Imaginative Scenario Planning
For Security and Law Enforcement Organisations

A REPORT ON PRACTISING WITH UNCERTAIN SECURITY FUTURES

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About CREST

Cover photo: Future Security Threats Collage (CREST project 2017)

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Foreword

This project was awarded and financed by the Centre for Research and Evidence on Security Threats (CREST, (https://crestresearch.ac.uk) on the basis of a general call for "Research for Understanding, Mitigating and Countering Security Threats" with a specific subtheme on "Scenario Planning and Prediction".

It was developed and executed by: Prof Math Noortmann from the Centre for Trust, Peace and Social Relations (Coventry University, UK), Prof Juliette Koning from Oxford Brookes Business School (Oxford Brookes University, UK), Dr Joost Vervoort from the Copernicus Institute of Sustainable Development (Utrecht University, the Netherlands) and Dr Ingrid Hoofd from the Department of Media and Culture Studies (Utrecht University, The Netherlands). Birgit den Outer (Oxford Brookes University) and Astrid Mangnus (Utrecht University) provided invaluable research assistance. However, the project could not have been done without the cooperation of the *Landelijke Politie* (*National Police*) in the Netherlands and the *National Crime Agency* in the UK and the engaged and knowledgeable participation of their staff-members.

The first draft of this publication was introduced to and discussed with 40 invited guest from academia, civil society and government, who provided valuable additional knowledge. Prof Cliff Oswick, Professor of Organisation Theory at Cass Business School (UK) and Neil Walsh of the United Nations Office on Drugs and Crime placed the future scenario planning in the context of organisational strategies and transnational organised crime.

The project is a wonderful example of the co-production of knowledge, across cultures, experiences and disciplinary approaches, which resulted in this report to be used for similar exercises in other law enforcement organisations or adapted for specific purposes.

Preparing for an unknown and intrinsically uncertain future requires a special logic and skill set. It requires imagination and creativity; out-of-the-box thinking. Next, it requires developing multiple scenarios and designing holistic strategies. And finally, it requires the building of an organisation that quickly adapts to new, unexpected developments and situations and that does not freeze when the future throws them that unforeseen curveball.

CENTRE FOR RESEARCH AND EVIDENCE ON SECURITY THREATS

"CREST is interested in better understanding structured approaches to forecasting plausible potential future scenarios. How can investigators and policy makers do this most effectively?"

1. The Project and its Context

Scenario planning as *a tool* for security and law enforcement organisations to anticipate unpredictable futures is a new approach to managing potential security threats. Current research and policy documents indicate that future scenario planning is not widely practiced in these organisations; short term operational and tactical planning dominates policy and management. Law enforcement organisations that do investigate longer-term futures, tend to develop future strategies based on past trends. This inhibits the organisation's capacity to anticipate future security incidents in an effective and flexible manner.

How can we anticipate and counter the diversity of forms in which such abstract and broad security threats as terrorism, cybercrime, organised crime and financial crime present themselves in our future? How does the police force look in our future? What technologies are available to commit and counter crime? What determines our global development: the economy, climate change, population growth, (cyber)technology, transport...? In order to engage these questions we, first of all, organised creative, collage-making focus groups with members of the *Landelijke Politie* (The Netherlands) and the *National Crime Agency* (United Kingdom) in order to unearth new data. Next, we organised a day-workshop with both groups to experiment with multiple scenario's based on the focus group outcomes. Finally, we initiated a discussion on the outcomes of the scenario planning exercise at the End Conference.

This report:

1. Supports security and law enforcement agencies to engage in imaginative and creative scenario planning exercises and to develop their own long-term scenario planning research;

2. Offers a better fundamental and applied understanding of scenario planning as a technique to imagine future security threats;

3. Counters the pervasiveness of 'command and control' and 'prediction' thinking; and

4. Enhances the capacity of security and law enforcement organisations to detect, anticipate and mitigate future security threats.

We advise these organisations to prepare for hitherto unknown security threats and their unknown effects; and to do so in a way that (1) *imagines* a variety of possible futures, (2) undertakes a *holistic analysis* of those futures, and (3) *strategically plans* for the long term.

Who anticipated:
bitcoin, 9/11, facebook, synthetic designer drugs, iPhone, Columbine, suicide bombings, Brexit, WikiLeaks, the global financial crisis, the collapse of the Soviet Union, and so on.

2. Scenario Planning:
Practising with the Future

Scenarios are:

- Multiple plausible futures
- What-if stories of possible futures
- Explorations of crucial future uncertainties
- NOT predictions
- Complex systems thinking
- A futures technique
- Tools for building adaptive capacity

There are inherent problems that arise from using prediction as a strategy for determining how to mitigate future threat. Whilst success may be found predicting trends on a short-term basis, mid and long-term events are contingent on many interacting factors and prediction therefore becomes unreliable.

Scenario planning offers an alternative solution to this issue. The usefulness of the technique is not dependent on the likelihood of the scenarios coming true, but the opportunity for security and law enforcement organisations to set flexible strategies to deal with them. It is the development of a flexible response that marks the success of this technique. See Figure 2.1

Scenarios: Beyond Prediction
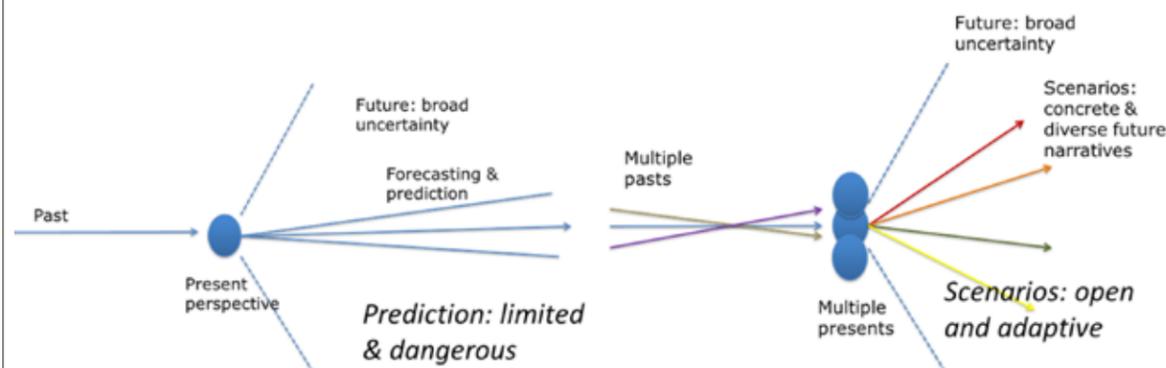
Figure 2.1 Scenarios help move away from thinking about one most likely future – toward multiple futures based in multiple presents and pasts. Adapted from Vervoort et al. (2015).

...what you want this boat for?... to go in search of the unknown island... what unknown island?... The unknown island... nonsense there are no more unknown islands... they're all on the maps... only the known islands are on the maps... what is this unknown island you want to go in search of?... if I could tell you that, it wouldn't be unknown...

From Jose Saramago (1997) 'THE TALE OF THE UNKNOWN ISLAND'

3. The Basics of Engaging with an Uncertain Future:
Six Key Recommendations

Human societies are by definition complex and dynamic, and need to cope with existing and future uncertainties. Security and law enforcement agencies need to anticipate certain future developments as part of their task to prevent and mitigate future security threats. Not only are future threats and risks uncertain; the future consequences of taking preventive and anticipatory action today, are also unknown. **So how can these agencies work with the future?**

DOs and DON'Ts

1

**DO NOT
try to predict the future**

The default mode of any organisation faced with planning for the future is to look for prediction. For shorter-term futures and for tactical-level planning, prediction may be adequate – not perfect, but practically useful. However, when law enforcement agencies consider changes beyond the next few years, and what these changes mean for them, it is important that there is a widespread realisation that we are dealing with 'deep' or irredeemable uncertainty[1,2]. We can't resolve it completely.

