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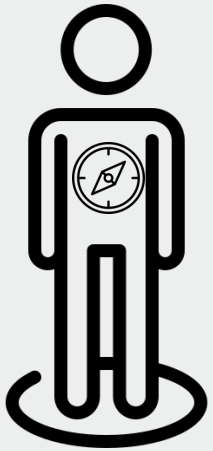
”It’s a gut feeling”

– using wargaming and simulations to support natural decision-making skills



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WHY

…. this presentation?

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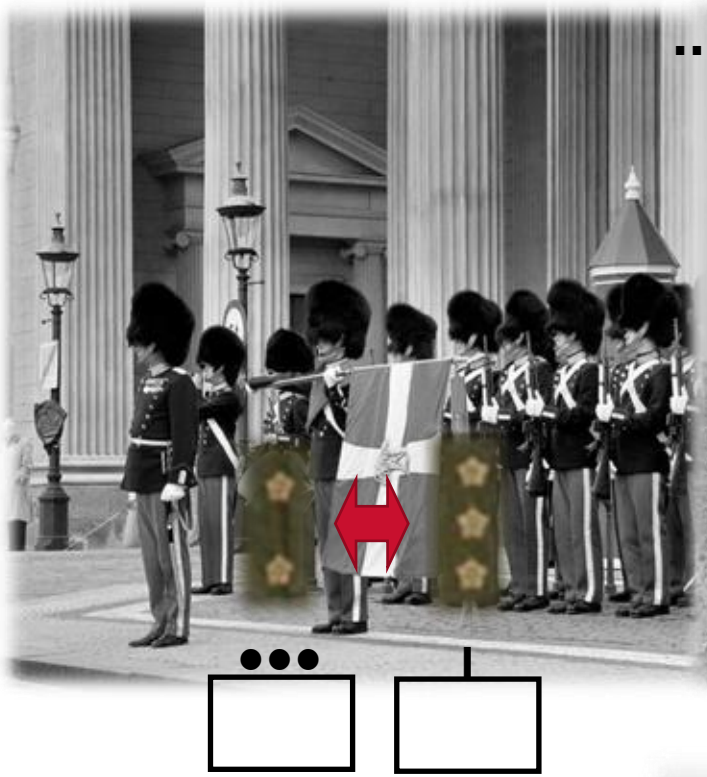
Reflecting on own experience…



… as a commander

… as a staff officer

… as an instructor

Military doctrine describes rather lofty ideas about the commander's use of judgement, experience, or intuition but then quickly prescribes procedural matters on how to plan or manage military operations. (Sjøgren, 2022)

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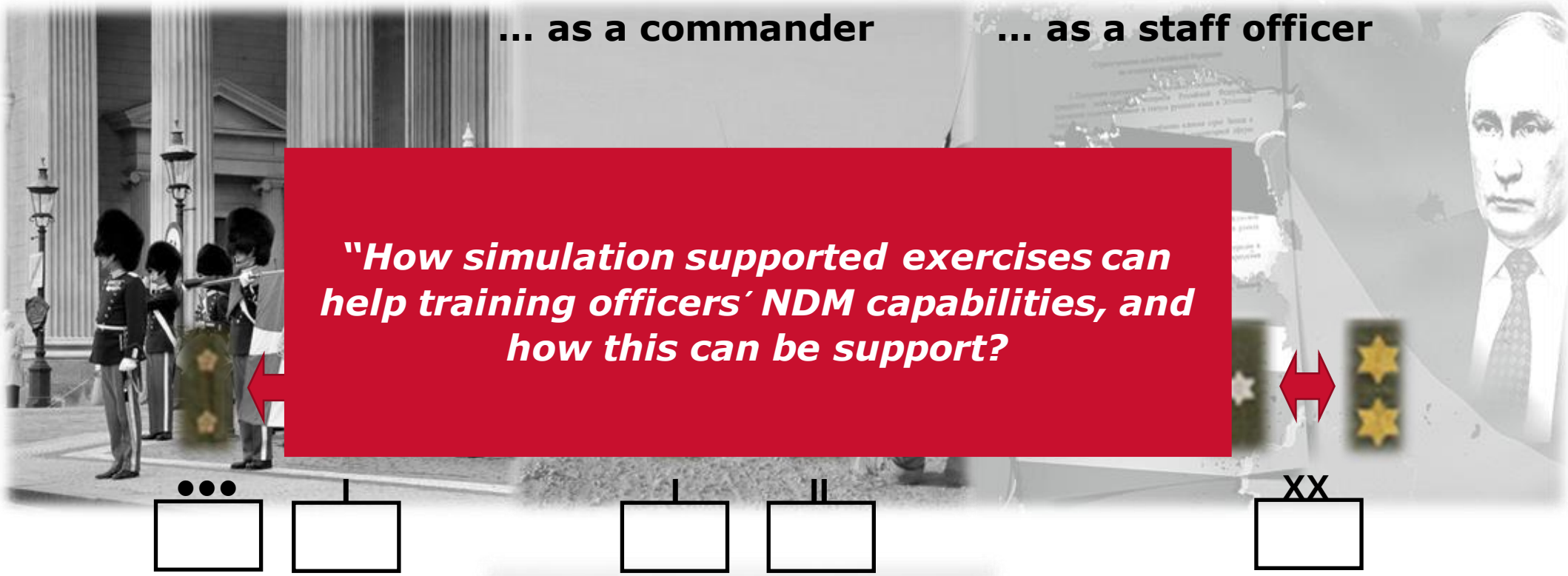
Reflecting on own experience…

… as a commander

… as a staff officer



"How simulation supported exercises can help training officers´ NDM capabilities, and how this can be support?

