When researching the possible effect in different cases in other policy fields, the findings of this study can be supported or adjusted. Within this case, some actors were already familiar with nudging which made it more likely to find elements of nudging in the approach. When similar results are found in different policy fields, firmer conclusions can be drawn on the effect of nudging, and behavioural insights on dealing with complex policy problems.

Secondly, more research should be done over a longer period of time on the effects of the use of behavioural insights, among others nudging. By extending the research period, interventions can be measured and changes can be witnessed when making use of nudging. This would allow the researcher to do more observations and compare the starting conditions with the ones after the nudge is implemented. This would make it possible to study short time effects. In order to study the long-term effects of the use of nudging, indicators should be formulated which consider a broader effect than only the quantified one. One should not try to isolate the effect of just one used nudge, since it will always be part of a mix of instruments.

Thirdly and in line with the previous recommendation, future research should be done about the right mix of instruments when dealing with complex policy problems. As is argued before, the exclusive use of behavioural insights holds the danger of dealing with complex problems by using a single perspective. In order to be able to truly deal with those problems, a right mix of instruments should be used. Future studies can provide new insights in this mix and the right balance between different perspectives.

Lastly, the concept of undermining crime should be studied more in depth. This form of organized crime is distinguished in the Netherlands a lot lately and recognized as a different form of organized crime. The term ‘undermining crime’ has not been mentioned as such in English a lot. It would be interesting to study how this form of organized crime is defined and perceived in other countries: whether it is just regarded as organized crime or defined differently. This might show as well the differences regarding this problem between counties.

#### 6.5 Recommendations for practice – how to be rational about irrationality

To conclude this study, some lessons can be learned concerning practical insights for Rotterdam Zuid and similar networks fighting undermining crime and dealing with complex policy problems. For all actors the question is how to be rational about irrationality. When taking human behaviour into account, a rational goal-mean approach is inappropriate. This study shows that the use of nudging, or more broadly, the use of behavioural insights is positively affecting the ability of actors to deal with complex policy problems.

##### *From implicit to explicit use of nudging*

The main lesson concerns one of the main findings of this study: nudging is, though implicitly, often used by actors dealing with undermining crime in Rotterdam Zuid. Although implicit nudging seems to have a similar effect as explicit used nudges, the awareness of the use of it has multiple advantages. It will help actors to explain interventions more easily, it can be used as an argument when held accountable and it might make the approach more consistent. Moreover, this study suggests that the use of nudging positively affects dealing with complex policy problems. When being aware of the usage of it, it can be



used in a more precise, suitable way and can be implemented from the start of interventions. Especially when used by public actors, it is important actors are aware of the consequences as well as the limitations of the use of it. But how to deal rationally with the irrational aspects of human behaviour? Three lessons are taken from this study:

- When using nudging explicitly, it will provide new words and descriptions of practices which are already taking place. The language which is provided by the theory of nudging and behavioural science in general helps to explain certain practices, ideas and effects. This is important for the accountability of the interventions and for getting more people involved in this approach. Using words like social norm, default option and choice architecture can explain phenomena which otherwise can be hard to explain. Within the Hartcore network in Rotterdam, actors started to experience this after explaining the use of nudging to them. This can be done to a greater extent and with more nudges.
- When using the word nudging, people thought of very different concepts. Simple examples of nudges like the fly in the toilet at Schiphol Airport, the default option of newspapers subscriptions and the foot prints to the garbage can, can be very helpful for understanding the concept and the possible use of it. When policy makers want to make the implicit use of nudging more explicit (to their colleagues and others), this can be done by using the examples given in this study and others as well. It illustrates how those theoretical ideas can be translated to a concrete and even complex situation.
- In line with the use of examples, the last lesson is the creative translation of the theoretical concepts of behavioural science and complexity theory to one's own practice. Because in complex policy problems no blueprint can be used but interventions and policy should fit the specific situation, nudging should be adjusted to the characteristics of reality. This means that nudges cannot just be copied to a different situation while expecting a similar effect when the context is different. The right mix of instruments depends on the characteristics of the context. In line with the way actors are working in this network, there is a bit of trial and error in every unique case. No iceberg is the same and heating the water will have different effects at different places.



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## 8 Appendix A – respondents, documents and observations

Reference	Source	Date
<b>Interviews</b>		
R1	Interview involved actor	18 <sup>th</sup> of May 2018
R2	Interview involved actor	30 <sup>th</sup> of May 2018
R3	Interview expert in nudging + involved actor	25 <sup>th</sup> of May 2018
R4	Interview involved actor	6 <sup>th</sup> of June 2018
R5	Interview involved actor	19 <sup>th</sup> of June 2018
R6	Interview involved actor	21 <sup>st</sup> of June 2018
R7	Interview involved actor	28 <sup>th</sup> of May 2018
R8	Interview involved actor	25 <sup>th</sup> of May 2018
R9	Interview involved actor	25 <sup>th</sup> of May 2018
R10	Interview involved actor	28 <sup>th</sup> of May 2018
R11	Interview involved actor	6 <sup>th</sup> of May 2018
R12	Interview involved actor	18 <sup>th</sup> of May 2018
R13	Interview involved actor	6 <sup>th</sup> of May 2018
R14	Interview involved actor	6 <sup>th</sup> of May 2018
R15	Interview involved actor	30 <sup>th</sup> of May 2018
<b>Documents</b>		
D1	Verhaal Noordereiland	
D2	Factsheet Verdachte Transacties	
D3	Overzicht Aanpak Ondernijning Zuid	
D4	Agora Dubieuze Verhuurbemiddelaars	
D5	Fieldlab MTO's	
D6	Verhalen #Zuidvertelt	
D7	Infographic Verborgten Ruimte	
D8	Leerdossier Malafide Verhuurbemiddelaars	
D9	Huurauto in een verkeerscontrole	
D10	Leerdossier K	
D11	Conceptbeschrijving Partneragora 0.1	
D12	Export deel AGORA SGB0 Ondernijning	
D13	Bad & Breakfast vlog	
<b>Observations</b>		
O1	Meeting 'Rijker Verantwoorden'	15 <sup>th</sup> of March 2018
O2	Meeting 'Rijker Verantwoorden'	26 <sup>th</sup> of March 2018
O3	Meeting 'Rijker Verantwoorden'	4 <sup>th</sup> of April 2018
O4	Meeting 'Rijker Verantwoorden'	16 <sup>th</sup> of May 2018

