Safety in the future

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Carlijn Naber

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The weekend edition of the NRC Handelsblad hosts the column 'Jong!' in which adolescents talk about themselves, their world and their social lives. This exchange results in open and honest portraits of people in that phase of life where invincibility and insecurity coexist. During my last years of high school, I became more and more independent, forsaking existing friend groups. I moved carefree throughout Tilburg at different times and in various places, often in the company of others, but just as frequently alone. After all, I could take care of myself just fine. The more peaceful, the better would have been my motto. Nothing could happen to me if there was no one around.
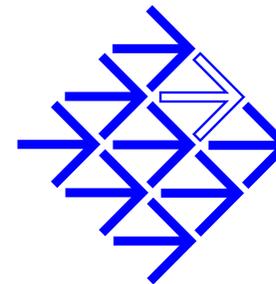
After I moved to Amsterdam my definition of safety changed. I embraced the bustling energy, the murmur of voices day and night, the physical proximity of others as I navigated the city by bike, on foot or when I boarded public transit. I later moved back to Tilburg and found myself wondering why I initially felt so vulnerable. At first, I associated that vulnerability with the fact that I was starting something new, only to realize months later, that I missed the comforting and protective feeling of having people around me all the time.

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Everyone immediately has certain associations with the concept of safety and security. Often influenced by memories, emotions and the feeling of relief after experiencing unrest. We rarely take time to reflect on the joy of existing in an environment in which we are free to make our own choices.

Safety and security are in the spotlight. It not only defines the daily context of politicians, policy makers and professionals; it is also a subject that colors our cultural dialogue and about which everyone has an opinion.

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The Dutch language only has one word to describe 'being safe'; the word 'veiligheid'. According to the dictionary it means being 'free from danger', and being 'protected from danger'. The English language makes this distinction by using the words safety and security. The distinction between these terms mainly lies in the underlying intention. Being free from danger means free from accidental, non-intentional actions, while being protected from danger means avoiding intentional actions.

Due to the social significance of safety as the basis of this publication, we use the term safety in a dual way. Being free and being protected against danger are seen as two sides of the same concept.

∗ Only available in Dutch. Following references that are only available in Dutch, will be marked with an ∗.

Introduction

Safety is an important aspect of our society. In the past, our instinct would usually help us to detect imminent dangers. Threats used to be tangible and our experience helped us processing them. Knowledge about what was safe was passed on from generation to generation. Nowadays, safety is created through the interactions of people with their environment. Neighbourhood watch groups for instance, use WhatsApp to exchange information. By detecting and exchanging information together and taking joint actions, neighbourhoods are made safer. Rather than as a noun, we can look at safety as a verb – something we do. This fits within social-constructivism, a theoretical perspective that argues that people themselves give meaning and structure to social reality. The creation of safety thus involves people interacting with their environment. This provides us with an umbrella we can use to examine a complex phenomenon like safety.

However, safety does not exist in a vacuum. It is influenced by the dynamics of several developments in society. *The Dutch National Research Agenda* (Ministry of Education, Culture and Science, 2015∗) characterizes Dutch society as strong, secure and open. Within this social climate, however, various changes are visible. Due to digitization, national borders do not stop safety risks and it is unclear where new threats will appear and who will be our enemies. There are many interconnections between different systems which results in vulnerability and precarious situations. For example, a prolonged power failure in January 2017 upset the daily routine in a large section of the Randstad in the Netherlands. Geopolitical issues also play a role in a globalized world. Through the international trade of products, resources and knowledge, the business community now depends heavily on other economies. Many Dutch people use a variety of different media to contact people elsewhere in the world. The protection of this data is a subject of discussion because a large amount is collected and stored. The question as to who gets access to that information cannot be answered unequivocally. Finding the right balance between safety and openness in our society is a challenge.

The growing interaction between the physical and digital domains also affects safety in the future. Threats are hard to recognize due to the role that technology plays within our society. In an interview, physicist Stephen Hawking talks about the danger of artificial intelligence. He emphasizes the need to identify risks more quickly in order to enable us to adequately respond and prevent this advanced technology from replacing human beings (Whipple, 2017).

In our network society, people are both spectators and participants. New vulnerabilities and invisible risks emerge when we put our trust in systems whose operations we do not understand. The evergrowing impact of the digital world on our physical environment makes governments, businesses and individual people feel less and less in control. Newly introduced products are not yet properly regulated. 3D-printers for instance can print useful tools, but are also able to produce actual weapons. The consequences of sharing information and resources on the scale we do are difficult to comprehend. In addition, networks – due to hyper connectivity – transform rapidly,

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making things even less transparent. Altogether, the interaction between the physical and digital domains make safety issues more and more complex.

The developments outlined above produce disruptive innovations, fading boundaries, fast-growing networks of smart and communicating technologies and – through the interaction between domains – a high level of uncertainty. As a result, the interpretation of the concept of safety keeps shifting all the time and it therefore is a constant presence on policy, business and innovation agendas. Since new situations produce new uncertainty and vulnerability, there are no prior experiences to rely on. Safety issues are complex and therefore an interdisciplinary approach is needed.

PAST, PRESENT, FUTURE
In the last decade, there has been a shift in how we perceive safety. The "Textbooks Security" (Muller, 2004; Muller, 2013*) provide an overview of studies into the content, organization and policy surrounding safety and security in the Netherlands. They show that, in a period of eight years, the concept of safety has been given a different interpretation. If we compare the two editions, there are changes in the sections that discuss safety as a concept. The chapter 'Safety after September 11, 2001', has been replaced from the more recent edition and instead there is more attention on 'forms of safety'. Safety is described from a variety of perspectives and digital safety makes a notable first entrance. In addition, the chapters 'Criminality in a country' and 'Ethics and security' are also included in the concept of safety and security in the second version.