… as an instructor

Military doctrine describes rather lofty ideas about the commander's use of judgement, experience, or intuition but then quickly prescribes procedural matters on how to plan or manage military operations. (Sjøgren, 2022)

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Decision making in military education

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How can we teach leaders to make decisions…

"… when the tasks are compound, complex and unpredictable, and when they are also influenced by social and technical processes in several layers…

[when…] linear thinking falls short, and a different and more reflective awareness of the problem is required."

Donald Schön

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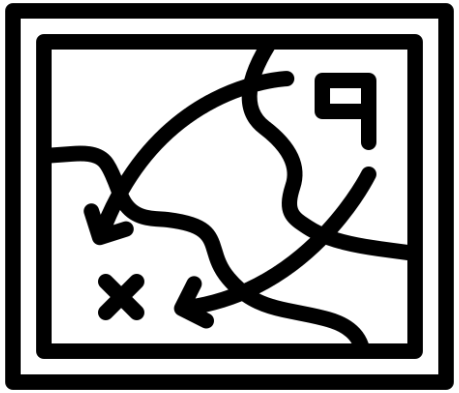
WHAT

…. are we talking about?

”Professional artistry” / operational art

“… the forms of competence that practitioners sometimes display in unique, uncertain and conflictual practice situations.” - Schön; Educating the Reflective Practitioner



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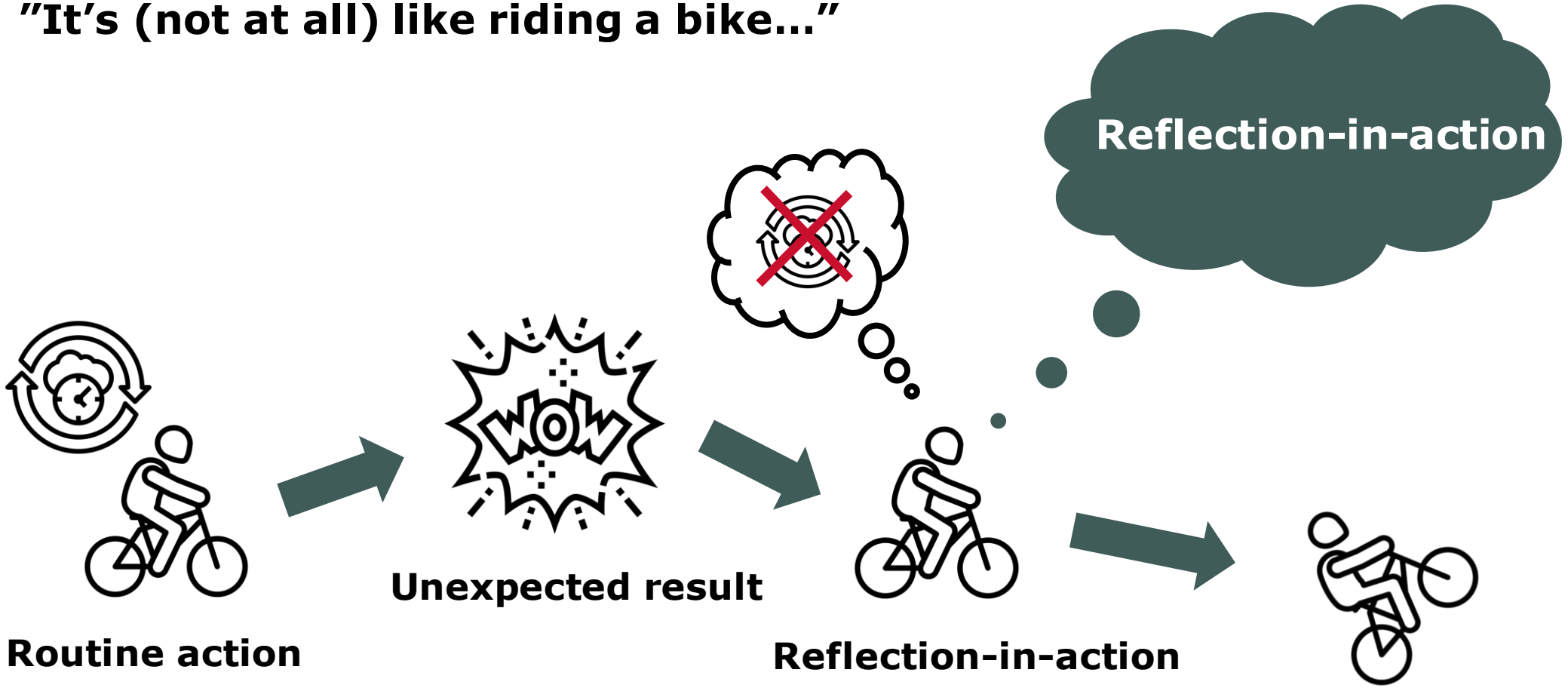
Reflection-in-action

