Why autonomous UAVs will lose the War

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Since ever, man hasn't but endeavoured to increase the range of its weapons.

- In increasing the distance between the operators and the battlefield one hopes to reduce the number of casualties in one's ranks.
- To reduce risks even more and gain in efficiency, why should the UAVs not become autonomous?
- Would deployment of autonomous UAVs make the western myth of zero casualties possible?
- **Even if they can help win battles, can autonomous UAVs lose the war?**

Obedience, uncertainty and unpredictability

- Are autonomous combat UAVs adapted to the context of asymmetric wars?
- Would an element of surprise not be more important on a UAV obeying a determined programme?
- What if the success of a mission would require disobeying part of the orders implemented in the UAV's programme?
- Blind obedience is not always a virtue.
- T.A. => Is the proposed technology adapted to the concerned context ?

Robots however could disobey

- In 2009 a MQ-9 Reaper out of control near the Afghanistan border had to be shot down by a fighter plane. The safety process didn't go off.
- How determine in an autonomous robot what behaviour belongs to his legitimate liberty of action, and what would be erroneous behaviours?
- The unpredictability of complex systems would impose, for reasons of security and safety, that a human being be constantly present in the loop.
- T.A.=> To what extent should we go into the automation of technology with the aim of "safety" without introducing new safety risks? Man's position in the decision loop can vary, but his presence will always remain necessary as a "fast reaction force". The man/machine cooperation, where both keep a watchful eye on the other seems to be the safest compromise.

blindly obey = totality of programming fixed upstream

- Drawback: the need to determine beforehand types of behaviours.
- Only possible in a limited framework. But war is not a closed field: the unexpected is the rule.
- Even a posteriori, it is often difficult to determine which decision would have been the best one on the battlefield. How to pretend to determine it a priori?
- Contradiction: programming a robot in a general way whilst this robot will be operated in the most uncertain situations.
- Risk never to “stick” to the reality, always diverging from the abstract plans.
- T.A.=> In an open environment it is impossible to hope to eliminate the unexpected.

Technical answer possible

- Ronald Arkin propose to equip these systems with software based on a utilitarian concept of ethics. A calculation and a scale setting the number of civilians in the vicinity would determine if the robot shoots or not.
- *“A military decision will never be the product of a mathematical calculation: the decision will always require intuition and the capability to grasp the essence of a situation at a glance synthesizing a lot of circumstances **[1]**”* General Vincent Desportes.
- T.A=> Technical solutions aiming at having “an answer for everything” will never grant the robot with the *understanding* of the situations. These solutions can only be valid if a part of the reality, which the robot cannot reach, is cut off. They thus are not sufficient to comprehend all dimensions and implications of situations the robot could be faced with.

[1] V. DEPORTES, *Décider dans l’incertitude,* Economica, stratégies & Doctrines, 2007, p 78

The art of war: play with uncertainty

- “Fortune favours the brave” ,or “Who Dares Wins”.
- Can one programme a robot to be daring? How making him recognizing what could be an opportunity? If one leaves this room for manoeuvre to the robot, the problem of unpredictability would raise again. Can one have confidence, and to what extent?
- A serviceman deserves the confidence of his superiors and subordinates because he participates in a common culture which was taught to him. Is it possible to “programme” this culture in a robot?
- T.A=> Can one program a robot to be usefully “creative” in its reactions? If not, the cooperation with the human being remains an efficient answer to uncertainty.

Strategic interest and side effects

- Can it help to “win the battle of the hearts and the minds of the people” ?
- Would they be able to “feel” the local population’s reactions efficiently?
- Would they not self provoke hostility even more than a soldier in uniform who still remains a fellow creature?
- Would one once be able to win a war or maintain peace without setting a (human) foot in the country?
- Would one once be able to conclude a sustainable peace with those who had to struggle against robots and not against conventional opponents?
- What kind of respect would there be towards the nation and culture of a hidden opponent?