## 9 Appendix B – interview topic list

This topic list is used during the interviews in order to have a similar structure during the conversations. Not all topics were of similar relevance for all respondents. The topic list below is the most extended one. Because all respondents were Dutch, the interviews were done in Dutch and so is the topic list.

<i>Ondermijnende criminaliteit: informele netwerken van criminelen die maatschappelijke structuren of het vertrouwen daarin schaden en daarmee het gezag (politie en bestuur) ondermijnen</i>		<i>Nudging: aspecten van keuze architectuur (context waar mensen tot gedrag komen) die menselijk gedrag veranderen op een voorspelbare manier zonder daarbij opties te verbieden of significant financiële prikkels te veranderen</i>	
Ondermijning		Hoe betrokken bij de aanpak?	
		Eigen werk/rol?	
		Definitie ondermijning?	
Aanpak Rotterdam		Integrale aanpak?	
		Unieke aanpak?	
		Ervaring	
Interventies		Voorbeelden noemen?	
		Standaard soort?	
		Waarom? Achterliggende gedachte	
Nudging		Bekend? Beschrijven → eigen definitie geven	
Nudging in aanpak		Bewust toepassen?	
		- Waar? Hoe?	
		Gebruik van basis idee?	
		- Waarom? Bijdragen aan wat?	
Effecten		Verwacht?	
		Gemerkt?	
		- veranderingen?	
		Gemeten?	
		Ook negatief?	

Intern (netwerk + eigen organisatie)	Collega's betrekken Verantwoorden (voorbeelden) Samenwerken binnen netwerk
Samenwerking	Hoe verloopt die?
Nudging	Interne nudging? (Agora, praatplaat) Idee van nudging om samenwerking te verbeteren? Voor intern of in netwerk?
Veranderingen in samenwerking	Contact in netwerk/organisatie Vertrouwen: netwerk en intern Geloof ik het proces? Zelf, anderen? Gedeelde definitie van problemen/oplossingen? Tussen resultaten? (zoals half maart)
Toevoegingen?	

## 10 Appendix C – coding scheme

Name	Files	References
External		11 13
Expected		7 9
Experienced		3 3
Appraisal of effect		5 12
Experienced by someone known by the		4 5
Negative		3 4
Measured		5 7
Data		4 6
Report		2 2
Internal		4 4
Commitment to proces		1 1
Believe in process		8 22
Feeling of ownership		1 1
Shared responsibility		2 3
Up-frond willingness		4 5
Face-to-face		5 6
Intermediate outcomes		3 3
For internal organisation		0 0
For network partners		2 2
Meetings to celebrate results		0 0
Shared Understanding		8 8
Goal, purpose, mission		6 10
Problem definition		8 13
Process + new chances		10 15
Trust building		3 4
Absence of opportunistic behaviour		0 0
Benefit of the doubt		0 0
Good intentions of others		0 0
Keeping others in mind		1 1
Others living up to agreements		0 0

<input type="radio"/> Nudging		11	23
<input type="radio"/> Changing surroundings		9	19
<input type="radio"/> Default		1	1
<input type="radio"/> Changing		1	1
<input type="radio"/> Discussing influence		0	0
<input type="radio"/> Implementing		0	0
<input type="radio"/> Different way of thinking		15	49
<input type="radio"/> Explicit use of nudging		3	3
<input type="radio"/> Feedback		0	0
<input type="radio"/> Graphs showing consequences		0	0
<input type="radio"/> System which gives feedback		0	0
<input type="radio"/> Warnings risks, benefits		1	1
<input type="radio"/> Framing		16	50
<input type="radio"/> Increases in ease and convenience		0	0
<input type="radio"/> Cheaper		0	0
<input type="radio"/> Easier		4	6
<input type="radio"/> Less time-consuming		1	1
<input type="radio"/> Nicer		9	17
<input type="radio"/> Priming		0	0
<input type="radio"/> to prevent		0	0
<input type="radio"/> to stimulate		0	0
<input type="radio"/> Reminders		1	1
<input type="radio"/> Simplification		0	0
<input type="radio"/> Simplified information		20	31
<input type="radio"/> Simplified options		5	9
<input type="radio"/> Simplified picture		6	6
<input type="radio"/> Simplified regulations		1	1
<input type="radio"/> Social norms		1	1
<input type="radio"/> Behaviour of others		2	3
<input type="radio"/> Social norms, rules		9	24