"Reflection-in-action often has to do with the experience of surprise that arises when we are faced with complex and uncertain situations and issues"

Schön, 2001

”It’s (not at all) like riding a bike…”



Reflection-in-action

"Thinking on your feet"

- Reflecting as something happens
- Thinking ahead
- Reconstructing and analyzing
- Critically responding
- Acting immediately

Reflection-on-action

"Naval gazing"

- Reflecting after something happened
- New information gained and/or theoretical perspectives from study that inform the practitioners experience are used to process feelings and actions

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Naturalistic Decision Making

"The commander focuses the most attention on those decisions belonging to the art of war" (NATO ATP 3.2.2.)

Naturalistic Decision Making (Klein)

Research in NDM has shown that decision makers can use their experience to size up the situation, recognize it as typical in some ways, and identify the typical way of responding. Therefore, skilled decision makers may never have to consider more than one option. (Klein, 1993)

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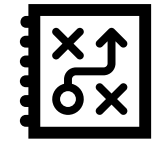
THE STRUCTURED APPROACH

1

Rational analysis

?

COA I ⟷ **COA II**



Delivers an optimal solution

✓ **Inexperience**

NATURALISTIC DECISION MAKING

2

Recognition of patterns

COA

Fast to deliver at least a satisfactory solution

✗ **Inexperience**

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THE STRUCTURED APPROACH

1

Rational analysis

?

COA I ⟷ COA II

Delivers an optimal solution

Inexpe

In practice, the two approaches are rarely mutually exclusive. … depends primarily on how much time and information are available and the experience of the commander and staff.
(NATO, 2016)