2

**DO NOT
rely on the
biased present**

The present blinds us to the possibilities of the future, and we are often unaware of how the present limits our thinking. Current trends are the ingredients of a biased present. Relying on the likelihood that any one emerging trend will become a future reality is dangerous.

3

**DO
think multiple futures**

A great way to get out of our biased present-based mindsets is to let many different, surprising, challenging futures bloom. Even if some of these futures do not avoid simply projecting our ideas about the present into the future, if we create many different futures, the set of futures as a whole is more likely to surface new insights. A great way to get out of our biased present based mindset is to think of many different, surprising, challenging future scenarios. Even if some of these scenarios simply project our ideas about the present into the future, by creating many alternatives, the set as a whole is more likely to surface new insights.

4

**DO
use creativity and
imagination**

Even when we are engaging with multiple futures in order to move away from the present, we can become stuck due to our thought on how plausible the options may be. This can limit our thinking. We need to let go of the idea that we are trying to think about the most likely scenario, and just come up with as many ideas as possible. Those scenarios that are difficult to imagine actually help us to understand the strengths, weaknesses and risks in an entirely new way. [3,4,5]

5

**DO
practise with futures:
experiment, simulate, take
perspectives**

Security and law enforcement organisations should practise with different futures to investigate and improve their abilities to adapt to uncertain futures. This means experimenting with such futures – how do these organisations actually respond to different situations? It also means including the perspectives of antagonists, members of the public, and so on.

6

**DO
link futures back to present-day adaptive capacity – what needs to change?**

Whilst planning for every future contingency is impossible, the challenge lies in building a security or law enforcement organisation that has the adaptive capacity to deal with the future, however uncertain. 'Adaptive capacity' is the ability of an organisation to adapt to constantly changing contextual, future, conditions[6,7]. The lessons learned through practising with the future should connect back to present-day activities in a manner that actually allows the organisation to become better at adapting to uncertainty in a concrete sense – leading to new skills, capacities, ideas and strategies. The approaches outlined in this report should be used to critically investigate what goes on now in these organisations, as well as investigating plans for the future.

4. Working With Uncertain Futures: A Step-By-Step Guide

Any process that seeks to engage uncertain futures requires the capacity to imagine the future, build scenarios and adapt strategies. The following steps are indicative of building that capacity:

> A. Ask organisational questions about your process
>
> B. Use creative approaches to explore key drivers of change
>
> C. Create scenario frameworks
>
> D. Develop scenario narratives
>
> E. Use scenarios to experiment with capacities and strategies

The project was deliberately designed as a sequence of three related activities: creative collage making focus groups, a scenario planning workshop and an end event intended to discuss and operationalise findings and outcomes.

A. Ask organisational questions

Before you start, ask yourself:

What are we trying to achieve by thinking about the future?
Your goal can come from specific decision-making and priority-setting activities, or from raising new questions, capacity development and learning. Whatever the purpose, how the achievement (or failure) of the objectives will be measured needs to be considered.

Who are the users of the process?
Different groups of users will have different methodological preferences, different amounts of time they can allocate to the process and different time-horizons as their focus. Developing futures with users has proven to be the most successful approach as the futures created are then owned and understood by all involved. Users are more likely to take scenarios, collages and other imagined futures seriously if they are involved in generating them.

Be careful about the creation of future scenarios by specialist teams without the involvement of those who are meant to make decisions based on the futures created.

What are the capacities associated with the process?
Who are the people organising the foresight process and what are their capacities and experiences, what methods are they familiar with and should they learn? Are they able to effectively integrate the foresight process into relevant decision-making processes and how easily replicable does the foresight process need to be?

Based on these questions, what is the scope of the process?
What time horizon is considered? What are the boundaries of the societal system(s) that are being discussed? These questions will help with the next steps and help prevent that the entire world has to be taken into account.

> Our project-process was aimed at quickly familiarising key members of Dutch and UK law enforcement organisations with the basic elements of working with uncertain futures. To do this, the process was designed to be accessible – and much room was left for discussing the approaches themselves. Most participants had experience with approaches for exploring the futures – some were themselves specialists seeking to use the approach for supporting others. The scope of the process focused generally on the challenges for law enforcement in the Netherlands and the UK over the next two decades.

B. Using creative approaches to
(1) explore the future and/or specific future issues, and
(2) to identify drivers of change

A key challenge at the beginning of a process of exploring the future is determining what is relevant to investigate. What are the developments, processes, movements and major changes that will have an impact on the system of focus over the time period being investigated? We've already mentioned the issue that many people have a hard time getting out of the present when thinking about challenging futures.

Our recommendations:

1. Use an approach that stimulates lateral and creative thinking for the identification of key issues and driving factors that frame explorations of the future. Below, we describe one such an approach: *creative collaging*. Multiple approaches can also be combined to ensure complementarity. Extensive desk research can support this.

2. More issues/driving factors is better. It is important to be exhaustive – creating a long list of driving factors is often valuable, because people will come up with the most obvious driving factors first – those that are already most commonly used in everyday practice. Ensure diversity of driving factors by asking which dimensions (cultural, social, technological, financial etc.) might still be missing. In this phase, having too many driving factors is not a problem – selection happens in the next step.

3. Include driving factors that may seem rather far removed from the system being focused on – for instance, factors changing economic conditions or global geopolitical forces that may impact a local or national context.

Creative collaging

Collage: is the process of using fragments of found images or materials and gluing them to a flat surface to portray phenomena[8]. This is a great approach for lateral and creative thinking about key issues and drivers.

▶ **How to 'do' it:**
- Flick through magazines (with lots of pictures) and cut out pictures and slogans that relate to your imagined 'future' or even better let the images from the magazines inspire you: what images spark ideas about a far-away future?

- Assemble the selected images into one collective picture (the collage) by gluing the selected images to a larger paper in any way you want.

- Explain the collage to the other participants: what do each of the images express, what are the little stories behind each, why were they selected, how do they relate to each other? It is suggested to record this conversation in order to capture all the details later.

▶ **What does creative collage making offer** (after Butler-Kisber & Poldma, 2010):
- Direct involvement from the participants on the issues they find relevant.
- More intuitive engagement; arranging image fragments can reveal unconscious connections and new understandings.
- Ways to make tacit knowledge and ideas explicit.
- A challenge to linear thinking associated with more traditional approaches.
- Free association(s).
- Different conceptualisations of a phenomenon and a more nuanced understanding.

▶ **Collage-making in a group or as an individual:**
- *Group:* allows discussion on selecting images, group members can query each other; some groups discuss what to look for first, others prefer to each select images and then discuss these for final selection. One disadvantage: the process can be taken over by a dominant group member (and thus less voice of others).
- *Individual:* provides all the space to follow one's own ideas and thoughts, but lacks the interactive engagement with others and opportunity to be challenged.

▶ **What is done with the collage:**
- Groups (individuals) explain their collage to the other groups (individuals).
- Participants can question the points made, offer their observer interpretations.
- The open expression of ideas through a pictorial representation allows a whole range of attitudes, beliefs and feelings to emerge and to be explored, thus generating greater understanding of others' perceptions of the same situation.

In two focus groups with law enforcement organisations in the Netherlands and the UK, creative collaging was used to explore future contexts for law enforcement. The results from this process were then used to map drivers for future scenarios. The collaging had two parts: what does the world look like in 2040; what are main threats and drivers in that world?

