

# Giant Radio Telescope Could Detect E.T.'s Call

by [Nola Taylor Redd](#), [Space.com](#) Contributor | September 17, 2015 07:31am ET

More ▾



An artist's impression of the completed Square Kilometer Array, which will be constructed in South Africa and Western Australia.

Credit: SKA Organisation

[View full size image](#)

# Why mankind will message ET

*The inevitability of contacting ET  
(provided ETI exists)*

# Overview

- ✦ Why the precautionary principle fails
- ✦ Why intelligent life most likely is not hostile
- ✦ Why mankind will message ET

# Stephen Hawking

- **"We don't know much about aliens**, but we know about humans. If you look at history, contact between humans and less intelligent organisms have often been disastrous from their point of view, and encounters between civilizations with advanced versus primitive technologies have gone badly for the less advanced. A civilization reading one of our messages could be billions of years ahead of us. If so, they will be vastly more powerful, and may not see us as any more valuable than we see bacteria." -
- See more at: <http://www.space.com/29999-stephen-hawking-intelligent-alien-life-danger.html#sthash.2dJKKvom.dpuf>

# The Precautionary principle

(based on: The Precautionary Principle: Egoism, Altruism, and the Active SETI Debate, Adam Korbitz in Extraterrestrial Altruism by Douglas A. Vakoch)

- Many state that this principle should be adhered when applying METI:
  - *'If an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is not harmful, the burden of proof that it is not harmful falls on those taking an action.'*
- Strong: 'better safe than sorry'
- Weak: 'a decisive harm is a reason to regulate a potential hazard'

# Do not METI or CETI as it can induce a hostile invasion or intervention and is therefore a high risk

- Man is acting in the realm of intuition, speculation and, to some extent, emotion – not data, not known facts.  
Examples:
  - **Omission bias:** tendency to prefer risks created by acts of omission over risks created by commission ( appears only in subset of population)  
**SETI** relevance: doing nothing is safer than acting
  - **Probability neglect** or compression: Tendency to fear dramatic but less likely events (plane crashes, terror attacks) to likelier risk.  
**SETI** relevance: possibility of hostile invasion is feared more than simple message exchange
  - **Loss aversion:**tendency to fear a loss from status quo above a possible gain.  
**SETI** relevance: people are more concerned about a possible loss (feared alien invasion) caused by unfamiliar risk (active SETI) above the benefits from contact with altruistic and benevolent ETI

# Conclusion on precautionary principle

- Applying the Precautionary principle to rigorous could lead to a loss of gain in knowledge by an immeasurable small risk. Ignoring the “opportunity benefits” might be a bigger risk than the risk that is mitigated.
- *In all of these questions, we are dealing with situations of uncertainty (where probabilities are unknown and possibly uncalculable) as opposed to risk (where probabilities can actually be calculated). Therefore, neither the Precautionary Principle, maximin, nor Sunstein’s Anti-Catastrophe Principle can help resolve these questions given the current state of knowledge regarding ETI civilizations and their dispositions toward egoism and altruism. (Adam Korbitz)*
- Given the absence of knowledge there is no reason to believe that active SETI poses a threat to the human race

# Main question is:

- ✦ **Will ETI behave egoistically or altruistically toward us?**

**My hypothesis:**

***Assuming that evolution is a uniform principle it is likely that an intelligent culture has a low tendency towards violence***



# What is intelligence?

- After their summary Legg & Hutter (2007) present the following common features of intelligence derived from 70 definitions. They conclude that intelligence
  - Is a property that an individual agent has as it interacts with its environment or environments.
  - Is related to the agent's ability to succeed or profit with respect to some goal or objective.
  - Depends on how able the agent is to adapt to different objectives and environments.
- Intelligence works both ways: It is an interaction with the environment and at the same time an intelligent environment enables intelligence.

