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Annex A: Case study protocol

This protocol provides more detail on the data collection of the case study. The protocol consists of four parts. First it operationalises theory to interview questions. Second, the interview questions are listed. The third part explains how the data is managed.

A1. From theory to questions

As mentioned in Chapter 5 the interview questions consist of two sets. Set 1 consists of questions regarding the complex intelligence environment as experienced by military intelligence professionals. This environment, or rather the entities that shape it, is examined with the characteristics of self-organisation, emergence, non-linearity and adaptation. The second set of questions is on how intelligence is organised within MNC NE, represented by the intelligence cycle and intelligence theory.

To formulate questions based on these theoretical concepts, they need to be operationalised. The questions regarding the operational environment (set 1) are operationalised and formulated based on the four characteristics of complexity and is grounded in Chapter 4. Self-organisation is operationalised with the concept of the edge of chaos as explained by Waldrop: a stable, yet temporary, position 'where the components of a system never quite lock into place, and yet never quite dissolve into turbulence, either'.⁶³⁰ Emergence is about phenomena that constitute radical novelty; they never occurred before, nor are they predicted. These characteristics of emergence, borrowed from Page⁶³¹ and Goldstein⁶³², form the question on emergence. Non-linearity means a small change in input can create large effects. Furthermore, simple interactions can lead to complex patterns and vice versa. As a result, exact predictions are impossible. These properties of non-linearity, described by Capra and Luisi, form the basis for the questions on non-linearity.⁶³³ Lastly, adaptation is operationalised with schemata (as introduced by Gell-Mann); mental

⁶³⁰ Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos*, 12.

⁶³¹ Page, *Diversity and Complexity*, 25.

⁶³² Goldstein, "Emergence as a Construct: History and Issues."

⁶³³ Capra and Luisi, *The Systems View of Life: A Unifying Vision*, 105.

frameworks that organise data to understand the world.⁶³⁴ These mental frameworks develop through co-evolution, a good concept to explain adaptation as an active process and not as a single and isolated cause and effect.

The second set of questions addresses the intelligence cycle and intelligence theory. To operationalise these questions Chapter 2 is re-visited. Questions about the intelligence cycle draw from the debate on the cycle. The questions are formulated along the main point of critique; the sequential and linear nature of the cycle. Regarding the topic of intelligence theory, respondents are asked questions on how they see intelligence. Is it about objectively and independently ascertaining the world of threats where causality can be observed, or if they emphasise interpretation, bias, context and uncertainty in trying to understand the environment. In other words, if they adhere to the positivist dominance of 'telling truth to power' or show postmodern features regarding the relativity of truth. Combining both sets of questions will reveal if the gap from Chapter 3 between an increasingly complex environment and an intelligence system that is lagging behind in adaptation is reflected in the case study as well.

The first few interviews revealed many alignment problems internally in the intelligence organisation and externally between the intelligence organisation and the corps and NATO. The respondents, while talking about many different topics, indicated that alignment problems were a big concern. This volume of data on alignment issues was too large to ignore and therefore the data collection was expanded by adding questions on this topic.

A2. List with interview questions

The interview questions are listed in the following sections. The list consists of the questions derived from theory, with the addition of a general introductory question for both sets of questions. Within brackets the related operationalisation concepts are mentioned. A more complete overview of how the conceptual design is operationalised to case questions is presented in Annex B.

For administrative and introductory purposes the first question was always directed at current working position, background, experience, and national culture. Such as

⁶³⁴ Gell-Mann, *The Quark and the Jaguar: Adventures in the Simple and the Complex*, 25.

broad question was on purpose and served to probe the respondent's way of thinking. The other questions were about the research direction, and are listed below:

Set 1: Questions on operational environment

1. Could you describe operational environment and the challenges in understanding it? Please reflect on what the intelligence problem/requirement in this environment is.
 - *AOR & AIR/All*
 - *(f)actors, driving forces*
 - *Warfighting domains*
2. Was your operational environment in stable condition or constantly changing? [self-organisation]
 - *If it is constantly changing, are there temporary balances or is it changing all the time?*
3. Did you experience any surprise events, i.e. events that could not have been foreseen whatsoever, in your operational environment? [emergence]
 - *Black swan/grey rhino.*
4. To what extent were you able to establish cause and effect relations, and what challenges did arise in doing this? [non-linearity]
5. To what extent did the main actors in your AO changed their behaviour as a consequence of changes in the environment? [adaptation]
 - *(Russian, or other) armed forces/government/population.*