Remarks by participants on collage making:
- *The collage-making produced rich data in a relatively short period of time*
- *Collage making takes you out of your normal way of working*
- *In particular the exchange with the others was of interest to me; we are all somehow stuck in our own ideas, the arguments of others were really provocative and enriching*
- *Leafing through the magazines made me 'change' my mind on what to choose; gave me new associations*

As a result of the creative collaging several, maybe less-predictable, future threats came up:
- Growing joblessness among middle class will see increase in crime
- Separation of body and mind – online identities separate the physical and cognitive
- Water and electricity wars will break out
- Tech-savvy specialised crime becomes mainstream
- Increase of vigilantism (supported by governments, end of policing)
- Notwithstanding the advance in technology, traditional crime will stay (gun/knife)
- It will be easier to lead double lives and thus for criminality to go by unnoticed
- Space tourism, hacking of rockets, space mining (debris attacks planet earth)
- Manipulation of science to create criminals
- Manipulation of food to create chaos and deadly viruses
- Dark side of algorithms and self-thinking machines: spying for insurance and space satellites that will disrupt infrastructure or let them crash
- It is getting easier to influence people, and for people to be influenced
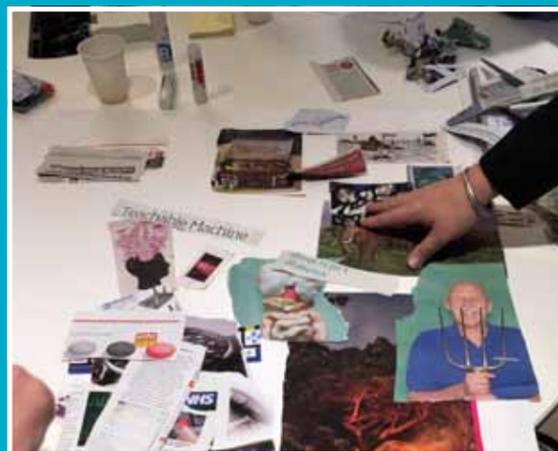
Picture 4.1. Collage making in The Hague (project photo 2017)

Picture 4.2. Collage making in London (project photo 2017)

Drivers of future security challenges
The drivers of future security threats include both expected and less expected drivers. This is not a problem as for the scenario-planning exercise a large number of drivers is useful.

Technology stood out as the 'word cloud' below shows:

Figure 4.1. Word cloud focus groups London (2017)

Technology/big data/digitalisation/ drones/algorithms/online-ness: seen as main driver for societal changes such as vulnerability of people/groups; growing divides; retreating into homes; loneliness; growing anonymity and leading double lives – creates new threats based on technology (cybercrime, data/technology manipulation, digital warfare) and society (going about things unnoticed; vulnerable people who can be exploited; minions and vigilantism).

Environment/climate change: finite resources; global warming; extreme disasters – increase of fights and wars over scarcity such as water wars/electricity wars, bio-crimes, commodity crimes etc.

Society/people: aging population; isolation and loneliness; austerity; gender; societal divides – creates civil unrest, being judged before judgment, mass mobs, new criminals/ new victims; communication (truth-finding and democratisation of information).

Economics/politics/finance: China; economics rule; leadership; nationalism; political pressure – impact on law enforcement, changing law systems (naming/shaming); digital finance.

Examples of using creative tools in law enforcement

In the field of law enforcement, practitioners are constantly confronted with extreme or previously unimaginable situations. Eidinow & Ramirez (2016)[9] describe how the aesthetics of creative methods can help practitioners think through the limits of what might happen in crime and policing, and subsequently communicate their thoughts to others. Another frequently used example of a creative aid in both law enforcement and in the military (where it was first used) is gaming. Games and scenarios have a number of futures-related features in common, as Walker (1995) describes in his article on the two[10]. Games enable law enforcement officers to explore future (crisis) situations, and repeat through trial and error what in reality could never be 'practised' in such a way. The appendix to this report contains a more elaborate explanation of games as a way to engage with futures.

C. Create multiple scenarios

Many driving factors will be important for developing scenarios but the selection of some key drivers is needed for the initial structuring of diverse scenario sets. To determine these driving factors, first, a choice has to be made on *how* the scenarios will be structured. A number of methods exist:

Two axes: a classic and often-used approach to scenario development is the creation of a set of four scenarios by taking two drivers of change, developing two alternative future states for each of these drivers, and combining the two drivers and their alternative states into a set of four alternative scenario worlds – see figure 4.2.[11]
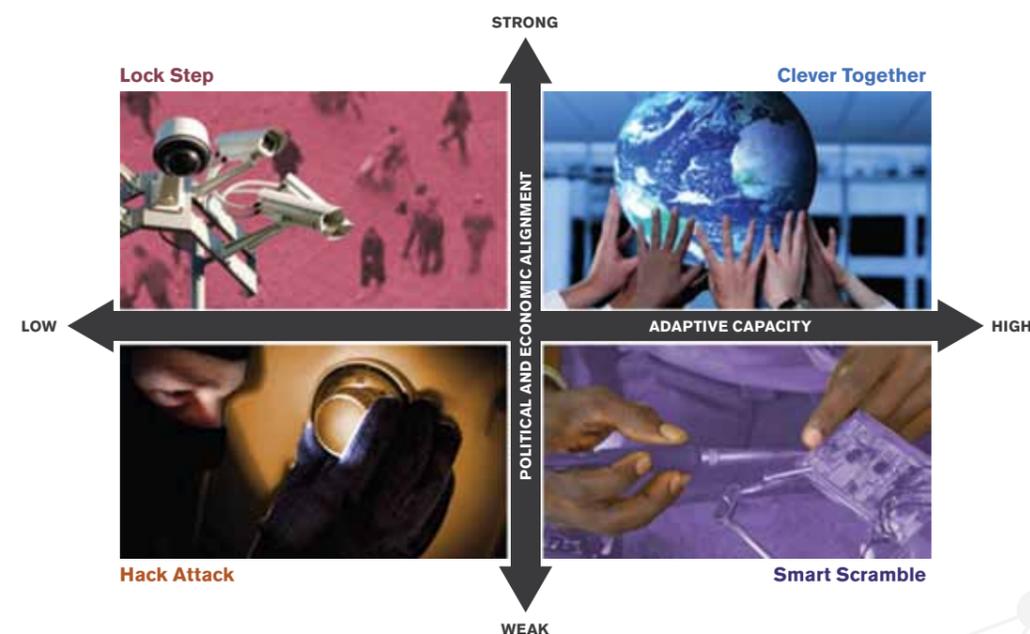

Figure 4.2 Two-axes, four scenarios. Source: Rockefeller Foundation (2010: 16)

This approach is accessible and has proven its worth. However, it has the limitation that the set of futures is dominated by just two drivers of change.

Multiple scenario sets: the development of a large number of scenario sets – based in different combinations of drivers – allows the emergence of many entirely different ways to investigate the future. If plans and capacities are tested against multiple sets of scenarios that are each framed by entirely different sets of assumptions, these plans and capacities are exposed to many quite diverse future conditions.

Selecting drivers that form the basis of scenarios: no matter what method is used, the first step is always the selection of key driving factors. Two main questions for this selection are:

1. which driving factors are expected to have a high impact on the system in question

2. which driving factors are expected to be highly uncertain – in the sense that a driving factor may unpredictably develop in significantly different directions?

For the use of scenarios in security and law enforcement contexts, we propose a third question:
3. which driving factors are the least commonly used in present day practice?

This specific question will help surface the new and unfamiliar drivers of change.

Making driver combinations for scenarios: the next step is – which drivers, when combined, make the most challenging and useful scenarios? Some combinations of drivers create sets of four scenarios where all scenarios show the promise to be useful – but others might create a scenario set where two scenarios are less interesting. Try out different combinations and select pairs of drivers.

