Ladies and gentlemen, good morning.

My name is Philip Matlary and I work at the Norwegian Military Academy where I teach tactics.

Last year I received a scholarship from the Norwegian Army and studied here at King's where I wrote a thesis on how to teach tactics.

Earlier this year I also completed a course on graduate level pedagogy.

During this presentation I will link contemporary pedagogical principles with wargaming.

Hopefully this will give wargaming supporters some other arguments than the usual ones concerning analytical simulations and quantitative data.

This can lower the threshold for implementing games that emphasize creativity, understanding and original thought.

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Teaching tactics

- USMC: 'We teach good judgement'
- Indicators of good practice
  - Wargaming *ticks* a lot of these boxes
- Tactics as a cognitive skill
  - Requires reasoning

This story begins during a study trip to Quantico and the UMSC schools there.

One of the first thing I was told about the purpose of the schools was that they "taught good judgement"

As the curious student I am I asked "how"? To which they had no real answer apart from completing their curriculum.

The USMCs teaching methods felt right, but why this was so was much harder to answer.

This is a familiar issue: Military teaching is usually based on anecdotal evidence or on incremental evolutions.

My contribution is a set of indicators to measure the quality of teaching, especially within tactics.

The findings might seem obvious to many, that's because good education feels right. The indicators, however, help explain this good feeling.

Before we proceed, I need to point out that I view tactics as a cognitive skill.

Since every battle is unique, the commander needs to apply reason in order to decide on his course of action.

Which battle drills to you use at what time and in what terrain?

So, how to teach a cognitive skill?

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Indicators

- Judgement
  - –Shaped and honed

$$\sum \begin{matrix} Cognitive\ Engagement \\ + \\ Feedback \end{matrix}$$

- Speed
  - –Verify intuitive decision-making
- Guile
  - –Break with norms and assumptions

Here are the three indicators I have identified.

First **judgement**,
Second **Speed**
and third **Guile**

I will now talk about each one in order, beginning with a quick lesson in pedagogy.

MP1

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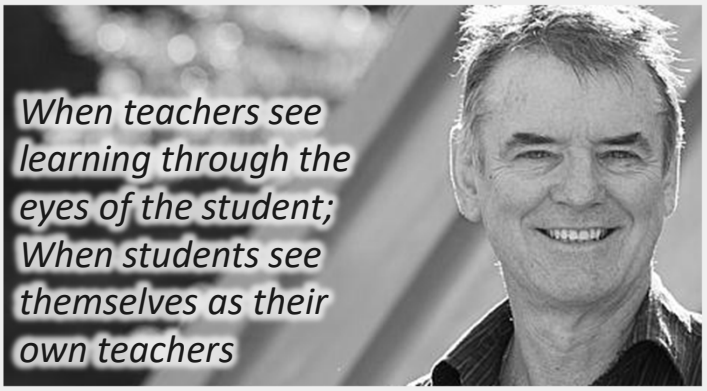
Pedagogy (condensed summary)

- Students teach themselves
  - Construct their own understanding
- Feedback
- Teachers must attend to what students are thinking
  - Design tasks that help students internalise knowledge
  - Enable cognitive engagement



Let me give you a condensed summary of contemporary pedagogical theories.

First, it is students themselves, in the end, not teachers, who decide what students will learn.

Let me explain with a metaphor:
A teacher cannot transfer knowledge like you would upload a picture to the internet. Students have to learn how to create this picture on their own.

Second, in order to understand whether the students are constructing their knowledge correctly, they need proper feedback. The more timely and objective this feedback is, the better.

This means that the purpose of teachers is to make tasks that help students construct their own knowledge.

John Hattie, a renowned Professor of Education from New Zealand, calls this triggering the students' cognitive engagement.