Set 2: Questions on the organisation of intelligence

6. Could you describe how your unit organises for intelligence and what the challenges are?

7. To what extent does the intelligence cycle represent the intelligence process in your organisation?
8. Is it a linear and sequential process or are there feedback loops and more interconnections? [main points of critique from debate]
 - *Is direction a one-time occurrence for an intelligence requirement or constant examination/discussion?*
 - *How much room for interpretation of the intelligence requirements is there?*
 - *What are the partners - military, civilian or otherwise - you cooperate with outside of the cycle?*
9. What possibilities are there to make adjustments and changes in the intelligence cycle? [intelligence cycle as cybernetic feedback loop without adaptation]
 - *Can the collection scope (type of sensors, sources and thematic focus) sufficiently cover all aspects of the intelligence problem?*
 - *Is there room to adjust the collection package?*
 - *Is there enough expert analytic knowledge to understand all aspects of the environment and data on it.*
 - *What are the challenges in adjusting to emerging intelligence requirements next to the standing ones?*
10. To what extent do you think your intelligence organisation is able to generate an objective understanding of the environment? [intelligence theory; is there an objective reality (positivist) or only perception (postmodern)]
 - *Do you see your work as telling truth to power?*
 - *How much bias is involved?*
11. To what extent was your intelligence organisation able to understand and assess the operational environment? [intelligence theory]

- *To what extent was the organisation able to measure aspects of the operational environment by means of metric and tables?*
 - *What frameworks do you use (intentions x capabilities x activities or ICA, joint intelligence preparation of the environment or JIPOE, etc.)*
 - *To what extent was the organisation able to predict the future status of the operational environment?*
 - *Prognostic intelligence vs descriptive & explanatory*
 - *Indication & Warning, scenario's.*
12. Could you reflect upon the different cognitive and cultural perspectives present in your intelligence section or division? Do they cover all the needs? Are they being managed? [law of requisite variety]
 13. Could you reflect on any collective effort across desks, branches and sections to come to an understanding of the environment? Competing perspectives? [sensemaking]
 14. Could you reflect upon learning processes in your section? Evaluation, Lessons Identified/Lessons Learned system, after action reviews? [learning organisation]

A3. Data management

The data collection, analysis and storage are done only by the researcher. Data collection consists of interviews, informal conversations, observations, and (insight into) documents. The interviews, conversations, observations and insights into documents are documented on paper.

Raw data consists of these notes on paper and their transcribed, digital versions, and documents retrieved during field research. The written notes and other hardcopy documents are stored by the researcher in a private archive. The transcribed digital notes and documents are stored on an encrypted flash drive. Coded data is done, and stored, with NVIVO on a laptop. Digital documents and coded data are also stored on a flash drive for back-up storage.

To protect the identity of the correspondents, their names are not be included in any of these stored files. Instead, the only file with their identity is kept on the encrypted flash drive for the duration of the research, and deleted a year after completion.

Annex B: Operationalisation of questions

Table 17 represents how the idea of talking with intelligence practitioners about their operational environment, and how it relates to the workings of their intelligence organisation, is operationalised to actual questions. The first column, conceptual design, depicts the two sets of questions directed at the operational environment and the organisation of intelligence. The second column lists the characteristics of complexity and the organisation of intelligence that are used to focus the questions. The third column mentions the theoretical basis of the characteristics, and what their locations in the chapters are. The fourth and fifth columns list the interview questions and their number.

In order to show an understandable depiction of this process, details are left out. The characteristics of complexity (column 3) have a broader theoretical basis than what is mentioned, but these descriptions are the most concise. Also the questions contained much more detail. These were mostly topics to drive the conversation and give an example to a respondent of what was meant, or to get a more granular answer. The intelligence paradigm, originally meant to operationalise questions but was moved to the data analysis, as mentioned in section 9.2 – is left in. This is done so that annexes B and C line-up and show a complete overview from the operationalisation of questions to the data analysis.