Defining polar opposites for each driver: This is an important step. For each driver, define polar opposites that ensure the most interesting and useful exploration of that driver. For each driver, there are many possibilities. For instance – the driver 'world economy' could be defined as 'strong economic development' versus 'weak economic development'; but it could also be defined as 'stable global economy' versus 'volatile global economy' – creating entirely different scenarios. Therefore, while defining the polar opposites for each driver, keep in mind what the goal of the scenario exercise is: What are you trying to investigate? Also, consider how these polar opposites will interact with those of the other driver in the scenario set.

In a combined workshop with participants from Dutch and UK law enforcement organisations, we used the collaging process described in the previous box as a source of drivers (see Table 4.1 below).

Migration	**Space**	**Changing energy systems**	Age of leadership	**Role of algorithms**
International conflict	Religion	Water scarcity	Change in warfare	Virtualisation of life
Inequality	**Nationalism**	Material scarcity	Possibilities for community organisation	Fluidity of gender identities
Climate change	Vigilantism	New ways of self-organisation	Biodiversity loss (awareness)	Role & structure of families
Ageing population	Civil disobedience	Technological capacity of criminals	Longevity / life expectancy	Individualisation
Online living & ordering	Mental health	Difference in tech-savviness between generations	Alternative / non-modern lifestyles	**Surveillance** vs. privacy
Changes in money & currency	**Reliability of public information**	Evolution of information availability	New ways for social intimacy	Availability of advanced biotechnology
Isolation	Societal coherence & trust	**Fundamental changes in (global) political system**	Work / life balance	Changes in economic structure
Robotisation	**Control over Artificial Intelligence**	Gender balance in leadership roles	Manufacturability of online identity	Changes in healthcare
Changing labour market	New opportunities for cybercrime	Gender balance in global workforce	Possibilities for invisibility in online sphere	**Quantum computing**

Table 4.1. Drivers of future security threats
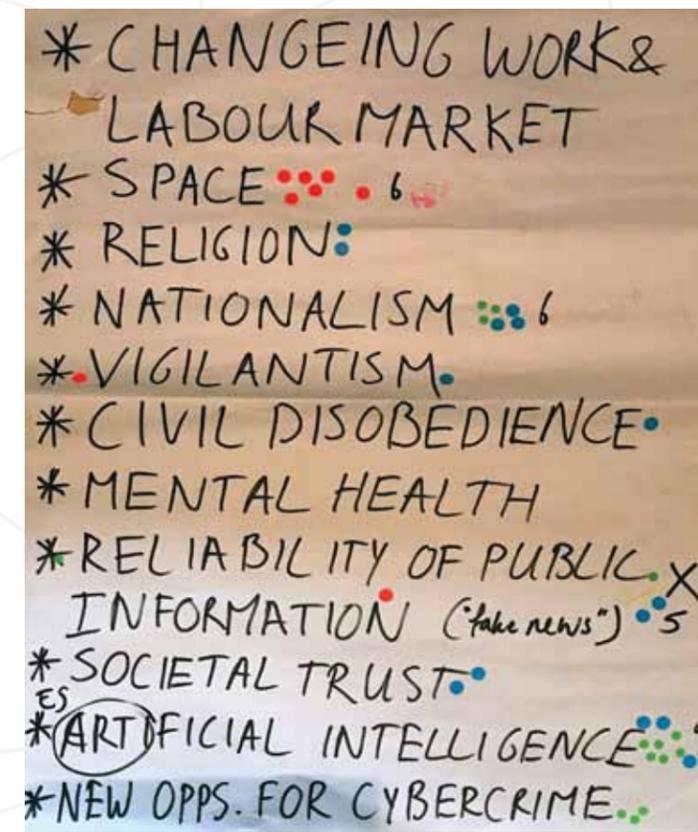
Picture 4.3 Drivers marked with different colours for impact, uncertainty and novelty [project workshop photo 2018]

The participants were then invited to place 3 different stickers (see Picture 4.3 above) next to the drivers that they thought would:

- 🟢 have the most uncertainty associated with them (green)

- 🔵 would have the most potential impact on the issues discussed (blue)

- 🟠 are least discussed in law enforcement (orange)

The drivers that received most stickers were thus selected to be taken forward into the scenario planning process are highlighted in bold in Table 4.1 opposite.

Scenario making

Five teams of two participants chose two drivers each (see Table 4.2 below) and created four different scenarios along the 'scenario axis'.

The scenario making exercise resulted in a total of 20 different scenarios, or 4 for each of the 5 teams that explored the intersection of two drivers.

Picture 4.4 Four different scenarios for two drivers [project workshop photo 2018]

1. Control over Artificial Intelligence & Changing energy systems
2. Space & surveillance
3. Isolation & Role of algorithms
4. Fundamental changes in (global) political system & Quantum computing
5. Reliability of public information & Nationalism

Table 4.2 Scenario axis combinations
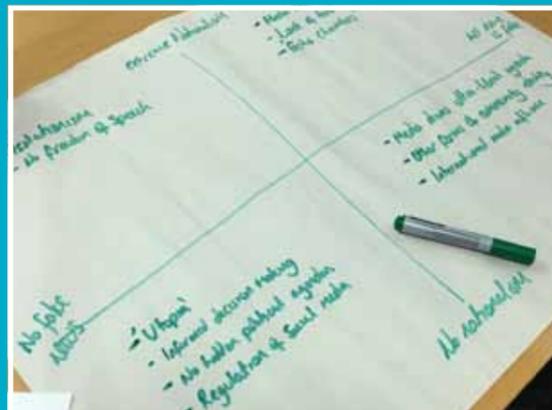
Picture 4.5 Four different scenarios for two drivers [project workshop photo 2018]

Examples of using multiple scenarios

Rapidly generating multiple scenarios is rather new and hence examples difficult to find. Looking at various case studies, it becomes clear that the majority of law enforcement issues contain a multitude of drivers being discussed. The article by Picarelli (2009)12, for instance describes the opposing viewpoints of two terrorism experts. They mention many diverging drivers for their terrorism predictions while trying to answer questions like: where is terrorism coming from? What global and local developments need to be taken into account? Is it more likely that al-Qaeda re-establishes itself in Pakistan, or that domestic terrorism rises? And what is more impactful?

D. Developing scenario narratives

Once a scenario framework has been created, scenario narratives must be developed to investigate what happens in each scenario and the consequences of each scenario for the objectives of the process. Given some time (anywhere from 2-3 hours) we recommend the following approach to narrative development:

1. Starting at the end, with the time horizon of the project in mind, create a **vivid scenario world** where the basic dynamics of how the scenario works are clearly understood. If certain drivers of change combine to create a future world, how would this world function? What are the most salient elements of this future? What would life be like in this future world? Try to engage the imaginations of those involved first to bring this future to life. See also the section about games and role-playing below.

2. How did this future scenario world develop? Develop the **timeline** from the future world imagined in the previous step to the present. This can be done by 'back-casting' – start with the future condition, then imagine the dynamics important at a time just before that, and a time just before that, and so on until the present is reached. Note: many of the insights of a scenario's relevance for the present are typically found in this development of a scenario narrative that connects futures to the present!

3. What does the scenario mean for various **variables of interest**? In this third step, develop the scenario in more detail by exploring what the scenario would mean for various concrete and specific key variables and indicators of interest to the project.