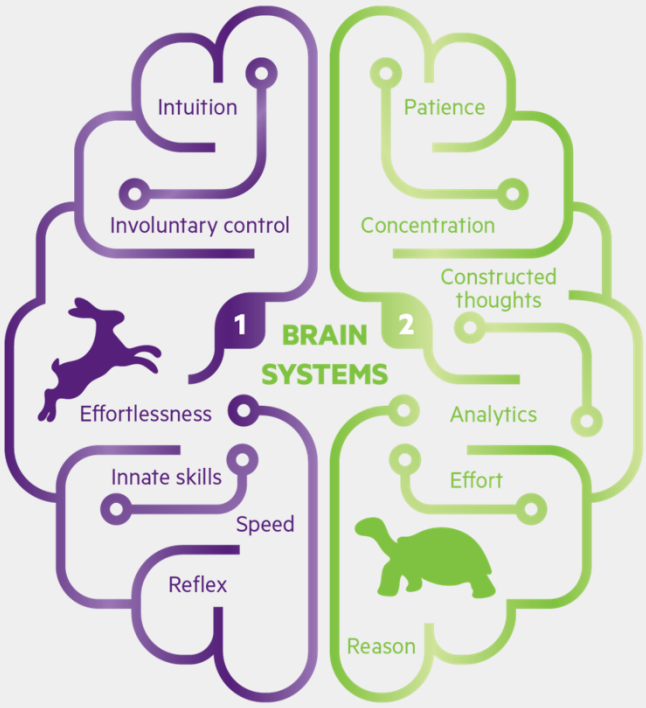
He sums his theory up in the following citation: When teachers see learning through the eyes of the student when students see themselves as their own teachers

To help understand what being cognitively engaged feels like, John Hattie says that it is when you experience "hurting thinking".

He equates this to Daniel Kahneman's cognitive process called "system 2 thinking"

Slide 4

MP1 Matlary, Philip, 01/09/2019



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Learning: Cognitive processes

- Learning a (cognitive) skill is to transform system 2 processes into system 1 processes
- System 2 = Cognitive engagement = 'hurting thinking'
- Time required for this is subjective although there are averages, e.g.:
  - Driver's license
  - Shooting skills

There is a scientific consensus that humans think in two manners: intuitively and analytically.

One acknowledged model is Khaneman's system 1 and 2 where the former is intuitive, and system 2 is analytical.

System 1 is **an** automatic, fast and often unconscious way of thinking. It is autonomous and efficient, requiring little energy or attention, but is prone to biases and systematic errors.

System 2 is **an** effortful, slow and controlled way of thinking. It requires energy and can't work without attention but, once engaged, it has the ability to filter the instincts of System 1.

Learning a skill, in our case a cognitive skill – tactics-, requires transforming system 2 processes into system 1 processes.

And as John Hattie underlined, it is by making students become cognitively engaged – or more crudely formulated: making them use "hurting thinking"

The time required to transform system 2 processes into system 1 is subjective, but there are averages, e.g.

Driving lessons with the driving instructors

Completing firing tables 1 through 20 will yield a certain quality soldier

This brings us to the first indicator

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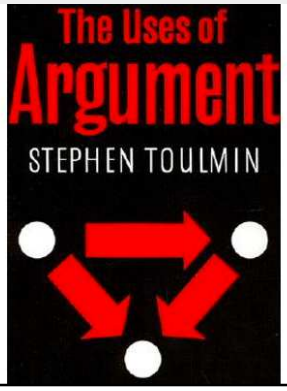
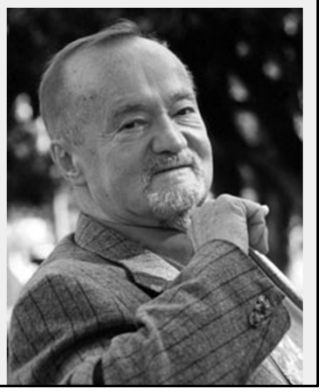
Judgement

- $\sum$ *Cognitive Engagement* + *Feedback*

- Cognitive engagement
  - (Socratic) questioning
  - Argumentation
- Feedback
  - Discussion
  - Visualisation





The first indicator of good teaching in tactics is an awareness in developing judgement

Educational methods should make students cognitively engaged – use system 2, and provide them with quality feedback.

Getting students into ”hurting thinking” can be done in many ways.

For example through Socratic questioning, where the student becomes aware of his knowledge through discussion with an adept teacher.

