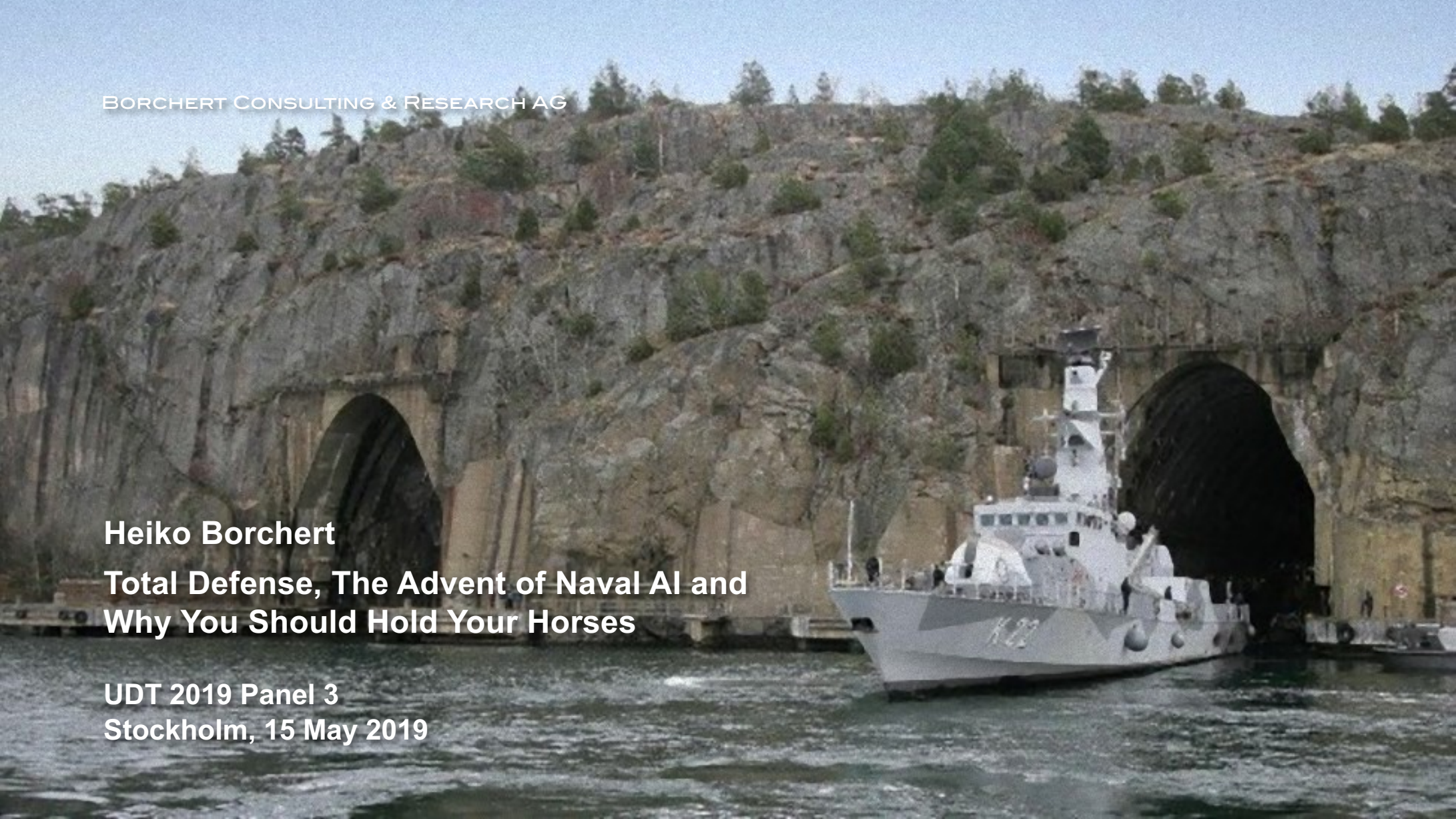


BORCHERT CONSULTING & RESEARCH AG

Heiko Borchert
Total Defense, The Advent of Naval AI and
Why You Should Hold Your Horses