Figure 4.4 below shows the details of the four scenarios as envisioned by group 3 (consisting of representatives of the Dutch and British law enforcement organisations) that selected 'isolation' & 'the role of algorithms' as their axis. Isolation was further developed as "group isolation" and "individual isolation" and algorithms were differently understood as "privately owned" and publicly owned". The emerging scenarios then revolved around the consequences of privately owned algorithms in futures in which individuals would isolate themselves. The participants were subsequently asked to explain the different scenarios in detail [the other three were: privately owned algorithms in futures in which groups isolate themselves; publicly owned algorithms in futures in which individuals isolate themselves and publicly owned algorithms in futures in which groups would isolate themselves]

Algorithms are privately owned

-Companies target groups in favour of economic profit
- isolate a target
-Owners of algorithms enforce ideas - good&bad
-In-groups or out-groups could form
-Unequal access to peer-to-peer groups - this can be both good or bad
-New groups emerge to target and increase profits

-Individual's view might both narrow and widen in this scenario
-Personal branding: individuals make use of the structure
-Algorithms could be used to detect personal problems, e.g. mental health
-Space to develop a more personalised product and intimate tone

Groups isolate themselves ←——————→ **Individuals isolate themselves**

-Ideas become more extreme
-Groups use data to understand other groups, which couls alo create confusion and misunderstanding
-Groups use data to change their image vis-avis the government
-Algorithms can either increase or decrease isolation (by choice)

-Algorithms are used to profile - to prevent crime or to repress individuals
-Profiling leads to increased isolation and paranoia
-Government might also choose to isolate a group in order to increase group feeling
-The more individually isolated, the less useful algorithms are. In case of a vicious circle, anarchy might ensue.

Algorithms are publicly owned

Figure 4.4 The four scenarios related to 'Isolation' & 'Algorithms' [project workshop 2018]

Example of using scenario narratives

Verfaillie & Vander Beken (2008)[13] use scenario narratives to capture the complexity of organised crime and how this might develop in the years to come. In particular the level of detail that is captured in the narratives allows them to explore the complexity. The narratives are subsequently substantiated by hard data gathered from law enforcement sources, policymakers' decisions and contextual factors. In the end, this results in thorough and solid but still lively stories; in this case on proactive policing and the future of organised crime.

E. Use scenarios to experiment with capacities and strategies

Collaging and scenarios are only useful to security and law enforcement organisations if they critically examine the capacities and strategies of their organisations.

Testing present capacities: The gap between long-term futures and the focus in law enforcement on present-day problems can be resolved by using scenarios to investigate current capacities of these organisations. This can be done by using the scenarios (for future security threats) that were developed in order to imagine how the organisation could/should respond to each scenario. Helpful questions include:

• Where would present-day capacities fall short?
• Would there be time and resources to change and adapt to each challenge?

Different scenario contexts could be used for a high-level strategic conversation focusing on the main features of the organisation. But scenarios can also be used for in-depth and detailed reviews of organisational capacities – for instance by examining existing approaches and protocols step by step through the perspective of each scenario. Simulation gaming and role playing (see also below) can be particularly useful. **See Section 5 for more detail on how to engage your organisation with scenario-planning.**

Experimenting with new strategies aimed at shaping the future organisation: Next to the testing of present-day organisational capacities, scenarios are also commonly used for robustness-testing of new plans and strategies. This can be done as follows:

1. A draft strategy can be reviewed against various scenarios. Each scenario will highlight different strengths and weaknesses in the strategy, and will lead to different recommendations. The more diverse the sets of scenarios, the more diverse the recommendations for strategy improvement will be.

2. The next step is to compare results across all different scenarios and evaluate 1) what common weaknesses and strengths are identified across all scenarios; 2) which recommendations for strategy improvement come up across the different scenarios; and 3) which challenges and opportunities emerge only in very specific scenario contexts but are nonetheless valuable to consider for the revision of the strategy or plan.

Game and roleplaying approaches for strategy testing can be particularly useful given that the strategy in question is not yet implemented. When players take on antagonistic actor roles, implementation problems, loopholes and unintended consequences can surface. Similarly, when players take on new/future roles that are to be created as part of new organisational capacities, problems with the execution of future strategies can be identified.

Formulating plans in the context of scenarios

After having discussed and described the details of each scenario, the project workshop groups were asked to come up with a set of organisational strategies which law enforcement organisations would be able to employ in response to the threats inherent in each scenario. Group 3 [that worked with 'isolation' and algorithms' as shown above] formulated the following set of policies:

- Use algorithms to get insight into behaviour and predict behaviour
- Collaborate between public and private sector to prevent or reduce crime
- Stimulate communities in organising their own safety, so this is not just done by the government
- Prepare for different risk-groups that may use physical violence
- Antagonistic roles of government and people should shift to become more collaborative
- Influence the mindset of (dangerous) individuals

Role change: responding to plans

After discussing and determining the various scenarios in their own groups, one member of every group was requested to remain at their original table, while their partner moved tables. The remaining group member had to explain to a new partner all four scenarios and the responses that were formulated. This new partner then took on an antagonistic role, such as a criminal or terrorist, based on their own scenario set – in other words, not the scenario

set that the plan had been based on – and try to counter, circumvent, sabotage or otherwise deal with the plan proposed. These role-playing participants had to punch as many holes in the plan as they could – resulting in a new set of critiques that was often unanticipated by the maker of the plan, which was based on a different scenario set.

The goal of this exercise was to make it very clear to participants that *plans formulated in response to any one set of scenarios would still be vulnerable to threats coming from other sets of scenarios* – highlighting the need for flexibility in strategies; and the need for exploring many diverse futures.

The guest at Group 3's table had the following additions and points of critique:

- Not everyone can be influenced as easily, but these measures assume so.
- There is sense of inequality in the battle of the individual against algorithms.
- There is a real danger of criminals intentionally giving false information and make their behaviour look a certain way but do something else meanwhile. E.g. a lone wolf makes it look like he is joining a group.
- Education can either show algorithms as benign or evil – which to go for? Important in this strategy.
- Such a type of education could for example say: self-regulate so we don't need to – algorithms as a threat.

The exercise was repeated so that each strategy was 'attacked' by a player from a scenario set that had not inspired it.

Example

Biros et al. (2005)[14] give an example of the way in which organisational capacities can be tested further through simulation and practice. They use military scenarios to "stress-test" the detection of deception of law enforcement officials by criminals. After thoroughly testing organisational capacity to address the potential

futures emerging from scenarios or other futures methods, it is time to restructure the organisation accordingly. Buono & Kerber (2010)[15] provide a table that clearly outlines various options for restructuring an organisation to build its capacity for other future changes in dynamic fields such as law enforcement and security.

5. The Security and Law Enforcement Organisation:
Change and Capacity Development?

The creative collage making discussion with the Dutch and British law enforcement participants, also raised questions about the organisation. A key feature concerned how security organisations and their leadership can be brought on board for more radical and longer term future scenario-planning. The 'word cloud' from the focus group discussion below shows organisation came up quite frequently:

Figure 5.1. Word cloud focus groups The Hague [in Dutch] (2017)

So, what are the main organisational issues and how can these be addressed?

The project identified the following problems of law enforcement organisations:

- The world moves faster than the adaptive capacity in law enforcement and security organisations

- Police forces and law enforcement (and legal systems) are mainly reactive

- Profiles for personnel are decided beforehand, there is little room for surprising hires – a huge HRM issue. Do we have the 'right brains' in the organisation?

- What is our role when we no longer need analysts (due to technology)?

- Current managers/leaders are no longer 'fresh'; they have moved through the organisation and are 'socialised', can no longer think outside the box.

- Perhaps we should have 27 year olds in leadership roles?

- Everything takes too long (from ideas about the future to getting to action).