Ideas and behavior of people are subject to change. In a foresight study, it is inte-resting to examine these changes from a social and societal perspective. Knowledge of social factors provide insight into how individuals and groups of people behave. The interaction between individuals and their environment allows us to analyze the changes and developments from a human perspective. Global changes indicate future issues regarding safety to which people, businesses and governments should anticipate in the society of the future.

Anticipating changes is only possible if we have a clear idea of what the future holds in store for us. A foresight study renders possible futures: images of what could happen. It is important to understand that the past, present and future are inseparably connected (Van der Duin, 2012). The Netherlands Study Centre for Technology Trends (STT) focuses on exploring the future and, in particular, the crossroads between technological and societal developments.

MAIN QUESTION
In this foresight study involving safety, we look for future images of the changing perception and construction of safety. The focus is on the influence of technological developments in the society of the future. In the following chapters, we explain that it is essential to start with a clear idea of the perception of safety in society. Human behavior is of great importance for this perception, but is also very subjective and dependent on the cultural context in which people exist. With those insights, we can find out which technological developments may affect the way people act in interaction with their environment. This will help to answer the question how to construct safety in a society that changes all the time as a result of technological developments. Those technological changes themselves also create new opportunities and vulnerabilities. By combining the knowledge about the interaction between people and environment, societal changes and technological developments, we will explore how technology can be used to develop desirable applications that make society safer.

The main question of this foresight study is:

'How is safety constructed in the society of the future as a result of technological developments?'

STRUCTURE FORESIGHT STUDY
The brief outline of the main question on the previous page shows the gradual approacht of this foresight study.
The central question can be divided into four sub-questions. These four (A/B/C/D) sub-questions are answered in three publications. Below, a schematic overview of the structure of this foresight study is presented.

01

Constructing safety by society

A: Which societal factors play a role in the construction of safety?

02

Technological developments in the society of the future

B: What does the future society look like as a result of digitization and globalization?

C: What new opportu-nities and vulnerabil-ities may emerge as a result of technological developments?

03

From future images to applications

D: How does technology affect the way safety is constructed in the future?

06   07

The three publications are organized as follows:

01. Constructing safety by society
A positive approach to safety leads to a theoretical framework that is further examined based on a literature study. The aim of the theoretical framework is to explain how safety is constructed. People create and experience safety by interacting with other people in their environment. From this perspective, we look at the societal factors that play a role in the con-struction of safety. We search for a com-mon denominator in people's feelings. The first publication focuses on the following question: *A: 'Which societal factors play a role in the construction of safety?'.*

02. Technological developments in the society of the future
In the second publication, we look at the society of the future and at possible technological developments. A trend analysis is used to outline social changes, starting from the megatrends globali-zation and digitization. We describe the pattern shifts that occur in people's daily lives as a result of these megatrends. Defining the societal importance of safety helps us to see the social impact of the megatrends in society. How can we prepare for a future society that is subject to digitization and globalization?

Based on this trend analysis we will be able to deduce pattern shifts as a result of important developments. To test and broa-den these pattern shifts, an online Delphi study will be carried out in the first half of 2018. The aim of that type of study is to gather the opinions of a large amount of experts online and provide anonymous feedback in a number of rounds. This will al-low us to analyze where there is consensus and where there is none, after which we will be able to cluster different ideas and ar-guments about the social impact of tech-nological developments in the future. The Delphi study will be carried out among the over sixty members of the General Board of STT and experts involved in the area of safety and security. The study will involve about a hundred people from science, businesses, government and society who have knowledge about the opportunities and vulnerabilities of future technological developments. The ultimate goal is to work towards challenges related to safety in the future. The second publication focuses on the following questions: *B: 'What does the future society look like as a result of digitization and globalization?'* and *C: 'What new opportunities and vul-nerabilities may emerge as a result of technological developments?'.*

03. From future images to applications
In the third publication, the future images about constructing safety in the society of the future are outlined.

The aim is to develop future images that are meant to succeed each other. By stretching each new future image just a little further than the former one, the consequences for everyday life will surface. In a sense, each scenario creates a precedent for the next situation. Inclu-ding the future images in the publication like this allows the reader to think about situations they consider safe or unsafe. To clarify the perception of safety in the society of the future, the future images have to contain practical examples. That is why some new professions and cour-ses in relation to safety will appear in the scenarios. In the third (and final) publi-cation, the focus is on the question: *D: 'How does technology affect the way safety is constructed in the future?'.*

OBJECTIVE AND DEFINITION

This foresight study results in various future images about the changing construction of safety in the society of the future. With these images, we want to encourage politicians, policy-makers and professionals to think actively about opportunities and vulnerabilities of future applications of technology in relation to safety. The aim of this foresight study is to ensure that technology contributes to safety in the society of the future.
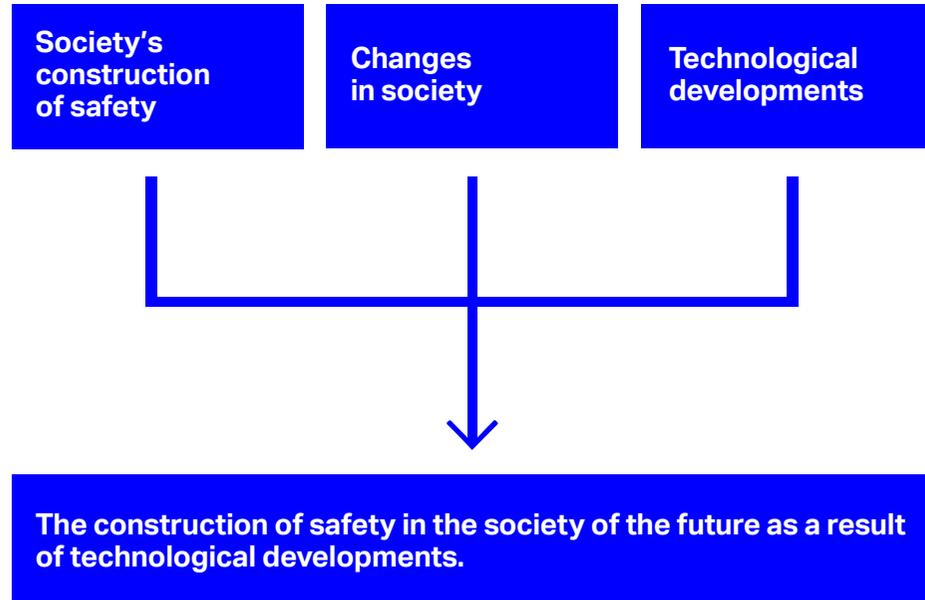