Or by using argumentation, especially in writing. Here, the student must justify his action with his own words and thus becomes aware of his own thoughts.

Arguments can also be visualised with for example Stephen Toulmin’s model so they become easier to take apart and discuss.

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Judgement

Shape

- Analysis of:
  - History
  - Experiences
  - Cases
  - …

Repetition

Judgement

Awareness/ visualisation:
- Argumentation
- Discussion
- Reflection

Hone

- Apply judgement through:
  - Tactical problems
  - Field exercises
  - TDGs
  - Wargames

Repetition

Within tactics, judgment is thus shaped through the repeated analysis of…

And it is honed by applying your judgement to various problems such as

On to the second indicator

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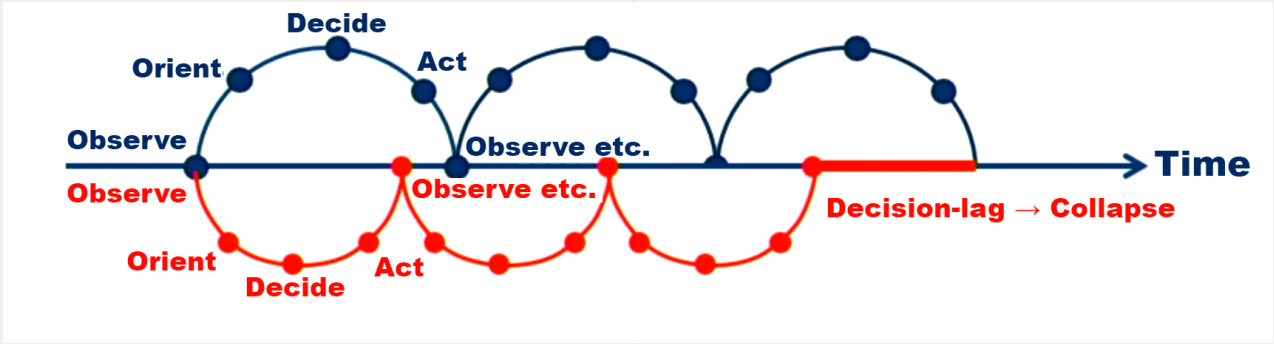
Maneuver Warfare

- **Speed in decision-making is essential**

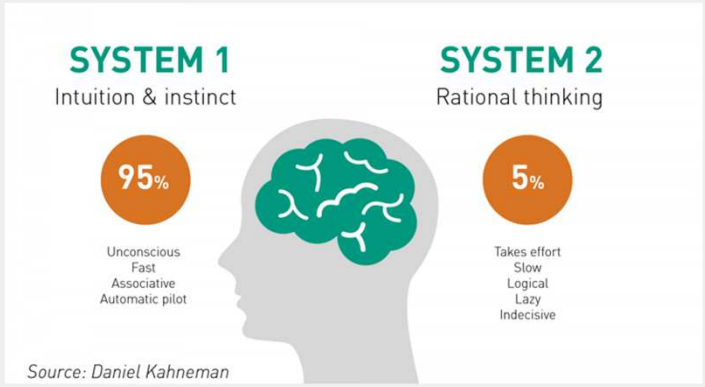
- Current doctrine for
  - USMC and Norwegian Army
  - NATO and British Army as the manoeuvrist approach



The second indicator involves speed.

NATO doctrine is the manoeuvrist approach. This doctrine decentralizes decision making and emphasizes speed. The goal is to decide faster than the enemy in order cause a moral collapse and reduce his will to fight.

However, quick decision making is intuitive decision making, and as we have seen, system 1 is prone to biases and systematic errors.



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Decision-making: Cognitive processes

- Intuitive decisions depend on experience
  - Heuristics = mental shortcuts
- Bias and systematic errors, e.g.
  - Confirmation bias
  - Cognitive ease
- Activate system 2
  - "What did you not choose?"
  - Verify intuitive solution

As the infographic shows, 95% of our decisions are made intuitively, and only 5% analytically.