Figure 5.2 below shows an important insight that emerged from the project – that scenarios can be used not only to investigate an organisation's formal structures, systems, and capacities but particularly its informal 'structures'. It was considered very useful by the Dutch and British representatives of law enforcement organisations as well as researchers to use scenarios to investigate those informal aspects; the ones that are 'below the water' in the organisational iceberg – work relationships, culture and morale, power and politics, norms, attitudes, values, and motivations.
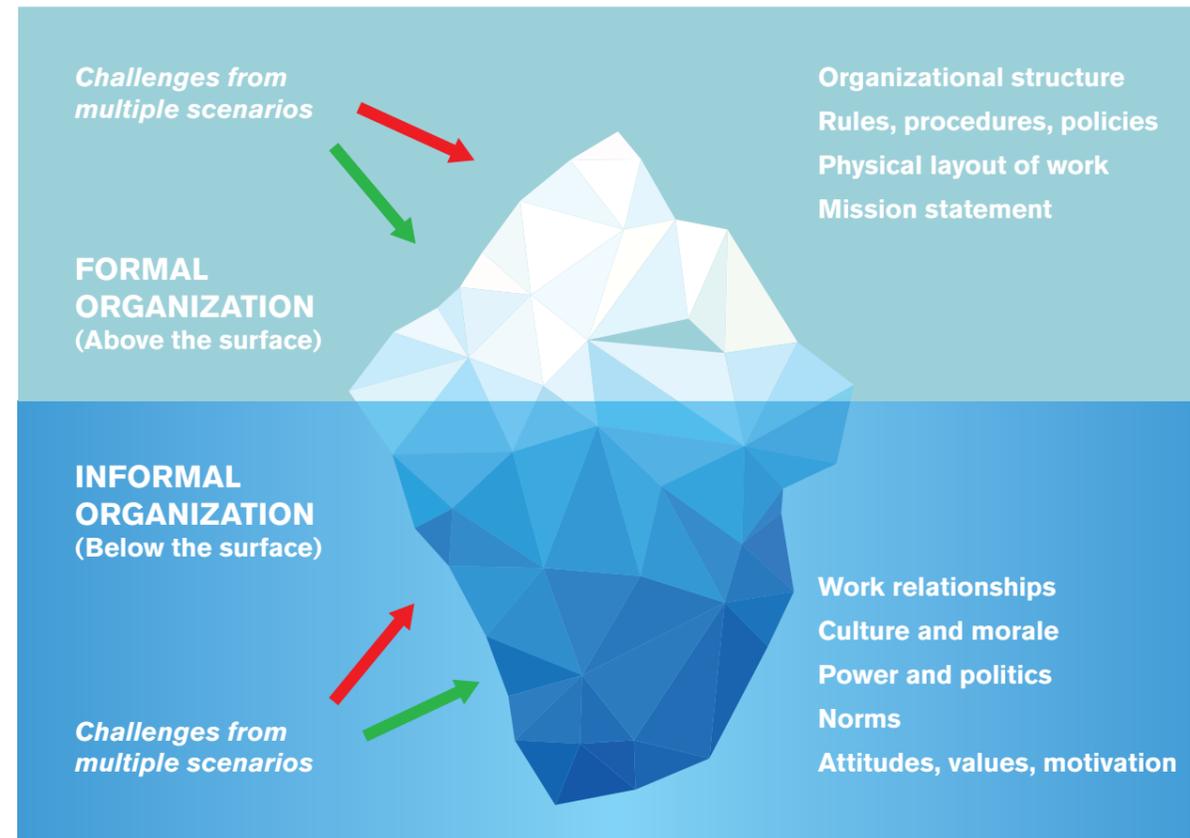

Figure 5.2 Scenarios can challenge formal and informal levels of the organisational iceberg. Scenario challenges added to slide from key-note speaker Prof Cliff Oswick (Cass Business School, London) at Project End Conference 2018 (the slide is adapted from Selfridge and Sokolik (1975)).

Change in organisations is never an easy task; change in security and law enforcement organisations is considered particularly challenging due to their long established bureaucratic and hierarchical culture and set ways of 'doing things'. Furthermore, many of today organisations have Millennials (born in the 1980s & 1990s) and Generation Z (1995-2010) as staff; are currently leadership style and organisational practice fit for purpose?

The keynote presenting by Prof Cliff Oswick offered important tools to think about these organisational questions.

"For traditional employers, Millennials pose new problems. Command-and-control is out. Having grown up with constant feedback from parents and teachers, they want dialogue, not orders, and a world of work that offers more opportunity and less hierarchy, and always new ways of doing things." (Davidson, 2014)[16]

Key suggestions to start the process of working on the adaptive capacity (and organisational development) include 1) a move towards dialogue, 2) the use of appreciative inquiry in the organisation and 3) looking for alternatives to strong leadership.

1. A dialogic approach
[from diagnostic to dialogic]

OLD (DIAGNOSTIC) OD	NEW (DIALOGIC) OD
Scientific	Generative
Problem-centred	Solution-driven
Reactive & Linear	*Proactive & Rhizomatic*
Punctuated & Discrete	*Complex & Emergent*
Concrete & Tangible	Abstract & Intangible
Top-down	*Multi-directional*

Figure 5.3 Old and New Organisational Development Approaches Presentation Cliff Oswick [Project End Conference 2018]

This new dialogic organisational development direction highlights some pertinent elements that are well-suited to work with multiple scenario planning: its generative, emergent and multi-directional features seem a good fit.

"I think the collage thing is perfect dialogic technique, so I think it fits really well." (Cliff Oswick at End Conference, 2018)

2. Use of appreciative inquiry

Although not new, it has many aspects that for instance suit millennials in organisations; it is also very much concerned with envisioning, dialoguing and innovating. A good start is asking: "what does everyone in the organisation feels good about or is committed to?" See Figure 5.4 for details.[17]

APPRECIATIVE INQUIRY
• Appreciating and Valuing the Best of "What is"
• Envisioning "What Might Be"
• Dialoguing "What Should Be"
• Innovating "What Will Be"
• Basic Assumption: An organisation is a mystery to be valued and explored

Figure 5.4 Appreciative Inquiry; Presentation Cliff Oswick [Project End Conference 2018]

6. More Approaches
(Appendix)

3. Beyond strong leadership [from top-down to distributive leadership]

It is not about being against leadership or hierarchy; it should be about "thinking of occasions we need to actively suspend it in organisations, just for a short period of time, to create space, to do some stuff, whether it's future scenario planning in organisational change, or whatever it may be, for some fixed stuff" (Cliff Oswick at End Conference, 2018). Oswick highlighted that is also about: involving people who want to be involved; there has to be shared purpose and its should be a positive change (as that is when people will come on board). There is clearly a move away from transactional to relational leadership and management which will unleash creativity and innovation; a much desired feature for law enforcement organisations in their important task of addressing (and tackling) future security threats! See figure 5.5 for all the details.

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Dominant Approach – Emergent Approach

- Power through hierarchy – Power through connection
- Mission and vision – Shared Purpose
- Making sense through rationale argument – Making sense through emotional connection
- Leadership-driven (top down) innovation – Viral (grass-roots driven) creativity
- Tried and tested, based on experience – 'Open' approaches, sharing ideas, co-creating change
- Transactions – Relationships

</div>

Figure 5.5 innovation, management and change; Presentation Cliff Oswick [Project End Conference 2018]

We would like to end this report with a comment by our key-note speaker Neil Walsh and we can only hope his remark will find resonance in your organisation(s)!

"Your toolkit if that's out there … it is a sort of thing that really helps us and helps governments around the world to make decisions … what you have done in this, it has a really important part in the play." (Neil Walsh, UNODC, Project End Conference 2018).

Games: tools for practising, experimentation, simulation

This report proposes that in the use of foresight in the context of law enforcement and security organisations, the focus should be on practising and experimenting with the future. We have introduced ways to create future scenarios as conditions for such practising and experimentation. Simulation games can serve as a next step – for interactive engagement with these futures. Gaming approaches are especially useful for the evaluation of present-day capacities if there is an interest in generating uncertainty and challenge by having people play antagonistic roles, and/or if there is an interest in creating simulations that help investigate how various individuals and teams would actually respond to different scenarios.

Games have a history in policy and planning, including military contexts and games share many of the analytical and/or experiential benefits of modelling and scenarios. What is unique about games in the context of strategy and planning is their focus on subjective actor perspectives, and on rule systems. These unique traits mean that game players can step into different roles and interact with others and the game, exploring the consequences of policies and strategies.