Society's construction of safety

Changes in society

Technological developments

The construction of safety in the society of the future as a result of technological developments.

Figure 1. Schematic explanation of the objective of this foresight study.

Safety is a complex phenomenon with various levels of abstraction that can be influenced by individuals, the business com-munity and government. At the same time, there are also responsibilities for each of them. This foresight study focuses on the societal importance of safety – in other words the interpretation of safety resulting from norms and values within an open society.

This is in line with the 'safety interest social and political stability', which *The National Risk Profile* (Dutch National Institute for Public Health and the Environment [RIVM], 2016*) defines as: "The undisturbed continued existence of a social climate in which individuals can function undisturbed and groups of people can coexist within the accomplishments of the Dutch democratic society and its shared values" (p. 09). Safety interests interact with each other. When one of them comes under pressure, it may affect the political and social stability. A serious flood touches directly on the physical safety and economic security, a possible result being the evacuation of a large area that will disturb people's daily lives (RIVM, 2016*). Social and political stability involve the avoidance of disturbances in peo–ple's daily lives that structurally affect the democratic society and social climate.

POSITIVE APPROACH

In everyday life, in the media and in research, people talk more often about lack of safety than about safety. In this study, however, we have adopted a positive approach to this subject, which means that the focus is on safety.

In literature about safety, the term 'positive safety' has been used in recent years. Schuilenburg (2016*) uses that term to refer to the creation of safety by reinfor-cing positive feelings. Connectedness, solidarity and feeling secure are important themes, which help to construct safety in a positive way. By adopting a positive approach around safety, it is easier to start a dialogue about possible answers to the ain question of this foresight study.

In the research process of this study, we use 'speculative design' as a tool to explore ideas and visions. Speculative design opens new perspectives, inspires and stimulates the imagination and creates room for debate (Dunne & Raby, 2013). Design is seen as a way to speculate about what possible futures may look like. By being open to feedback during this exploration – thus encouraging a dialogue with the readers – the aim is to stimulate interaction about the main question. <

Reader's guide

READER'S GUIDE

TODAY'S CONSTRUCTION OF SAFETY IN DUTCH SOCIETY

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In today's society, safety can be approached as a broad societal subject. "In 2017, safety refers to several domains, reference objects, geographical scales and interpretations of danger" (The Netherlands Scientific Council for Government Policy) [WRR], 2017*, p. 30).

In the next paragraphs, we look at the perception and construction of safety in our society. Two developments can be identified: the socialization of safety and the fixation on risks.

SOCIALIZATION OF SAFETY
In the twenty-first century, safety – with all their feelings and emotions, fears and nightmares – is a central issue for people (De Graaf, 2012).* Society and business urge the government to construct safety in a different way. The 'socialization of safety' means that when it comes to safety, the influence of citizens on the Dutch government has grown. In addition, citizens expect more and more from their government; they demand an absolutely secure society. However, the government does not exclusively make decisions regarding safety. New companies also play a role now. Social or commercial organizations, like housing corporations, the Red Cross and schools, take responsibility and contribute to safety in Dutch society. This 'horizontalization of safety' approach (Schuilenburg, 2009*) means that various organizations design and implement plans regarding safety and security. As a result, the organization of safety is more fragmented and less transparent (Terpstra, 2013*). The shared responsibility for safety and the increasing attention for the subject means that safety measures can in the meantime pose a threat to our privacy (Terpstra,

2013*). A lot of attention goes to the citizens' trust in government, the business community and the rest of society. The focus on trust plus the emergence of a changed security sector results in a 'security complex'. This became evident last summer when new surveillance legislation was discussed. It was presented in the first half of 2017 and, despite criticism from inside and outside the political arena, passed in both chambers of Dutch Parliament. Opponents of the law united and started a website to protect the freedom and privacy of Dutch citizens. The media attention and nicknames (e.g. the 'tapping law') that the legislation received allowed its opponents to make it the subject of a referendum.

FIXATION ON RISKS
Today's Dutch culture gives people enormous freedom to make their own choices and satisfy their needs. In an open and democratic society, new issues emerge, also regarding safety. Nowadays, concrete threats and interests are no longer the main ingredients of someone's personal safety. It was in this context that Beck (1992) introduced the term 'risk society' in the nineties, referring to the fact that society is faced with invisible and potential dangers. These invisible risks are hard to quantify and make people realize that they have limited influence on the desired outcome. As a result, the prevention of risks has become the focus. Boutelier (2013*) argues that there is an unspoken longing for a combination of maximum freedom and optimal protection. The call for safety connects people and makes sure that future risks are emotionally averted. Government also pays more and more attention to the existence of invisible risks. Safety and security are the "(...)

new ordering principles for politics and policy" (De Graaf, 2004*). This is also reflected in the coalition agreement for the third cabinet Rutte, titled *Trust in the future,* in which the cabinet states that citizens are assured of a safe, caring and cohesive society and that there will be additional investments in our collective provisions, for example extra money and manpower for security, education and care (Rutte, Van Haersma Buma, Pechtold & Segers, 2017*).