This is because our mind uses heuristics. These mental shortcuts are efficient mental processes that help humans solve problems and learn new concepts. These processes make problems less complex by ignoring some of the information that's coming into the brain, either consciously or unconsciously.

However, these mental shortcuts are based on experience. Thus, the quality of intuitive decisions depend on your level of expertise

System 1 is also prone to bias and systematic errors, for example.

Confirmation bias: Confirmation bias is the tendency to search for, interpret, favour, and recall information in a way that affirms one's prior beliefs or hypotheses

Cognitive Ease: When we think we're right and when we feel certain, we experience a sense of cognitive ease. The world makes sense to us. And that puts us in a good mood.

Cognitive ease feels good, but it gives us a false sense of security because it makes us think we understand far more than we actually do.

In order to retain speed in decision making, we need to use the speedy system 1

decisions, but verify them with system 2

This is not a natural way of doing things. However it can be overcome with training.

BILDE

Onto the last indicator, and maybe the most interesting one

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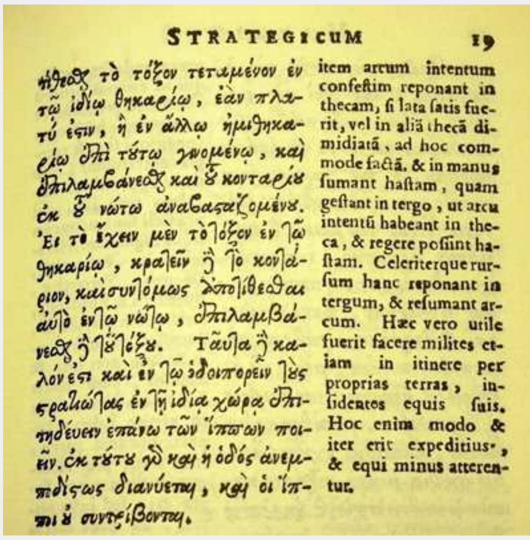
Force vs. Guile



STRATEGICUM 19

item arcum intentum confeftim reponant in thecam, fi lata fatis fuerit, vel in aliā thecā dimidiatā, ad hoc commode factā. & in manus fumant haftam, quam geftant in tergo, ut arcu intentū habeant in theca, & regere pofiint haftam. Celeriterque rurfum hanc reponant in tergum, & refumant arcum. Hæc vero utile fuerit facere milites etiam in itinere per proprias terras, infidentes equis fuis. Hoc enim modo & iter erit expeditius, & equi minus atterentur.

According to Lawrence Freedman, Force vs. guile is the most powerful dichotomy in all strategic though.

Force seeks victory in the physical domain through direct methods,

whilst Guile pursues victory in the mental domain through indirect methods

Are you Achilles or Odysseus?

As the story goes, Troy was not destroyed by force but rather by guile in the form of Odysseus' Trojan Horse,

During my studies, I read military manuals as far back as I could find. I noticed that chapters concerning guile were particularly valuable. I found the same chapters conserved through many centuries. This indicates that it was important for ancient Europeans to make their military leaders aware of their own limitations with regards to the use of guile.

So, it is pretty obvious that being clever <u>is</u> clever, but in our society it is not that obvious in practice.

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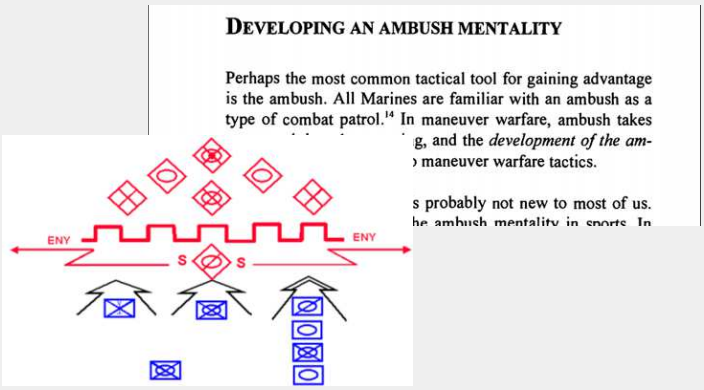
Force vs. Guile

- **Raise awareness of self imposed restrictions**

- Society/environment that fosters rule based thinking
- Doctrine → Dogma
- Break norms/assumptions
  - Within international law



DEVELOPING AN AMBUSH MENTALITY

Perhaps the most common tactical tool for gaining advantage is the ambush. All Marines are familiar with an ambush as a type of combat patrol.[14] In maneuver warfare, ambush takes
g, and the *development of the am-*
maneuver warfare tactics.

s probably not new to most of us.
he ambush mentality in sports. In

We grow up in societies that foster rule based thinking.