NATURA

2

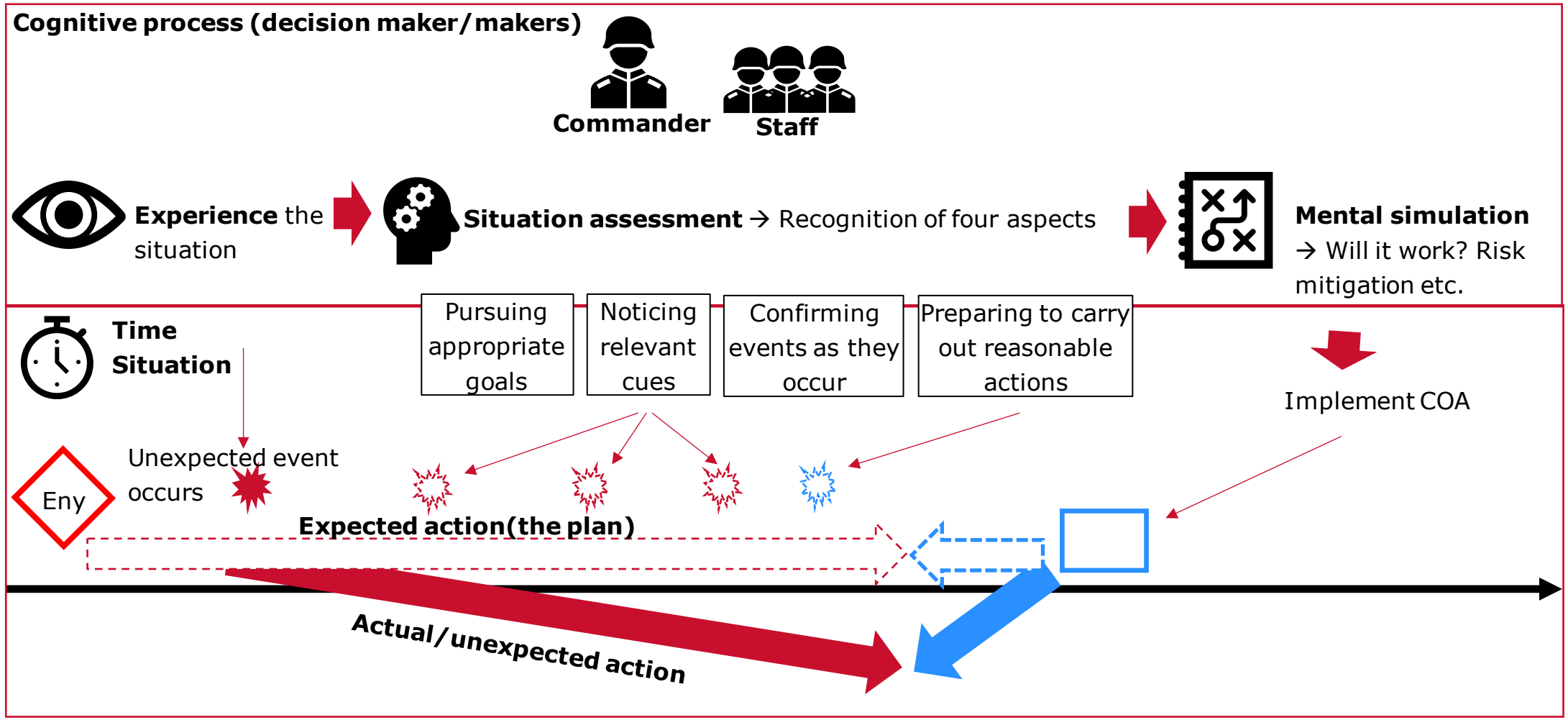
Recognition of patterns

COA

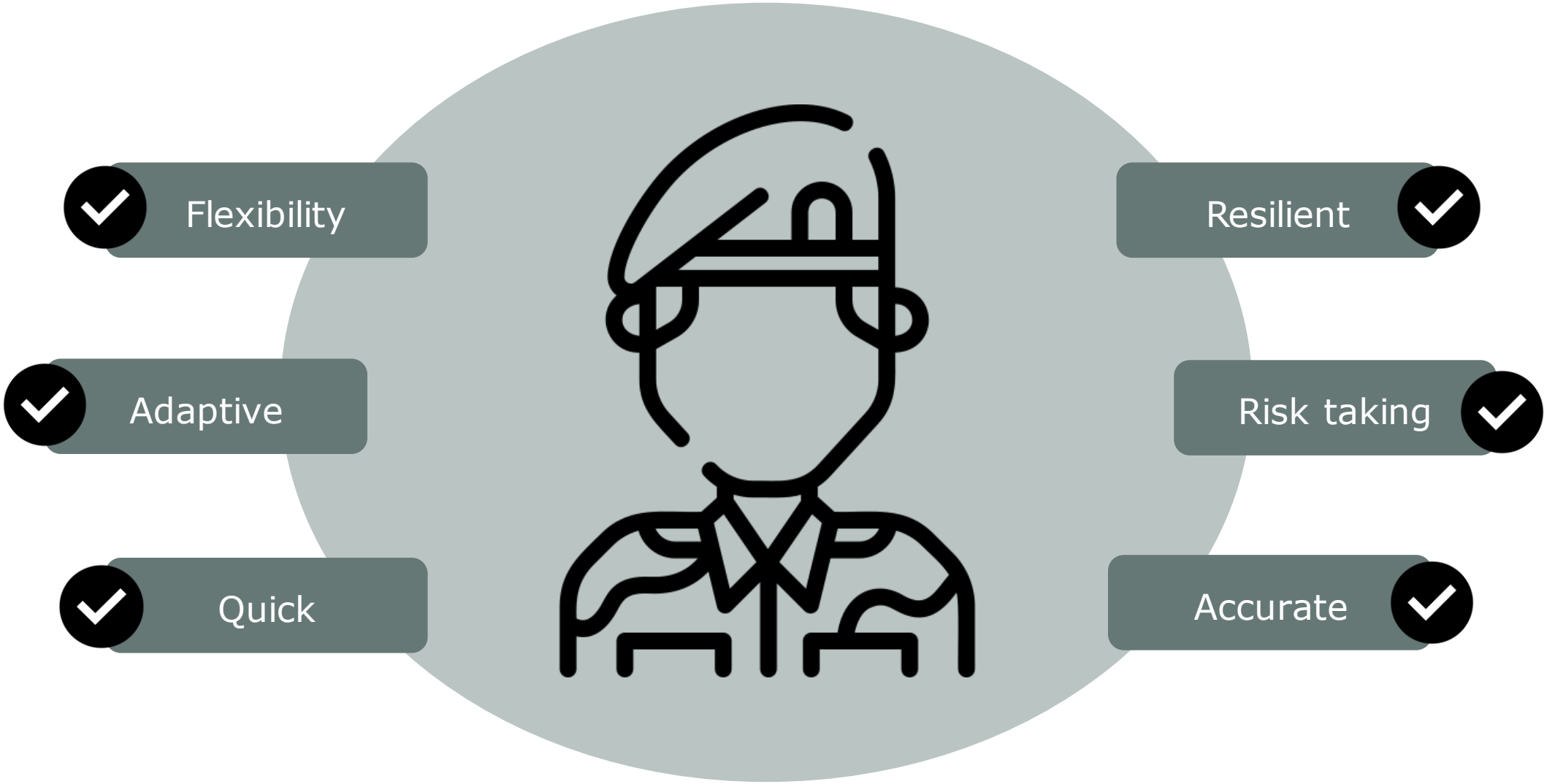
Fast to deliver at least a satisfactory solution

Inexperience

Naturalistic Decision Making (Klein) → Recognition-Primed Decision model



NDM


Flexibility
Adaptive
Quick
Resilient
Risk taking
Accurate

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WHAT

…. does it look like?