The fixation on risks is connected to risk perception, more specifically the way people perceive risks. The Safety and Security Atlas (Bosatlas van de Veiligheid, 2017*) concluded that it is difficult for people to assess risks correctly. People can be afraid of things that are very unlikely to occur, like being killed by lightning. At the same time, people are indifferent about risks where the mortality rate is much greater, like micro-dust. Assessing risks is a subjective process that is affected by psychological, societal, cultural and situational factors. The perception and assessment of risks together determine how people experience risks. In this judgment, not only the actual likelihood or seriousness of the damage matters. Many risks are much smaller than we imagine and fear plays a major role. The Safety and Security Atlas (2017) identifies a large number of factors that come into play in the perception of risks: familiarity, cata–strophic effect, control, visibility, benefits, moral acceptance, fear, voluntariness, social benefit, trust and technology.

Despite the many factors mentioned above, there is a common thread in the way people perceive risks. The study by Kahneman and Tversky (2013) shows that prior situations play a decisive role. Certainties are considered more important than possibilities thus people consider it worse to lose something than to receive the same thing. Due to the large role of risk perception, biases arise in our decisions. Insurances are a good example of this principle. People try to minimize losses. When we think about all possible diseases, we prefer spending a smaller amount each month than the risk of having to pay high costs at once. In addition, people tend to overestimate issues they worry about. Think of diseases, terrorism and immigration for example. Volkskrant columnist Bert Wagendorp (2017*) summarizes it strikingly: "Murder, manslaughter and other tragedies receive a lot of attention in the media, our brains remember negative information better than positive information and the result is a dark perception of reality". In other words, risk perception does not offer people a realistic assessment of daily life.

HUMAN INFORMATION PROCESSING
In today's society, the interpretation of safety is dominated by negative connotations. Terms such as lack of transparency, threats and risks are responsible for this. That negative information in turn affects the way people process information. People process the stimuli to which they are exposed to in progressive steps. This information process consists of the perception process and the memory process (Weber, 2015*). The memory process involves memorizing information and the way it is stored in the human brain (temporarily or permanently). The perception process is essential in the way we interpret safety and security. During the perception process, some stimuli receive more attention than others do, which means they get different significances. Afterwards a meaning is assigned which makes the

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perception process selective and subjective. Expectations, convictions and prior experiences all play a role, both in creating the images and in interpreting stimuli. Based on the available information, we interpret objects, concepts and situations and determine our attitude and behavior.

AVAILABILITY HEURISTIC: People often rely on their memory to interpret their environment. The tricks they use are called heuristics, which are useful assumptions that lead to quick solutions. After all, taking your time to think about whether you should flee from an unsafe situation is unlikely to increase your chances of survival. One of these heuristics is the availability heuristic, which assumes that, when people can quickly recall an event, that event must have been important. People subsequently tend to attach greater meaning to that memory compared to more recent or other information. People not only consider what they remember, but also the ease or difficulty with which they are able to access certain memories.

The way people discuss, write, talk and make decisions about safety and security all help determine the way it is constructed. For instance, when we talk about safety, the availability heuristic makes us feel safer in a car than in an airplane. Although the risk of something happening while travelling by car is many times greater than a plane accident. This is because it is easier to retrieve a major accident from your brain compared to a small collision on the other side of the highway. In addition, the extent to which we can influence the risk also plays a role in the interpretation of safety. A passenger in an airplane that is about to crash has zero influence on what happens next, but driving a car means obeying the traffic rules, keeping your distance and do a million other things to avoid an accident.

POSITIVE SAFETY

When constructing safety in a society in which negative connotations are dominant, adopting a positive approach is essential. Adding one or more positive connotations can contribute to our sense of safety. It helps people to start looking at certain events in a different way. People experience the result of the perception process as reality and assume that other people have the same information at their disposal. A person is offered new ways to look at safety and therefore can create new opinions. Accordingly, people's convictions and certainties can change.

It is possible to see opportunities for the future when using the positive approach to safety as a basis for this foresight study. Scientific and technological developments will change society, which will involve support and reinforcement but also bring vulnerability as an unavoidable side effect (Bijker, Hommels & Mesman, 2014). A positive approach to safety does not deny that technologies also create vulnerabilities; it does however counter the negative interpretation of safety by looking at what we create as a society. By identifying opportunities, we will be able to approach vulnerabilities with increased confidence. The next chapter of this publication introduces different perspectives on safety and security: are there existing opinions regarding safety that provide a better match to a positive approach? <

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The concept of safety is comprehensive and has many perspectives that extend continuously. A number of terms are widely used. In this chapter, we look at which views match a more positive approach to the safety theme.

Safety is approached from the following perspectives:
- Safety and security
- Internal and external security
- Objective and subjective safety
- Social and physical safety
- Human security and flow security

SAFETY AND SECURITY

The Dutch language only has one word to describe 'being safe', the word 'veiligheid'. According to the dictionary it means being 'free from danger', and being 'protected from danger'. The English language makes this distinction by using the words safety and security. The distinction between these terms mainly lies in the underlying intention. Being free from danger means free from accidental, non-intentional actions, while being protected from danger means avoiding intentional actions. The Safety and Security Atlas (2017*) summarizes it by defining safety as the protection against natural risks and risks during production or transportation, while security involves being protected against deliberate malicious actions by people, systems and organizations.

A few years ago, Dupont and Reniers (2010*) created a table showing the difference between safety and security.

Table 1. Differences between safety and security, based on Dupont and Reniers (2010', p. 4)

Safety	Security
The nature of an incident is inherent in the risk	The nature of an incident is caused by a human act
Not intentional	Intentional
Assessment of risks is based on the source of the risk	Assessment of threats based on the effects
No aggressor	Aggressor and his tactics

The basis of this publication is the social significance of safety, we use the term safety in a dual way, as being free from and protected against danger. They are seen as two sides of the same concept. This is in line with Van Gulijk (2010*), who concludes there are abstract similarities between safety and security.