Conceptual design	Characteristics	Theoretical basis / location in chapters	#	Questions
		Broad and open question to probe respondents' way of thinking.	1.	Could you describe operational environment and the challenges in understanding it. Please reflect on what the intelligence problem/requirement in this environment is.
Operational environment	Self-organization	Edge of chaos: a stable, yet temporary, position 'where the components of a system never quite lock into place, and yet never quite dissolve into turbulence, either' (Waldrop, 1992). Section 4.3.1	2.	Was your operational environment in stable condition or constantly changing?
	Emergence	Phenomena cannot be deduced from their components, they exhibit radical novelty and are unpredictable (Page 2011 & Goldstein, 1999). Section 4.3.2	3.	Did you experience any surprise events, i.e. events that could not have been foreseen whatsoever, in your operational environment?
	Non-linearity	Small changes can create large effects, simple interactions can create complex patterns. Exact predictions are impossible (Capra & Luisi, 2014). Section 4.3.3	4.	To what extent were you able to establish cause and effect relations, and what challenges did arise in doing this?
	Adaptation	Schemata as frames of reference to understand and adapt to environment. Co-evolution as mutually influenced process (Gell-Mann, 1994). Section 4.3.4	5.	To what extent did the main actors in your AO changed their behaviour as a consequence of changes in the environment?
		Broad and open question to probe respondents' way of thinking.	6.	Could you describe how your unit organizes for intelligence and what the challenges are?
Organisation of intelligence	Intelligence cycle	Main critique debate: cycle linear & sequential. Section 2.2	7.	To what extent does the intelligence cycle represent the intelligence process in your organisation? What are the challenges?
		Own critique: cycle lacks adaptation and is more of a cybernetic feedback loop. Section 2.2	8.	Is it a linear and sequential process or are there feedback loops and more interconnections?
	Intelligence theory	Positivist-postmodern dichotomy regarding objective reality. Section 2.3	9.	What possibilities are there to make adjustments and changes in the intelligence cycle?
			10.	To what extent do you think your intelligence organisation is able to generate an objective understanding of the environment?
	Intelligence paradigm		11.	To what extent was your intelligence organization able to understand and assess the operational environment?
	Design properties	Requisite variety. For a system 'to be efficaciously adaptive, the variety of its internal order must match the variety of the environmental constraints' (McKelvey & Bolsoi, 2009). Section 4.4.1	12.	Could you reflect upon the different cognitive and cultural perspectives present in your intelligence section or division.
		Sensemaking. Structuring the unknown whereby attention is given to what is constructed, how and why this takes place, and what the effects are (Weick, 1995). Section 4.4.2	13.	Could you reflect on any collective effort across desks, branches and sections to come to an understanding of the environment?
		Organisational learning. The relation between acquiring new knowledge and the actions that follow from it (Freeman, 2007). Section 4.4.3	14.	Could you reflect upon learning processes in your section?

Table 17: Operationalisation of interview questions.

Annex C: Data analysis

Table 18 depicts the analysis of the empirical data according to the Gioia method. The first column represents the terms used by the respondents. The second column shows the themes the research used to confront the empirical data with the theory. The third column shows how the first and second order analysis tie back into the conceptual design.

Table 18 is more of an impression than a complete overview of the data analysis. As mentioned in Chapter 5, the data analysis is done in NVivo. Displaying all terms, themes, and the data they represent, is too much to present in an understandable manner here.

First order terms (respondent-centric)	Second order themes (knowledgeable researcher)	Aggregate dimensions
Peacetime / grey zone / Article 5 Exercise mode versus reality. National versus NATO interests.	Self-organisation Emergence Non-linearity Adaptation	Operational environment
Intelligence cycle (direction, collection, processing / analysis, dissemination)	Intelligence cycle as missing procedure. Proceduralist / conceptualist	Organisation of intelligence
Bias / different (cultural) perspectives	Positivist / postmodern	
Prediction / prognosis	Telling truth to power / objective reality	
Products, methods	Reflexive, metrics Relativity of knowledge	
Inference Known unknowns / unknown unknowns	Intelligence paradigm Clear, complicated, complex, chaos, confused.	
Feedback Alignment issues: Coordination, exchange of intelligence Interoperability (of communication systems) Direction and guidance,	Design properties (requisite variety, organisational learning, sensemaking)	

Table 18: Data analysis: terms, themes, and dimensions.