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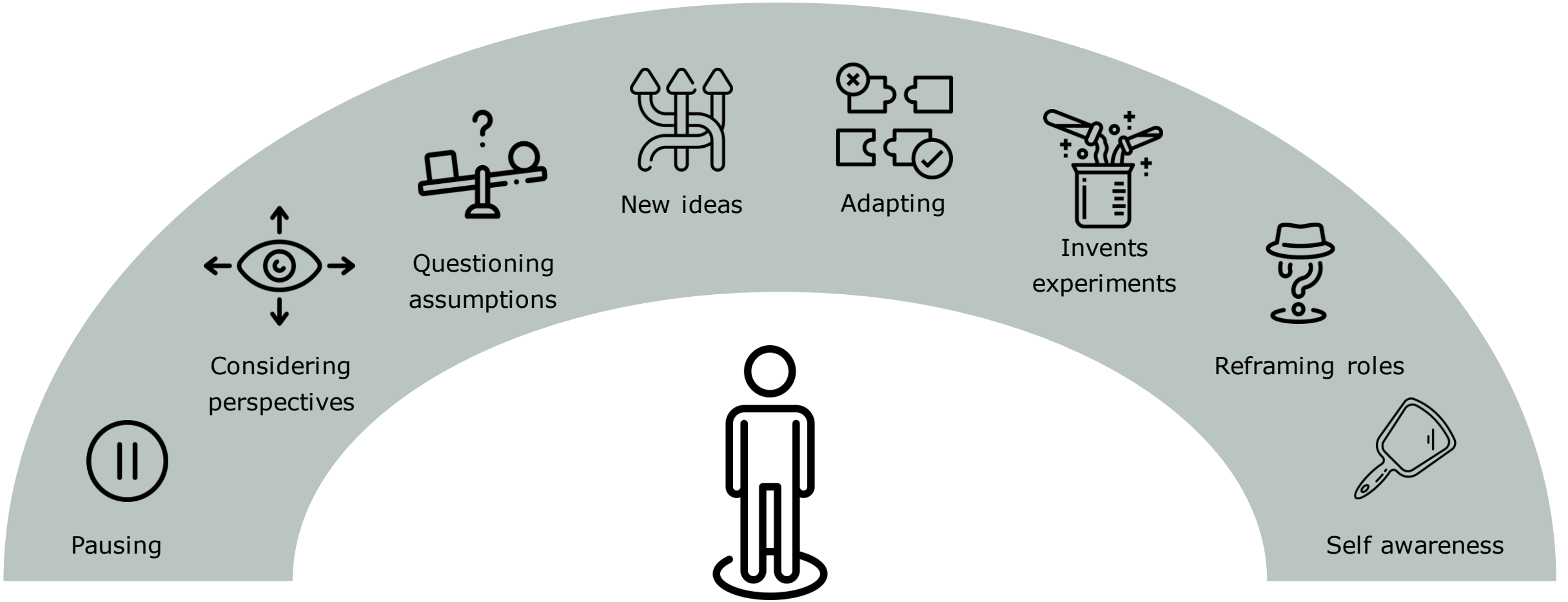
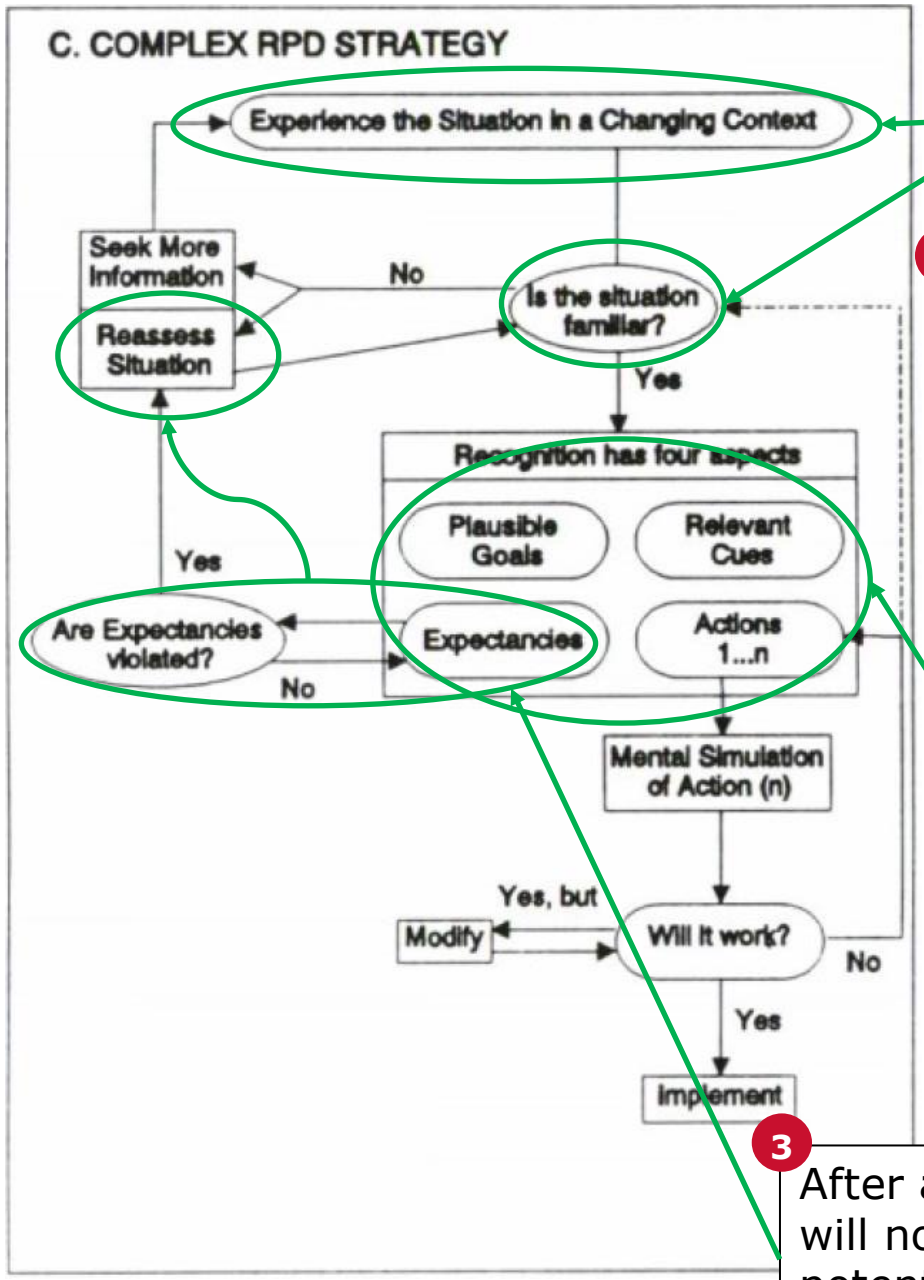
Signs of reflection-in-action