INTERNAL AND EXTERNAL SECURITY
The terms internal and external security are used to indicate the difference between protection in a company, organization or country and the associated environment. The question is whether such a distinction does justice to our society, since a company, organization or country is always part of an environment. De Wijk and Toxopeus (2005*) talk of a fading boundary between domestic and foreign security caused by increasing international crime and terrorism. Thanks to the internet, criminals around the world can communicate quickly and easily. The 'dark web' has a number of international marketplaces where people anonymously trade products and services. The environment in which this happens is huge and hard to frame. The Ministry of Justice and Security (2016*) talks of 'fluid criminal networks' that are not limited to one territory and that benefit from modern IT applications. A reorientation of tasks and enforcement is necessary, which requires a reorganization of the execution of internal security (the police) and external security (the armed forces) (Den Boer & Leijtens, 2017*).

The Dutch government attaches great importance to national safety and security from the perspective of our Dutch society. *The National Risk Profile* (RIVM, 2017*) refers to a 'multipolar world order' that is affected by international and geopolitical developments, making it hard to distinguish between internal and external security. In the long-term perspective of the armed forces (Ministry of Defence, 2017*), it is argued that developments in internal and external security and developments at home and abroad are interconnected like they never have been before. Due to, for instance globalization, the type of threats are changing compared to the past, with foreign criminals now being able to commit crimes in the Netherlands. The country's safety and security is connected to that of surrounding countries. This blurs the difference between internal and external safety, which means that we need to look at a combination of domestic and foreign security.

OBJECTIVE AND SUBJECTIVE SAFETY
In their study into risk perception, Slovic and Peters (2006) draw a distinction between feelings, the instinctive and intuitive responses to danger and the subsequent analysis that involves logic, reasoning and consideration. The terms objective and subjective safety are used to refer to the difference between what can be measured and what cannot be measured: the perception of feeling safe. According to Pleysier and Vanderveen (2013*) objective safety has to do with situations, circumstances and events that are immediately recognizable and that can be expressed in quantities and numbers. The objective aspect of safety, often measured in terms of feelings, shows an optimistic picture. To quote Bijl, Boelhouwer and Wennekers (2017*): "(…) both the reported number of victims and the registered crimes and reported unsafe feelings have gone down in the last ten years" (p. 296).

However, the feeling of safety has little to do with statistics, it is determined on an individual basis through existing knowledge, experiences and interpretations. In recent years, several studies about how we perceive safety have used the question 'Do you ever feel unsafe?'.

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Van Noije and Iedema (2017*) show in their study that people approach this question quite differently. The feeling of being safe strongly depends on the absence of danger and the perception of fear. Fear helps a person see what may go wrong: negative emotions help respond to the potential danger (Vermeulen, Tuinder and Van Bommel, 2016*). The role of emotions could explain why there is a discrepancy between the positive objective developments and people's emotional perceptions of being safe.

In short, feeling safe is not the same as being safe. The opposite is also true. You can feel safe in an unsafe situation. An addition about objective safety is provided by Platform31 (Van Dijken, 2017*), which states that forms of crime like fraud, environmental crime, bribery, cybercrime and corruption are hard or impossible to measure.

Therefore, it is essential to recognize that the terms objective and subjective safety do separately not provide an overall picture of safety and security. They can only be used to approach safety from two different perspectives. In light of the focus of this foresight study on people within society, the experience of feeling safe is central in the following chapters. The construction of safety is subjective and depends on the cultural context in which people live together.

SOCIAL AND PHYSICAL SAFETY
The terms social and physical safety are used in diverse ways in different studies. The Safety and Security Atlas (2017) indicates whether people organize safety. Social safety is based on human involvement. According to Muller, Helsloot and Wegberg (2013*), social safety is about the (social) environment in which people exist on a daily basis. This includes crimes and violations between people, at home and in their broader living environment. Thanks to technological developments, crimes and violations are becoming easier. In the future, there are new possibilities in the development of threats, for instance spreading epidemics or viruses. Social emergencies can also arise through human actions, for instance attacks that are committed in public places. Physical safety has to do with natural causes, for example the protection of individuals by getting a flu shot or reinforcing dikes and dunes. Physical safety concerns threats to our health, possessions or environment, often caused by technology, nature or sometimes other countries. Examples of physical emergencies are fire, diseases and accidents.

The absence of a clear boundary and the possible overlap between social and physical security makes it impossible to make a distinction based on the source of the threats. Therefore, in this foresight study, we do not make a distinction be-tween these two terms.

HUMAN SECURITY AND FLOW SECURITY
A perspective that approaches security across domains is the distinction between human security and flow security. These terms are used to indicate the difference between the combination of security and social development (human security) on the one hand, and security and the economy (flow security) on the other.

Human safety is about the socio-economic development of man, for instance with regard to the inequality between individuals in a society. The fundamental idea of human safety is that worldwide safety can be accomplished by focusing on the individual. Human safety is people-oriented

and assumes a proactive role with regard to threats, for instance through promoting knowledge and skills that allow people to take care of themselves. Flow security is aimed at essential connections in society, like global trade, which makes countries dependent on their trade partners. This involves both physical connections, like infrastructure and energy networks, as well as digital connections related to data traffic and the associated information flows.

The Netherlands Scientific Council for Government Policy (2017) states that the distinction between human security and flow security, in combination with national security, makes it possible to adopt a broad and integral approach to safety and security issues. By taking into account the global context, we also look at international developments that could affect the stability of the Dutch society. Like internal and external security, domestic and foreign safety and security policy need to be approached in a holistic manner. For instance, violent reactions and debates surrounding the influx of refugees can pit different groups against each other with increasing feelings of being unsafe as a result. This emphasizes the relevance of a society that is balanced and strong. To quote The Netherlands Scientific Council for Government Policy (2017): "The nation's security does not exist independently, but in the service of society" (p. 30).