UDT 2019 Panel 3
Stockholm, 15 May 2019



Operations Perspective: Naval AI and the Principles of War

Principle of War (UK Examples)

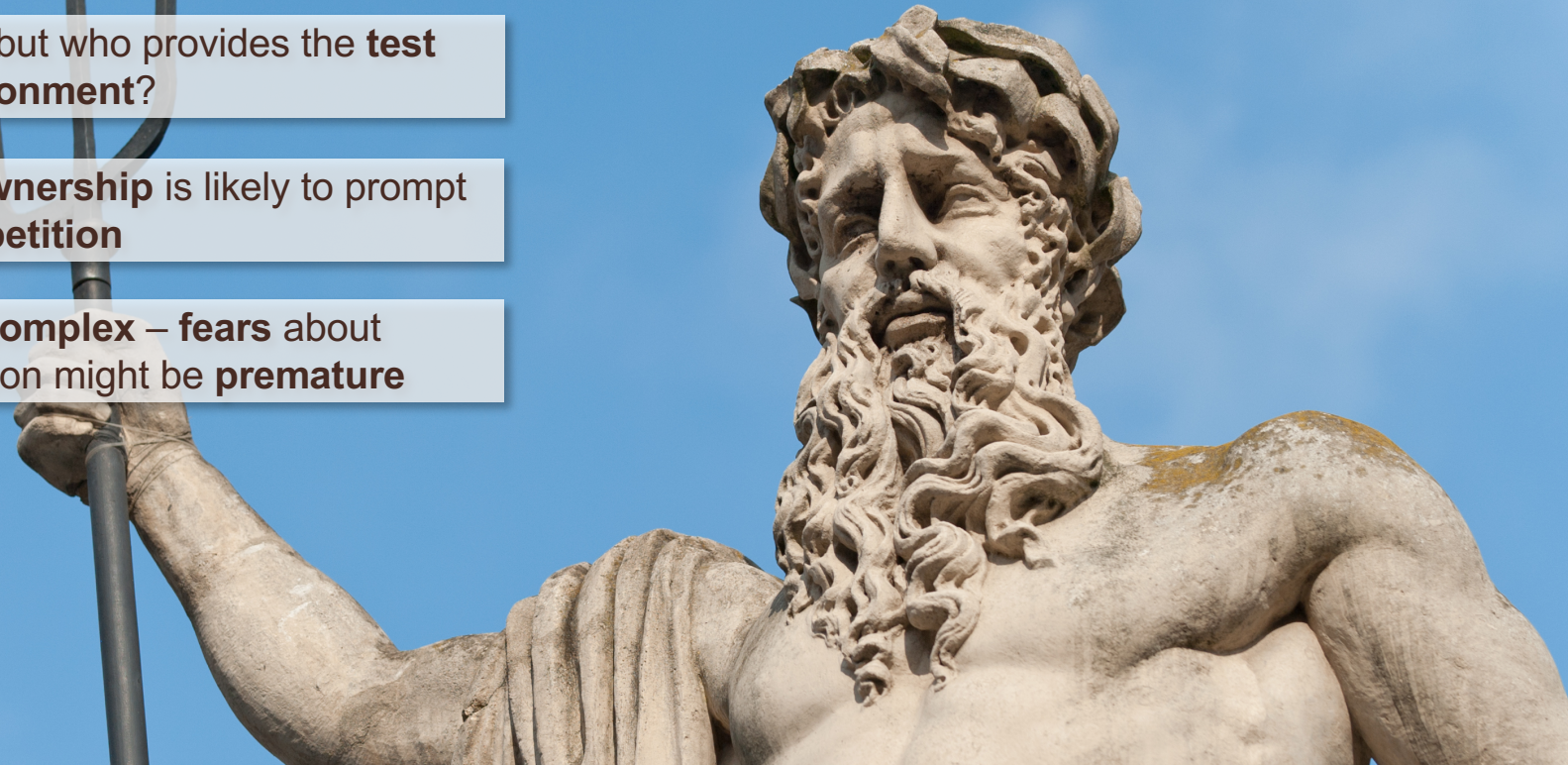
- **Selection and maintenance of the aim** is regarded as the master principle of war
- **Maintenance of morale** enables a positive state of mind
- **Surprise** is the consequence of confusion induced by (...) introducing the unexpected
- **Economy of effort** is judiciously exploiting manpower, material and time

AI Contributions

- AI can support decision-making, but do operators the fact that **AI makes mistakes by design**?
- What if AI empowers an **adversary's stamina**?
- AI may set its **own degree of freedom**
- Trust vs daring or norm-compliance vs. deviation
- AI-empowered **auctioning systems** might set the pace – but who can/will follow?