However, when players can only play set roles within games pre-designed by experts, games have important limitations as a tool for investigating systems of governance. A finished game has a specific 'procedural rhetoric' – the game rules explain how the game designers have conceptualised the systems that the game seeks to represent and the players can only accept and act within this pre-designed system. By contrast, when game co-design, rather than game play alone, is used as a method for inquiry and experimentation between diverse actors, this can lead to a process of actively questioning how current and potential future systems work. *What are the rules, roles, responsibilities and relationships in the system that the game is representing? And what happens when the rules and roles are changed to try to make a system (such as a security or law enforcement organisation) more adaptive?*

Though games as simulations to practise with the future offer unique possibilities to experiment both with rules and roles, the former is the most complicated and time-intensive to do. However, 'open' interactive role playing with a group of people can be organised very easily. In such a process, a group of people simply take on different roles in a scenario and simulate how they would interact with each other. An open role-playing process in which a scenario is explored can create key insight into the challenges and possibilities created for law enforcement in each scenario from different subjective perspectives.

We would like to recommend that whatever purpose simulation games might be used for in a law enforcement setting, they should always be multi-player games or roleplays, rather than single-player games. The complexity offered by having multiple players interacting with each other, facilitated by different levels of game systems, is really invaluable.

Furthermore, we recommend developing a new game that is suited to a specific purpose, or alternatively have a very flexible game that can be adjusted and applied to different case studies in a similar context. Then, depending on the purpose of the foresight process, **we recommend the following approaches**:

1. Developing a game with a heavy focus on rules. This is mostly useful when rules and systems are the subject of investigation and testing, both in terms of finding problems with existing rules and systems and testing new proposed approaches. This could be a board game that is only rules-based, a board game that involves some decision making, a fully digital computer game, or a computer game that also involves real-world interaction between players.

2. Developing a game with a focus on role-playing, but with light rules to facilitate participation. This is mostly useful when the focus is on different actor objectives, interests and perspectives, but the players need some structure (like a game economy and win conditions) to be able to roleplay effectively.

3. Free-form role-playing, no rules: When the focus is on rapid exploration of actor perspectives in a given scenario and there is no time or need to develop interaction rules. In addition, this approach is appropriate when people in the process feel comfortable with unstructured explorative role-playing.

In the example presented in this report, we used a light version of free-form role playing based on created scenarios to test different law enforcement strategies – see section 4.

Multi-driver scenario development

There are many other approaches to the development of scenarios next to those described in section 4 of this report. These approaches are often less accessible, but they have their own specific benefits. One such approach is to build scenario sets that integrate many different driving factors in a single set of scenarios[16]. The key advantage of such approaches is that if those creating scenarios are asked to consider unusual combinations of many different driving factors at once, the chance that they create truly novel futures is much higher. The drawback is that the creation of truly diverse driver combinations in a systematic manner often requires mathematical algorithms – because of tens of thousands of scenario possibilities exist in such multidimensional scenario sets, making the combination of drivers more of a black box process for those involved.

Using scenarios to identify weak signals of different futures in the present

An entirely different way to use future scenarios to guide present-day strategy is the use of future scenarios as filters for horizon scanning[17].

Horizon scanning is an approach that is used in many sectors, including law enforcement, to identify 'weak signals' of possible futures, for instance by trawling online media, technology websites and other sources of information. Weak signals are emerging trends and activities that could be indicative of where future developments may go – if these activities and trends scale up and out. The challenge with horizon scanning, however, is that there are no clear ways to filter and distinguish such weak signals without context. Colleagues at the University of Oxford have however researched the potential of combining scenarios and horizon-scanning for the following reason: scenarios can be used as future perspectives to try to filter and understand different weak signals that emerge from horizon scanning. Which weak signals correspond with which scenario? What might we learn about these weak signals and their potential interactions when evaluating them through different scenarios? Ramirez et al. (2015)[18] argue that because of this filtering capacity, future scenarios can also be used as narratives to capture the attention of organisational leadership. A list of weak signals may not signify much to leadership, but an analysis of how weak signals correspond to different narratives of the future produces more strategic insights.
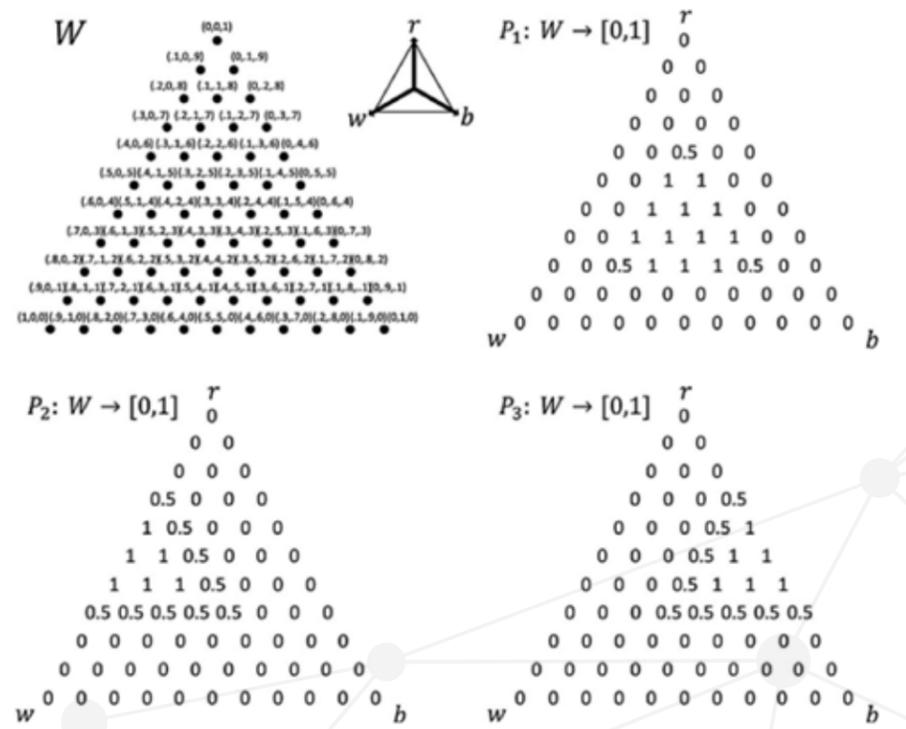
Figure 6.1 Triangles of values in a morphological analysis. Source: Lord et al. (2016: 25)

Scenario Planning (IL)

Pre-Scenario Development
• Define problem
• Identify focal issue
• Identify key uncertainties and driving forces
• Rank most important and uncertain factors

Scenario Development
• Derive themes
• Outline scenario logics
• Use systemic logic to build scenario narratives

Strategy Development
• Evaluate implications for strategy
• Derive robust, future-proof strategies
• Publicise scenarios and implement strategies
• Revise narratives and strategies as future unfolds

Horizon Scanning

Exploration
• Define problem
• Identify key issues, drivers and concerns
• Organise, prioritise and manage information
• Distinguish relevant issues for assessment

Assessment
• Interpret and relate evidence to key issues and concerns
• Evaluate the impact within an organisational context

Application
• Disseminate results to aid:
  - Foresight activities
  - Strategy/policy creation and revision
  - Decision making

Continue Exploration, Assessment and Application

Figure 6.2 Horizon scanning. Source: Rowe et al. (2017: 228)

7. References and Further Reading

There is a growing body of literature on futures methods and specifically on the methods outlined in this report. This list contains the key publications that were used for each section of this report, as well as further reading that goes beyond this report and into the foundations of futures work.

In-text references

1. Godet, M., & Roubelat, F. (1996). Creating the future : The use and misuse of scenarios. *Long Range Planning*, *29*(2), 164–171.