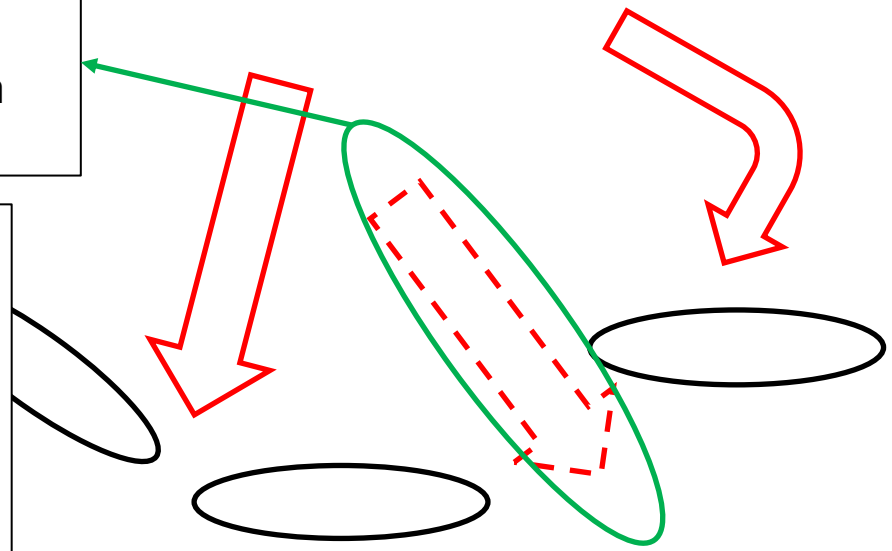


NDM in simulation based exercises



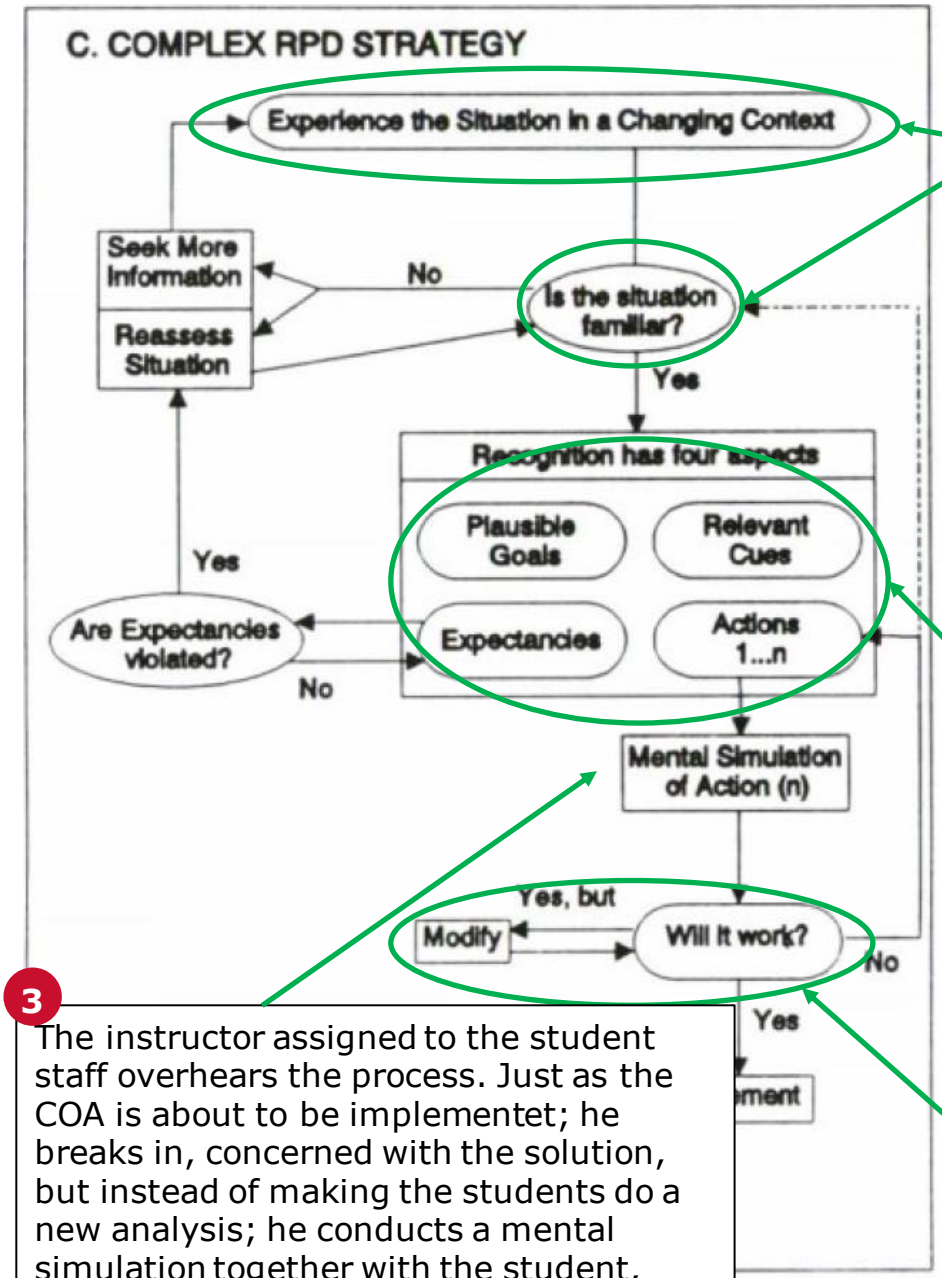
1 Imminent risk of eny break through in the Eastern part of the area defense.

2 The student (in role as commander) goes through potential eny intent and own goals wihtin the phase, while identifying cues to look for. Orders goes directly to ISR, and intell collection plan and decision lines are altered to facilitate.
A possible adjustment to the COA is identified by altering the tasks of the reserve in the phase but not yet ordered to the units.