ADOPTING A POSITIVE APPROACH
In this chapter, we have seen that *there are various perspectives from which we can approach safety and security.* Looking at the opinions outlined above, the terms human security and flow security already apply a positive approach. The focus of these concepts is on development and connection rather than on the elimination or avoidance of threats and risks. The fundamental concept is the support of security in daily life and the economy, taking into account the changing context and allowing people to function within society. In addition to these characteristics, human security and flow security also work across boundaries. There is a visible interaction between the physical and digital domains in everyday lives. This positive perspective thus has benefit compared to the others, which we have outlined in this chapter.

In this publication, we mainly look at the perception of safety in society, after which we examine the consequences for the construction of safety in the society of the future. The economic importance of safety and security is not included in this foresight study. The construction of safety from the interaction between people and their environment has motivated us to select the perspective of human security since the societal importance of safety is best expressed in this concept. **The combination of human security and a positive approach to safety provides the starting point of this foresight study.**

In the next chapter of this publication, we map the construction of safety by society. <

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In this chapter, we look at the social factors that play a role in the perception and construction of safety. Based on the societal importance of safety, we use a combination of human security and a positive approach to safety. This chapter starts with an explanation of what we mean by the construction of safety. Subsequently we discuss the feelings – or affective components – that play a role at the level of the individual and the group.

THE PERCEPTION AND CONSTRUCTION OF SAFETY
The self-evidence of our safe society is under pressure, while the desire for safety and security in our increasingly complex society is growing. To be able to examine safety in the future, we need a cohesive perspective that looks at safety from the interaction between people and their environment. Only then, there will be an opportunity to explore the development of stability and safety in our society. Since more and more shared sources of meaning – like traditions and rituals – are disappearing, people need to construct their own definition of safety as individuals and as a group. Therefore, it is important to map what social factors play a role and the effect they have.

To be able to distinguish those different factors more specifically, we look at their consequences at an individual and group level. In the perception and construction of safety, social factors have both a cognitive and an affective component. Oppelaar and Wittebrood (2006) make a distinction between individual and mutual feelings, which both can have a cognitive, and an affective component. A cognitive component affects the knowledge that people have, which consists of facts as well as opinions. The affective component concerns people's feelings and appreciation. To put it in terms that are more concrete: what is a person feeling during an occasion and in what way are those feelings interpreted?

AFFECTIVE COMPONENTS
In the next paragraphs, we describe the affective components based on social factors. Specifically, we are talking about:
•   Emotions
•   Trust
•   Identity
•   Social coherence

EMOTIONS
Emotions play an important role in people's motivations. People are motivated to aim for things that make them feel comfortable and those positive feelings provide an incentive to repeat those activities. Otherwise, we try to avoid unpleasant feelings. Negative feelings are uncomfortable and prevent us from repeating activities that are bad for us. This mechanism makes us seek out safe situations and thereby increases our chances of survival.

Nowadays in the Netherlands, the dominant opinion is that people should be able to say anything they like and are allowed to say what they feel, which makes them freely express their opinions (Vermeij & Den Ridder, 2016*). This increased outspokenness is also visible with emotions. Expressing our emotions has become acceptable and normal which is reinforced by digitization. As a result, we have a lot of insight into how people see themselves and others and how certain events are valued. Van Kleef (2012*) concludes that emotions are a precondition for social relationships, because emotions reflect what motivates other people, what they want from us and

what we can expect from them. In our current society, emotions are important to establish social connections, both in the physical and in the digital domain. Vermeulen et al. (2016*) argue that emotions often relate to how we interact with each other. By sharing emotions, we create connections and reinforce social relationships.
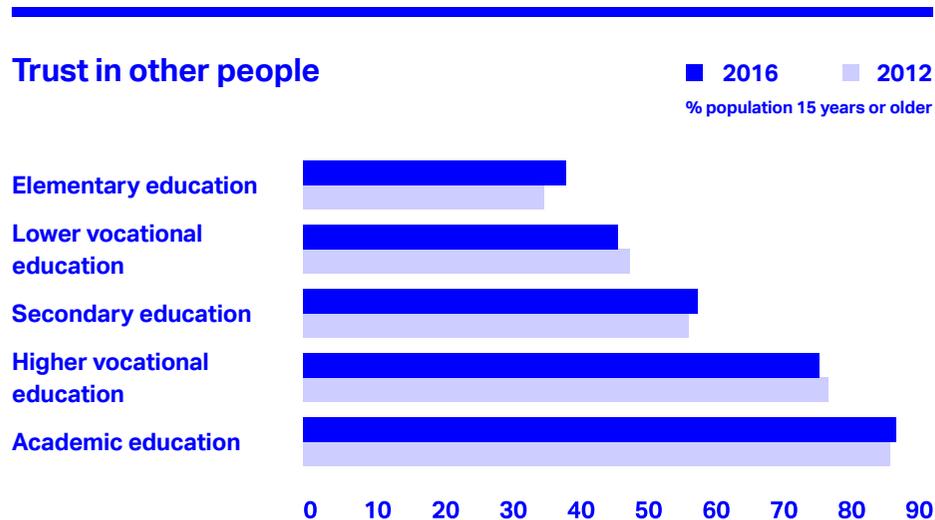
Emotions occur when people assess an event as being good or bad, safe or unsafe, pleasant or unpleasant. Such emotions can be seen as an affective component. An example is the influx of refugees, which makes some people feel insecure while in other people it evokes the willingness to help. Depending on the perception process, these emotions can subsequently change. According to Vermeulen et al. (2016*) it is important to place emotions into perspective: knowing what you

should or should not do in everyday life is becoming more important than it used to be because shared sources of meaning are disappearing. Emotions play a major role as an affective component in the perception and construction of safety.