# What does an intelligent agent need?

- sensors for monitoring the environment that are sufficient to build up an internal world
- a 'brain' that has both short term memory functioning as a buffer and long term memory
- the ability to fuse the sensory input (brainpower) and even more important to reduce information end to encode this input into concepts, structures, events, resulting in an a mental internal world that is a real time representation of the outside world
- the ability to learn, think, plan, manipulate concepts
- a high processing speed, the higher the processing speed the more chance on survivability
- a language as a means to express thoughts, to convey concepts and to coordinate joint behaviour (group behaviour increases survivability)

# Intelligence is a universal on Earth

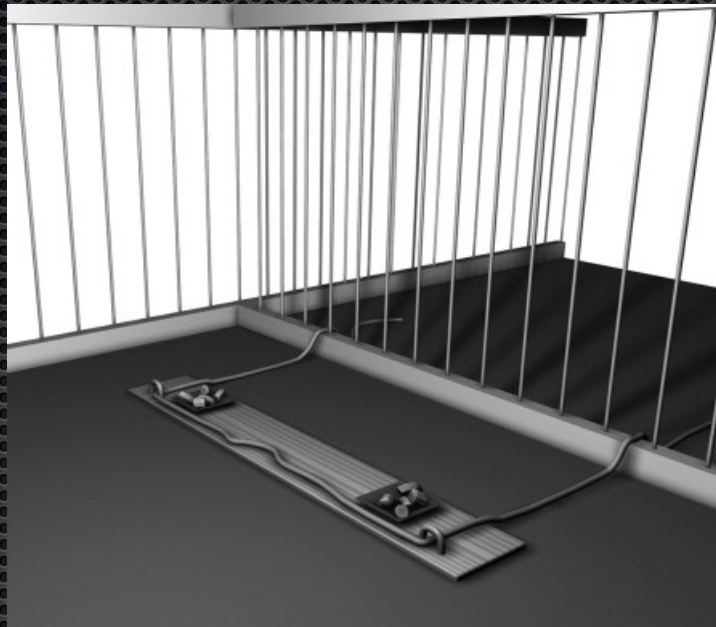
- ✦ Man is not the only intelligent species on earth
- ✦ Other examples: dolphins, pigs, dogs, apes
- ✦ But mankind is the only species with extelligence (culture, language)

# The example of dogs

- Hare & Woods (Hare & Woods, 2013) about the foxes of the Russian scientist Belyaev.
- Belyaev started experiments in 1959 with one population of foxes that were unable to understand human gestures.
- For several generations he started breeding for one behavioural characteristic: he bred the foxes who were least aggressive and most interested in humans.
- Belyaev also kept a control group of foxes where behaviour towards humans was not a selection criteria.
- After testing both groups Hare concludes that the group least fearful and friendliest were at a natural advantage over more fearful and aggressive animals (Hare & Woods, 2013).

# The example of apes

- Vanessa Woods designed a test comparing bonobos and chimpanzees.



- *The most important observation, which has remained unchanged over the last three decades, is that there are no confirmed reports of lethal aggression among bonobos. For chimpanzees, in contrast, we have dozens of cases...* (p54, De Waal, 2013)

# Findings:



- Chimpanzees were only solving the problem in pairs with equal status
- Chimpanzees did not solve it when one of the two was dominant
- Bonobos performed well in all situations
- Also research by J. Stevens shows Bonobos outperform Chimpanzees on intelligence

Observation by F. de Waal:

*The most important observation, which has remained unchanged over the last three decades, is that there are no confirmed reports of lethal aggression among bonobos. For chimpanzees, in contrast, we have dozens of cases...*

# The example of humanity

- Living in a group and as a consequence following the rules of the group contributed to the survivability
- *‘important parts of our personal cognitive processes are caused by the network... and that important parts of our intelligence depend upon network properties.’ (Pentland, 2007).*
- The Internet can serve as a prime example for ‘collective network intelligence’ using communication.
- Technology is more and more embodied in the human body and simultaneously the individual is integrated in the network. This progressive integration will have a significant influence on the collective intelligence of humanity.