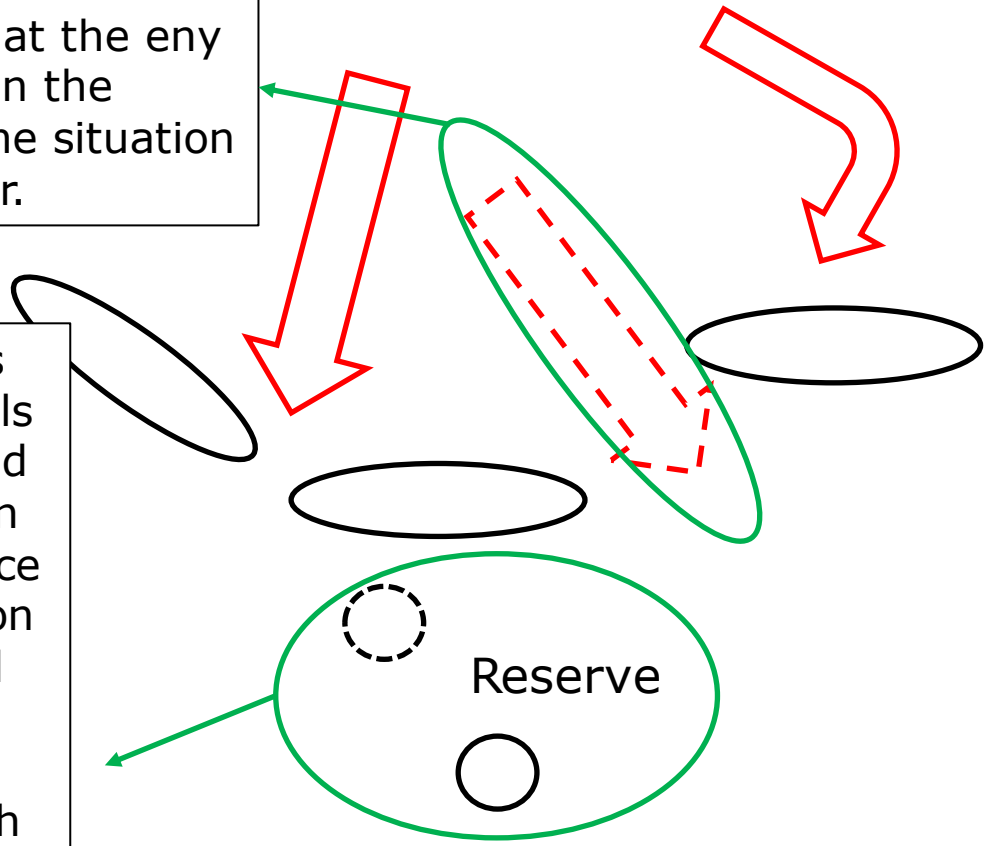


Reserve

3 After a short period of time, the staff experiences that the action will not sufficiently counter the threat in width, as the eny is potentially changing ME to the West (exspectancies are not met). The commander starts to reassessing the situation.



1 The development in the situation suggests that the eny is breaking through in the Eatern part, whilst the situation in the West is unclear.



2 Based on the previous reassessment the goals and intent remains and the staff now builds on the previous experience and develops a solution where the reserve will change position to enhance the abliity to quickly counter in both directions.

3 The instructor assigned to the student staff overhears the process. Just as the COA is about to be implementet; he breaks in, concerned with the solution, but instead of making the students do a new analysis; he conducts a mental simulation together with the student, while applicating his experience and showing the optimal adjustments.

4 The student (in role as commander) run through the chosen COA and determines that it will work, but a slight change to the location of the new assembly area is needed (Modify).

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HOW

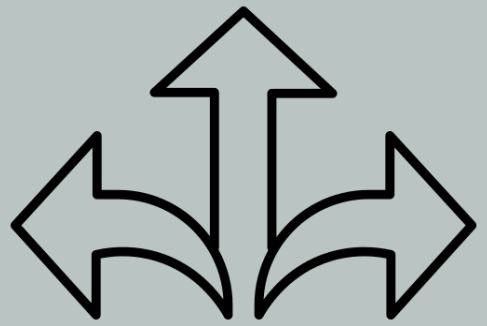
…. can we support it?

Practicum!

"Reflection-in-action can be supported when we carry out projects that simulate and simplify practice [...] or participate in real working life with close guidance."

WARGAMING

SIMULATIONBASED EXERCISES



APPRENTIENCESHIP/ MENTORING

Simulation based exercise

Prior to..

Doctrinal +
Leadership lessons →
understand NDM-theory and doctrin

Safe to fail environment –
Honesty is vital

Planning → Focus on the structural approach

During..

Executing the plan →
embrace the fog of war

Live feedback →
Reflection in Action

Pause is needed →
but don´t force the stuctural approach as it can potentially block the NDM process

After..

After action review →
Reflection on Action

LI/LL process

Tactical discussions (Both on tactics and decision making) (possibly based on recordings)

Wargaming

" Wargaming is a scenario- and game-based method, based on conflict between fighting parties, which does not involve the use of real forces.

The goal of the method is to offer the players experience with and the opportunity to explore decisions and actions within military operations,

where the course of the game shapes, and is shaped by, the players' decisions."

BREAK DOWNS

SUPPORTIVE MEASURES

FEEDBACK

WIN/LOSE

SAFE-TO-FAIL

MODES

CONTIGENCY AND RECIPROCAL ACTIONS

COLLABORATIVE LEARNING

FRICTION

Apprenticeship

- On-the-job training with an expert
- Expand/deepen knowledge
- Share experience and methode
- Gradually training all the skills
- Supervice

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WHAT

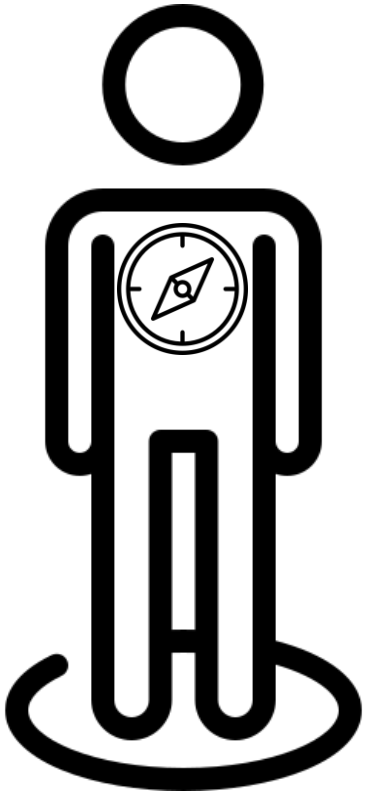
.... now?

Summary remarks

- Skilled military leaders most often work in a continuum of two different ways of making decisions. One of these decision processes takes place as reflection-in-action and can be explained using the theory of naturalistic decision making.

- Both reflection-in-action and NDM can be translated into signs of learning, observed and supported in learning processes.

- Because of their close connection to practice and ability to simulate unseen events, simulation-based exercises, wargaming (and apprenticeship) are especially useful when you want to train decision making in complex, uncertain situations.



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Want to know more? Please contact…

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