TRUST
In recent years, trust has received a lot of attention due to the socialization of safety. Trust has to do with positive expectations and good intentions of other people. You have the online parcel that you ordered delivered to your neighbor, because you trust your neighbor to hand it over when you knock on his door. According to Statistics Netherlands [CBS] (2017*), 60 percent of the Dutch trust their fellow human beings. As the graph below shows, education levels have a positive effect on how much we trust each other.

Figure 2. Trust in our fellow human beings, based on Statistics Netherlands [CBS] (2017*)

Trust in other people

■ 2016 ■ 2012

% population 15 years or older

Elementary education	
Lower vocational education	
Secondary education	
Higher vocational education	
Academic education	

0 10 20 30 40 50 60 70 80 90

Trust can refer to other people, to yourself, to organizations, institutions or systems. In this chapter, we talk about trust in other people and groups within society. Trust is based on the expectation that a person's behavior will not have a negative impact on others. For instance, during a football game, many different groups are present. Hard core fans stay standing the whole time, cheering for their team. In the sky-boxes, the sponsors are doing business. Elsewhere in the stands, parents tell their kids what to look for and what is about to happen. Stewards and other staff work on creating the right conditions for the game to be played. In the end, all these groups are in the stadium together at the same time and they depend on each other's behavior to allow the game to be actually played. Therefore, there is a strong relationship between trust and the functioning of a group. The same applies to society as a whole.

The Netherlands is a 'high trust' society; confrontations are resolved by working together and considering each other. Compromises are reached to overcome differences in opinion, which is called 'polderen' in Dutch. This is shown in the report *The social state of the Netherlands* (Bijl et al., 2017*); the Dutch trust their parliament and are optimistic about the direction in which the country is moving. If we look at international developments like globalization and digitization, this willingness to cooperate is essential for the creation of trust. The interaction between the physical and digital domains also requires trust. Within networks, working together based on shared interests provides a good start for the development of initiatives and solutions. This is a good breeding ground for trust.

The level of trust in our society is changing, among other things, because there is an

ongoing discussion about the authenticity of facts. Different interpretations of the same reality almost invariably occur. People give their own interpretation of whatever information and stimuli they are exposed to. In today's society, the words 'fake news' have become commonplace, implicating that even the media are no longer to be trusted. In order to properly assess the intentions and expectations of other people, it helps to have shared basic knowledge. By talking to other people and reaching an agreement, we can maintain a certain level of trust. Bijl et al. (2017*) conclude that Dutch people do not look differently at politics and society in 2017 compared to the 1990s.

Trust connects people and creates mutual agreement. According to Schuilenburg, Steden and Oude Breuil (2014) trust is created informally, outside the borders of nations or existing laws. The aspect of trust can therefore be used to create positive opinions about safety. Because positive connotations contribute to the perception and construction of safety, it is interesting to know what is needed to stimulate trust in our fellow human beings and subsequently promote this growth of trust between groups in society.

IDENTITY
In addition to trust, it is also important to examine the interaction between individual people and society within the framework of identity. This interaction is clearly visible in the concept of identity, because the term identity unites the tension that exists between being unique and belonging to a group. The core of identity is the interaction between what exists inside a person and that what is determined outside that person. Identity has to do with the self in relation to others (inside) and to everything and everybody else (outside). So identity is not something

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that just exists, it is created by our inter-action with other people. In our current society, identity is determined by a constant weighing of different interests, options and expectations (Jensen & Wijn-berg, 2012*).

By focusing on being, we create distance between others and ourselves. Identity within a person refers above all to per-sonality, that which makes us uniquely ourselves. Earlier, the philosopher De Cauter (2015*) called this 'a dangerous fiction' because identity pins people down to a permanent essence. This essence seemed unchangeable because origin and associated (idealized) past were confirmed by stories from history. Such a static image based on origin and heri-tage does not help, however, in building a dialogue with other people. Experiences, constructive attitudes and changing expectations are not included in this con-sideration. By encouraging trust in others and embracing the variable nature of iden-tity, the future no longer has to be about our past.

The discussion about a national identity creates uncertainty. Uncertainties and threats cause people to withdraw and avoid interacting with others, while it is that very interaction as well as the open-ness to dialogue that are so important when safety is at stake. In the next para-graph on social coherence, we take a closer look at this topic. In the publication *Respect!* (Evenblij, 2007*), the conclusion is that the recognition of the own identity is essential to social cohesion. A sense of belonging can only emerge in combi-nation with a desire to remain visible in a larger group. The stories from history that have shaped the concept of identity need to change. A new beginning is pos-sible if we are able to accept that people enrich their identity by interacting with

others. Working together is a way to unite social and societal diversity. We can make a positive contribution to the creation of safety by paying attention to each other's considerations in dialogue with other people.

SOCIAL COHERENCE

Social coherence or social cohesion means that people interact with and are connected to each other. This can involve total strangers greeting each other in the street, neighbours organizing a party together and everything in between. To examine the concept of social cohesion, Schmeets (2015*) created a framework of the dimensions participation, trust and integration. The framework is used to explore these dimensions within and between groups. As far as the dimension of trust is concerned, the last 25 years have shown a stable level. The same is true with regard to participation, so there are no cracks in people's participation and trust in society nowadays (Schmeets, 2015*).

People participate in society in their daily lives and in their interaction with others. That can be at work, in the street, in a shopping center or gas station, or in any number of other places. According to Schuilenburg, Schoenmakers and Van Zanten (2017*), meeting places stimulate social relationships in the neighbourhood and allow people to interact with each other in a positive way, which creates bonds between people and stimulates the creation of networks. When people start interacting with each other, stereotypes are tested. With stereotypes, the differences and contrasts between groups are central. These differences between groups are determined in particular by education level, religion and heritage (Evenblij, 2007). In the information process, stereotypes hinder an objective view of reality.