2. Walker, W. E., Haasnoot, M., & Kwakkel, J. H. (2013). Adapt or perish: A review of planning approaches for adaptation under deep uncertainty. *Sustainability (Switzerland)*, *5*(3), 955–979.

3. Schoemaker, P. J. H., & Tetlock, P. E. (2012). Taboo Scenarios: How to think about the unthinkable. *California Management Review*, *54*(2), 5–25.

4. Wright, C., Nyberg, D., De Cock, C., & Whiteman, G. (2013). Future imaginings: Organizing in response to climate change. *Organization*, *20*(5), 647–658.

5. Yusoff, K., & Gabrys, J. (2011). Climate change and the imagination. *Wiley Interdisciplinary Reviews: Climate Change*, *2*(4), 516–534.

6. Haasnoot, M., Kwakkel, J. H., Walker, W. E., & ter Maat, J. (2013). Dynamic adaptive policy pathways: A method for crafting robust decisions for a deeply uncertain world. *Global Environmental Change*, *23*(2), 485–498.

7. Vervoort, J. M., Bendor, R., Kelliher, A., Strik, O., & Helfgott, A. E. R. (2015). Scenarios and the art of worldmaking. *Futures*, *74*, 62–70.

8. Plakoyiannaki, E., & Stavraki, G. (2017). Collage Visual Data: Pathways to Data Analysis. *The SAGE Handbook of Qualitative Business and Management Research Methods: Methods and Challenges*, 313.

9. Eidinow, E., & Ramirez, R. (2016). The aesthetics of story-telling as a technology of the plausible. *Futures*, *84*, 43–49.

10. Walker, W. E. (1995). The use of scenarios and gaming in crisis management planning and training. *The Use of Scenarios for Crisis Management*.

11. Rockefeller Foundation (2010). Scenario report on technology and development. New York.

12. Picarelly, J. T. (2009). The Future of Terrorism: Predictions. *NIJ Journal*, (264).

13. Verfaillie, K. & Vander Beken, T. (2008) "Proactive policing and the assessment of organised crime", Policing: An International Journal of Police Strategies & Management, Vol. 31 Issue: 4, pp.534-552.

14. Biros, D. P., Hass, M. C., Wiers, K., Twitchell, D., Adkins, M., Burgoon, J. K., & Nunamaker, J. F. (2005). Task Performance Under Deceptive Conditions: Using Military Scenarios in Deception Detection Research. *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, *00*(C), 22b–22b.

15. Buono, A.F. & Kerber, K. W. (2010). Creating a sustainable approach to change: building organizational change capacity. *SAM Advanced Management Journal*, *75*(2).

16. Davidson, A. (2014). "How millennial are you?", Business Life, May, pp.18-21.

17. Lewis, S., Cantore, S., & Passmore, J. (2016). Appreciative inquiry for change management: Using AI to facilitate organizational development. Kogan Page Publishers.

18. Lord, S., Helfgott, A., & Vervoort, J. M. (2016). Choosing diverse sets of plausible scenarios in multidimensional exploratory futures techniques. *Futures*, *77*, 11–27.

19. Rowe, E., Wright, G., & Derbyshire, J. (2017). Enhancing horizon scanning by utilizing pre-developed scenarios: Analysis of current practice and specification of a process improvement to aid the identification of important 'weak signals'. *Technological Forecasting and Social Change*, *125*, 224-235.

20. Ramirez, R., Mukherjee, M., Vezzoli, S., & Kramer, A. M. (2015). Scenarios as a scholarly methodology to produce "interesting research." *Futures*, *71*, 70–87.

Further recommended reading

Scenario-planning

Abbott, C. (2008) An Uncertain Future: law enforcement, national security and climate change, Fride Comment.

Coates, J. F. (2000). Scenario Planning. *Technological Forecasting and Social Change*, *65*(1), 115–123.

Eidinow, E., & Ramirez, R. (2016). The aesthetics of story-telling as a technology of the plausible. *Futures*, *84*, 43–49.

Johansen, I. (2018). Scenario modelling with morphological analysis. *Technological Forecasting and Social Change*, *126*(February), 116–125.

Masini, E. B., & Vasquez, J. M. (2000). Scenarios as Seen from a Human and Social Perspective. *Technological Forecasting and Social Change*, *65*(1), 49–66.

McDermott, W. B. (1996). Foresight is an Illusion. *Long Range Planning*, *29*(2), 190–194.

McMaster, M. (1996). Foresight: Exploring the Structure of the Future. *Long Range Planning*, *29*(2), 149–155.

Oels, A. (2013). Rendering climate change governable by risk: From probability to contingency. *Geoforum*, *45*, 17–29.

Roubelat, F. (2000). Scenario Planning as a Networking Process. *Technological Forecasting and Social Change*, *65*(1), 99–112.

Selin, C., Kimbell, L., Ramirez, R., & Bhatti, Y. (2015). Scenarios and design: Scoping the dialogue space. *Futures*, *74*, 4–17.

Van Der Heijden, K. (2000). Scenarios and Forecasting. *Technological Forecasting and Social Change*, *65*(1), 31–36.

Van Notten, P. W. F., Sleegers, A. M., & van Asselt, M. B. A. (2005). The future shocks: On discontinuity and scenario development. *Technological Forecasting and Social Change*, *72*(2), 175–194.

Villacorta, P. J., Masegosa, A. D., & Lamata, M. T. (2013). Fuzzy linguistic multicriteria morphological analysis in scenario planning. *Proceedings of the 2013 Joint IFSA World Congress and NAFIPS Annual Meeting, IFSA/NAFIPS 2013*, 777–782.

Wilson, I. (2000). From scenario thinking to strategic action. *Technological Forecasting and Social Change*, *65*(1), 23–29.

Organisations/law enforcement

Burnard, K., & Bhamra, R. (2011). Organisational resilience: Development of a conceptual framework for organisational responses. *International Journal of Production Research*, *49*(18), 5581–5599.

Hogeboom, H. (2014). Toekomstonderzoek binnen de Politie; Focus op Feiten of Fictie?

Creative methods

Butler-Kisber, L. (2008). Collage as Inquiry. In Knowles, G. and A. Cole (Eds) Handbook of the Arts in Qualitative Research. Sage Publications, pp. 265-276.

Butler-Kisber, L., & Poldma, T. (2010). The power of visual approaches in qualitative inquiry: The use of collage making and concept mapping in experiential research. Journal of Research Practice, 6(2), Article M18. Retrieved [January 2019], from **http://jrp.icaap.org/index.php/jrp/article/view/197/196**

Gerstenblatt, P. (2013). Collage portraits as a method of analysis in qualitative research. International Journal of Qualitative Methods 12:294-309.

De Kock, P. (2014) Anticipating Criminal Behaviour: Using Narrative in Crime Related Data, PhD Thesis Tilburg University

Van Hulst, M. (2017). Backstage storytelling and leadership. Policing: A Journal of Policy and Practice, 11(3), 356-368.

Van Hulst, M. (2012). Storytelling, a model of and a model for planning. Planning Theory, 11(3), 299-318.

From presentation Cliff Oswick:

http://www.nhsiq.nhs.uk/resource-search/
publications/white-paper.aspx

http://www.valvesoftware.com/company/Valve_
Handbook_LowRes.pdf

Bevan, H., & Fairman, S. (2014). The new era of thinking and practice in change and transformation: a call to action for leaders of health and care. United Kingdom NHS Improving Quality. Leeds: UK Government White Paper.

Heimans, J., & Timms, H. (2014). Understanding "new power". *Harvard Business Review*, *92*(12), 48-56.

Selfridge, R., & Sokolik, S. (1975). A comprehensive view of organizational management. MSU Business Topics, 23(1), 46-61.