Dr. Jai Galliott - The Australian Centre for Cyber Security

The Soldier’s Tolerance for Digital Disruption

Why automate the hell out of everything?

Benefits:

- **$$$ - minimal overheads once established**
- **Run continually**
- **Fault tolerant**
- **Resist subversion (generally)**
- **Configurable**
- **Adaptable**
- **Scalable**
- **Dynamic reconfig.**
- **Automation**
- **Graceful degradation**

Why might soldiers worry?

DARPA Launches Competition to Create Autonomous Cyber Defense Systems

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JUN 3, 2014 | LATEST SECURITY NEWS

The Defense Advanced Research Projects Agency (DARPA), a wing of the U.S. Defense Department responsible for the development of advanced technologies, has announced the launch of a competition designed to challenge security researchers and vendors to create the first wholly autonomous cyber defense system.

The agency is seeking the development real-time threat mitigation systems that can think and act independently of their human administrators because attackers are routinely taking advantage of the lag time between discovery of a vulnerability, remediation strategies, assessment, testing, and the final deployment of a patch, which can sometime take weeks or months.

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US Army will have more combat robots than human soldiers by 2025 – former British spy

Published time: 20 Oct, 2016 18:00
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U.S. Secretary of Defense Chuck Hagel (L) is briefed by Brad Tousley on the Defense Advanced Research Projects Agency's (DARPA) ATLAS robot at the Pentagon in Washington © Kevin Lamarque / Reuters

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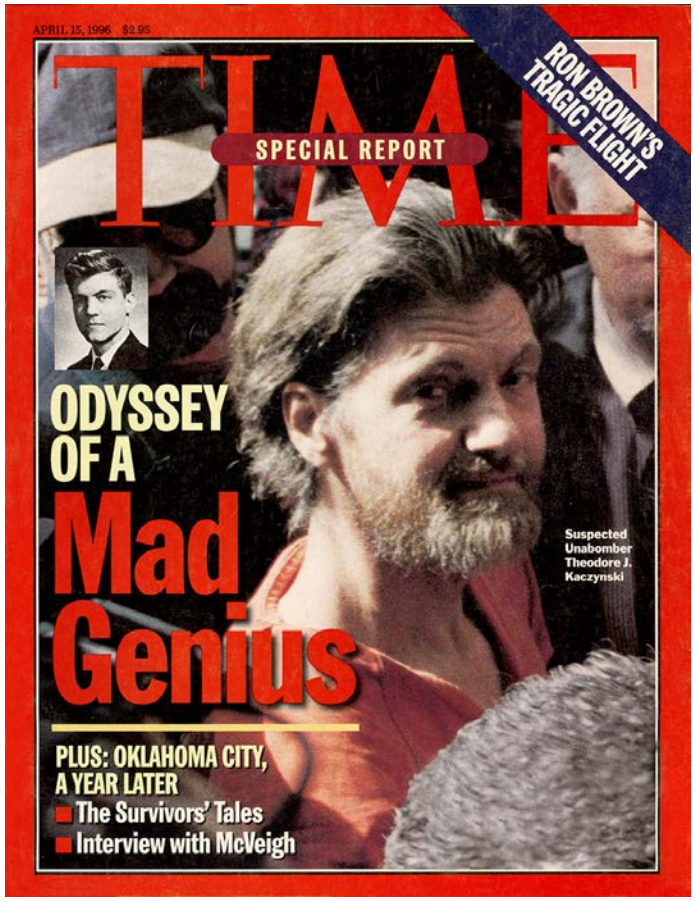
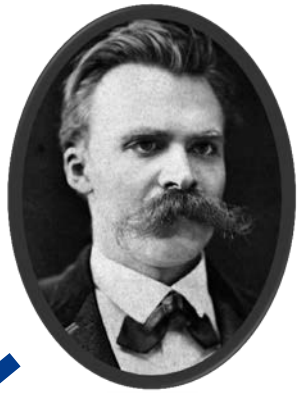


= Surprising solution



The power process

Automation can facilitate the power process

- **Precision (through sensors/data analytics)**
- **Deliberative aids**
- **Enhanced compliance with LOAC/Just War principles**
- **Ability to act conservatively**

But automation can hinder the power process

- **Design oversight of procedurally relevant information**
- **‘Distancing’, compromising moral consideration**
- **Limits ability to assess validity/relevance**
- **Limits ability to influence process/outcomes**
- **Promotes micromanagement**
- **Impinges on character development**
- **Limits opportunities to develop moral deliberative skills**

Why **not** automate the hell out of everything?

Costs:

#1 Grumpy and unfulfilled soldiers, contractors and politicians

#2 Degradation of non-technical capability

What’s needed? More research on:

- **How social, psychological and moral concerns factors into the power process**
- **How soldiers are going to react/adjust to the power process being compromised**
- **What the net benefit of automation is in light of power process considerations**
- **How systems can be designed to account for the power process and the preservation of the right kinds of autonomy within automated processes**

Competitive Evaluation Research Agreement (CERA)

Questions?

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Full paper available upon request