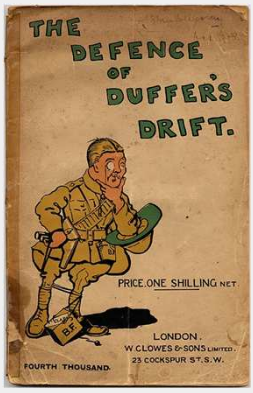
Armies are huge bureaucracies with endless rules that kill creativity and enforce group-think.

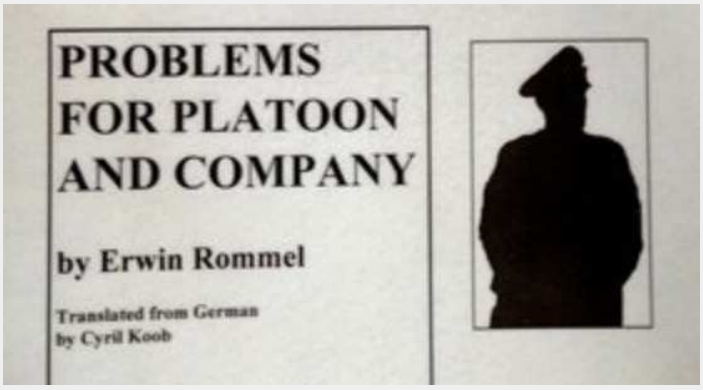
Doctrine often becomes dogma.

Cadets are often much more clever before they enter the academy.

In Norway, every kid knows how to behave in a snowball fight in order to win. But not so much when planning military operations.

Using guile is exploiting other people's predictability. Using their poor quality of judgement against them. Exploiting the fact that most people are making decisions within system 1.





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Historical precedence

Tasks:

- 1887-1894: Moltke his general staff
- 1894: French translation and imitation
- 1934: Rommels tactical problems
- 1939: Infantry in battle (US Army)
- 1994: Mastering Tactics (USMC)

'Dreams':

- 1888: Ein Sommernachstraum
- 1888: Ein Wintertagswirklichkeit
- 1904: Defense of Duffer's Drift
- 1922: Booby's Bluffs
- 1993:Defense of Hill 781
- 1995: Infantry Combat (*Choose Your Own Adventure*)
- 2001: Defense of Duffer's Drift's BSA
- 2009: Defense of Jisr al-Dorea

Military literature that we subjectively feel is of good quality fulfils many of the indicators I have just mentioned.

While they might not have been aware of the pedagogy involved, the authors «did it right»

They want to help the reader change the way he thinks, and by doing so through repetition and feedback - activating "hurting thinking"

Two models

- Tasks where you must argue for your decision. There are no right answers, just better arguments
- Dreams in which you follow successively more complicated thought processes.

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Wargaming

☑ Judgement
– Shape and hone

$$\sum \begin{matrix} Cognitive\ Engagement \\ + \\ Feedback \end{matrix}$$

☑ Speed
– Verify intuitive decision-making
☑ Guile
– Break with norms and assumptions

Wargaming ticks the boxes for all these indicators

Wargaming is very good at triggering cognitive engagement. I am sure we all felt this during yesterday's games fair. Feedback is immediate and to a high degree objective.

Wargaming can help you train yourself to verify and question your gut feeling. To check the solution proposed by system 1 with your system 2.

Wargaming makes you aware of the box you are thinking inside of.

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Relevance today

Thank you for your attention

«If, in addition to experienced judgement, a special mental quality is required, it would be cunning or shrewdness.»

- Clausewitz

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