Reactions following American strikes in Pakistan

- David Rode gives us an inside account: « *Our Afghan and Pakistani Taliban guards despised the drones and disparaged them as a cowardly way for America to wage war. The 2009 surge in drone attacks in Pakistan prompted our guards to hate Obama even more than they hated Bush*[1] ".
- One would wonder if this type of technology, far from making war "more rational", does not provoke the adversary to be more aggressive.
- T.A.=> What will be the reactions of the public faced with the technology made autonomous? Account shall be taken with cultural positions amongst others to avoid hostile reactions.

[1] David RHODE, "the Drone War", Reuters magazine http://www.reuters.com/article/2012/01/26/us-davos-reutersmagazine-dronewar-idUSTRE80P19R20120126 (dernière consultation 11/10/12)

Would they make war shorter?

- Ardant du Picq in 1860 and Richard Holmes in 1985 demonstrated than men have a tendency to voluntarily miss a human target.
- Led by automated UAVs, war would probably be more efficiently bloody, and thus more violent.
- Faced with said efficiency, the opponent will choose a “guerilla” type of action and a war of nerves. Would this type of weapon not risk to prolong war, because more latent and less frontal, rather than shorten it?

The use of autonomous UAVs is not an absolute solution to conflicts

- Rhode reports that *« Exaggerated Taliban claims of civilian deaths are widely believed by the Pakistanis, who see the strikes as a flagrant violation of the United States' purported support for human rights. Analysts believe that killing a senior militant in a drone strike is a tactical victory but a loss over the long term because it weakens public support for an American-backed crackdown on militancy in Pakistan, which many analysts think is essential **[1]** ».*
- "*There is more to gain to be an example than to be violent* [2]"
- T.A=> Anticipating pernicious effects: assuring that technology reaches the set aim. Checking, before the technology fails, if the human being cannot respond better to this aim. The required level of technology is sometimes not yet available.

- [1] B. ROYAL, *La conviction d'humanité. L'éthique du soldat français*, Economica, 2008, p95.
- [2] RHODE, ididem

One can expect that it takes better decisions than an officer

- A UAV is supposed to process more information in a more limited time, without tiredness, without anger nor fright.
- Absolute exhaustiveness is impossible and a total loss of time.
- Rather than be based on the whole of the available information, any decision making process requires distinguishing the non-essentials from the essentials. How should this be taught to a robot?
- How teach a robot to identify itself a target *without blunder*? (If human errors are accepted with difficulty, how would be those of the machine?)
- "C*ertainty is quite more a matter of comprehension than of data*[1]", according to Desportes.
  T.A.=> Any action, even by a robot following its programme, remains a risk. The amount of collected data can "drown" pertinent information e.g. for a medical diagnosis. When the programmes are in a loop, the human being must be in a position to decide.

[1] V. DEPORTES, *Décider dans l'incertitude,* Economica, stratégies & Doctrines, 2007, p75.

The ill effects of technology

- The increase of speed whilst immediacy of response does not ascertain its quality.
- The drawback of working with speeds of the kind “just-in-time” is that it presents a strong vulnerability to the unexpected.
- The warfare daze not disappears with speed.
- The economy of the financial powers.
- Technology would in reality have an “equalizing” power, the opponent being able to take advantage of the flaws and weaknesses of technology, knowing how to protect himself from its assets.
- Only the human element remains to be able to make the difference.
- T.A.=> One should not mix up speed and haste. The “totally technological” approach has a cost which has to be compared with the financial situation too.

Could this technology threaten our internal security?

- Daniel Suarez based his thriller « Kill decision » on the possibility of “anonymous” UAVs strikes.
- The possibility to buy a Parrot UAV for some hundreds euro or to easily develop one’s own model sets us thinking…
- T.A.=> Any technology has a good and a bad usage. How can one ensure that they do not fall “in bad hands”?

Conclusion

- Thinking that we will control the uncertainty itself because we will control the behaviour of robots is an illusion.
- At war one commands but one cannot pretend to control.
- Be it the warfare daze, the persistence of uncertainty, the “friction” of the constraints of time, the population’s reaction,… there are unchanging principles that even the great technological revolution cannot erase.
- If robotics can be a vehicle for future, one should not keep it separate from a concrete cooperation with the human element.