If contact between groups is difficult, it can be facilitated by establishing con-nections between citizens, entrepreneurs and schools, which leads to cooperation and integration and so reduces the differ-ences between groups. Schuilenburg et al. (2017*) show that diverse communities help to create a positive feeling of safety. Of course, there will always be vulnerable groups, which, for a variety of reasons, find it particularly hard to connect to society. In today's society, this could arise from the interaction between the physical and digital domains. People cannot or are unable to keep up with technological developments or never even got started. These vulnerable groups can be supported by identifying why it is so hard for them to keep up. An example of this is the planned abolition of the paper money transfer or 'acceptgiro' in Dutch. The arrival of digital payment methods allegedly made the paper versions redundant. However, it turned out that many elderly people and

non-profit organizations still use this paper money transfer, so its abolition has been postponed indefinitely.

The presence of communities creates peace, order and protection. The feeling or awareness of being part of a group is ex-pressed in the core concept of 'belonging'. Van Steden, Van Vliet, Salman and Boutellier (2010*) say: "People need to feel that they are part of a community, that the members are important to each other and are interested in each other's needs" (p. 36). A shared framework of caring, solidarity and involvement has a positive effect on people's willingness to connect. In addi-tion, Schuilenburg and Van Steden (2016*) state that people connect with others in places where they feel comfortable and at home. Everything that brings people together, feels comfortable. Social cohesion is positively connected to safety, security and safety perception (Wittebrood & Van Dijk, 2007*). <

In the previous chapter, we saw various social and societal factors that take part in the construction of safety. This final chapter answers the sub-question of this first publication: *A: 'Which societal factors play a role in the construction of safety?'.*

For a person, safety is created via the perception process. Through exposure to stimuli and a focus on certain stimuli, meaning is assigned. The information is subsequently stored – temporarily or permanently – in the individuals' memory.

Emotions, trust, identity, and social coherence are the building blocks that affect the construction of safety by society. These affective components create a great deal of subjectivity in the organization of safety. To a greater or lesser extent, they allow an individual interpretation of everyday life. Because social factors have both a cognitive and an affective component, associations are made between knowledge and feelings. The intensity of reactions, for instance to social inequality within society, appear to be rooted in affective components. Due to the interaction of the physical and digital domains, responding

quickly becomes ever more important (Vermeulen et al., 2016*). As a result, reflection and nuance – which play a much bigger role in the cognitive components – disappear into the background. Knowledge and reflection become less important and people are easily influenced by spoken, written and displayed messages in their environment.

By using the concept of safety and defining positive associations, emotions and experiences are established that are of great value. The added value of adopting a positive approach is reflected in the article by Van Boers, Van Steden and Boutellier (2008*), who argue that factors like trust, solidarity and commitment make a positive contribution to perceived safety and security.

In this publication, we argue that the interaction between people and their environment plays a role in the construction of safety. The affective components show us that feelings are co-determined by the interaction with others. This is in line with our decision to look at people within the context of society. By seeing safety as a social construct, it becomes interconnected with society. <

CONSTRUCTING SAFETY BY SOCIETY

SAFETY AS AN ACTIVITY
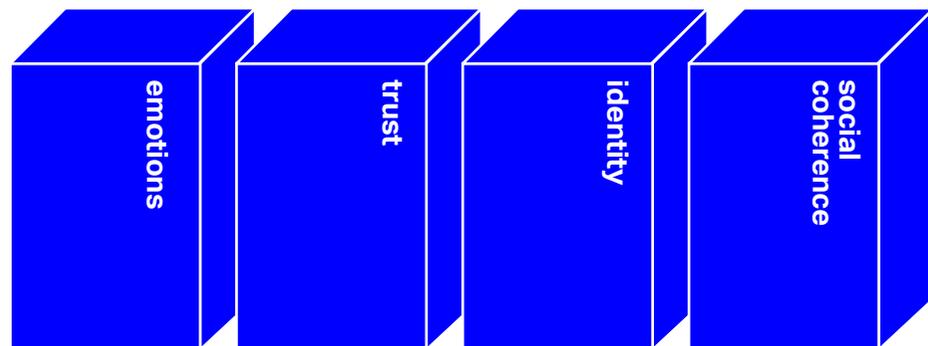
IIn this foresight study, we look at safety and security at the crossroad of our future society and technological developments. This chapter describes the starting point for the second and third publication. The aim is to create a variety of images that show possible perceptions and constructions of safety in the society of the future.

The structure of the foresight study is reflected in three publications. The interaction between people and their environment is described from the perspective of social factors. The construction of safety based on those factors is based on the interaction between people and their environment. It is interesting to note that safety is predominantly discussed as an outcome. Affective components in particular play a role in the social factors, as well on an individual level as on a group level. The second publication focuses on

the changing context of safety as well as the interaction between the physical and digital domains. What new technologies can possibly change the construction of safety? In what way do social relationships change through the interaction of the physical and digital domains? The consequences of the technological culture on our future society are explored along these lines.

The notion of safety as an activity is introduced gradually in this foresight study, by discussing different elements of the process of constructing safety. The creation and experience of safety, combined with developments in everyday life and the interaction between the physical and digital domains provide insight into the changing construction of safety. In the future, we can use technology within this changing context to promote safety. <

emotions

trust

identity

social coherence

24   25

Join the action! Share your opinion or anecdote about safety, exchange ideas about this relevant concept, respond to the perspective adopted in this study and take part in the working groups that discuss the building blocks. Together, we work on a positive construction of safety in the future!

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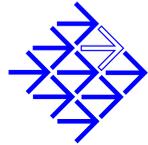
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