Cultural-Organizational Perspective: Naval AI and Change

- Edge AI can empower true autonomy and adapt front-end/back-end processes – but is the naval community **ready for change**?
- Seeing is believing – but who provides the **test and validation environment**?
- The quest for **data ownership** is likely to prompt **organizational competition**
- Defense/Naval AI is **complex** – **fears** about accelerated proliferation might be **premature**



Industrial Perspective: The Need for Genuine Defense/Naval AI

- **Defense AI is not available off-the-shelf**
- The **LSI question** is back – and more challenging than in “NEC times”
- **Funding** for defense AI is an issue as **PE/VC** are **soaking up** all the money
- Talent competition will be fierce and might prompt the need for a **defense AI talent pool**
- **Geostrategic competition** for AI is likely to redraw corporate **supply/value chains**

Background pictures (online sources last accessed 11 May 2019)

Page 1	http://www.kfntravelguide.com/swedish-naval-base/
Page 2	https://upload.wikimedia.org/wikipedia/commons/2/20/Trafalgar-Auguste_Mayer.jpg
Page 3	https://www.istockphoto.com
Page 4	https://defpost.com/swedish-navy-submarine-hswms-gotland-begins-sea-trials-following-comprehensive-mid-life-upgrade/

References

Allan, Greg and Taniel Chan, Artificial Intelligence and National Security (Cambridge: Belfer Center for Science and International Affairs, 2017)
Artificial intelligence and the future of defense (The Hague: HCSS, 2017)

Chen, Stephen, "China's plan to use artificial intelligence to boost the thinking skills of nuclear submarine commanders," South China Morning Post, 5 February 2018, <https://www.scmp.com/news/china/society/article/2131127/chinas-plan-use-artificial-intelligence-boost-thinking-skills>

Clark, Bryan, Dan Pratt, and Harrison Schramm, "Decision maneuver: the next revolution in military affairs," Over the Horizon, 29 April 2019, <https://othjournal.com/2019/04/29/decision-maneuver-the-next-revolution-in-military-affairs/>

Cummings, M.L. et. al., Artificial Intelligence and International Affairs. Disruption Anticipated (London: Chatham House, 2018), <https://www.chathamhouse.org/publication/artificial-intelligence-and-international-affairs>

Gilli, Andrea and Mauro Gilli, "Why China Has Not Caught Up Yet: Military-Technological Superiority and the Limits of Imitation, Reverse Engineering, and Cyber Espionage", International Security, 43:3 (Winter 2018/19), pp. 141-189

Metz, Cade, "Tech giants are paying huge salaries for scarce AI talent", New York Times, 22 October 2017, <https://www.nytimes.com/2017/10/22/technology/artificial-intelligence-experts-salaries.html>

McLemore, Connor S. and Hans Lauzen, "The Dawn of Artificial Intelligence in Naval Warfare", War on the Rocks, 12 June 2018, <https://warontherocks.com/2018/06/the-dawn-of-artificial-intelligence-in-naval-warfare/>

Sankaran, Jaganath, "A different use for artificial intelligence in nuclear weapons command and control", War on the Rocks, 25 April 2019, <https://warontherocks.com/2019/04/a-different-use-for-artificial-intelligence-in-nuclear-weapons-command-and-control/>

UK Defense Doctrine. Joint Doctrine Publication 0-01 (Swindon: MoD/DCDC, 2014)

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Borchert Consulting & Research AG

Bruchmattstrasse 12

CH-6003 Lucerne

T +41 41 312 07 40

F +41 41 312 07 44

www.borchert.ch

hb@borchert.ch

Twitter [@HeikoBorchert](https://twitter.com/HeikoBorchert)