# Steven Pinker

## Better Angels of our Nature

- *The decline has not been steady; it has not brought violence down to zero; and it is not guaranteed to continue. But it is a persistent historical development, visible on scales from millennia to years, from world wars and genocides to the spanking of children and the treatment of animals.*



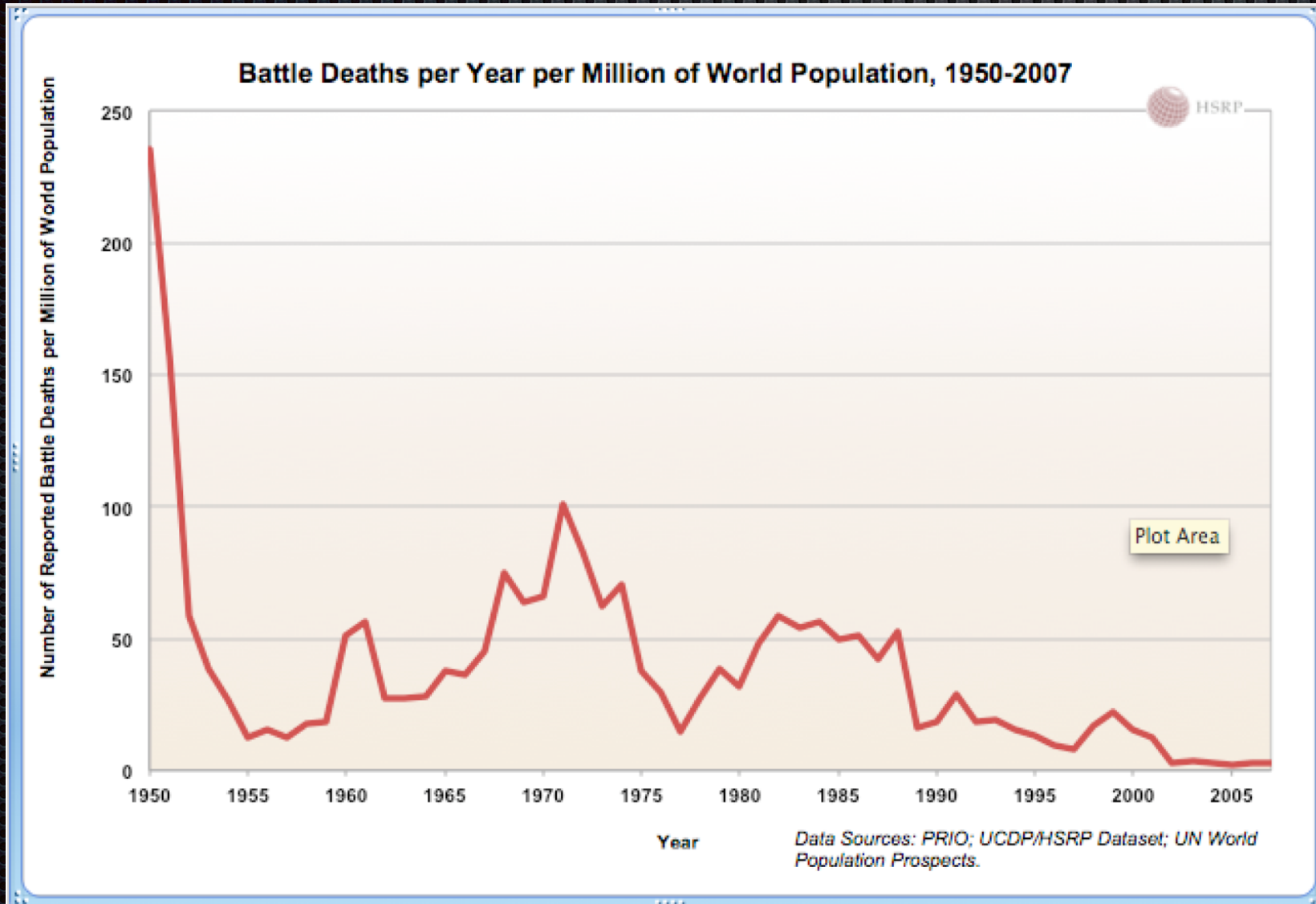
# The 5<sup>th</sup> Angel

Pinker examines four motives that "can orient [humans] away from violence and towards cooperation and altruism." He identifies:

1. Empathy: which "prompts us to feel the pain of others and to align their interests with our own."
2. Self-Control: which "allows us to anticipate the consequences of acting on our impulses and to inhibit them accordingly."
3. The Moral Sense: which "sanctifies a set of norms and taboos that govern the interactions among people in a culture." These sometimes decrease violence but can also increase it "when the norms are tribal, authoritarian, or puritanical."
4. Reason: which "allows us to extract ourselves from our parochial vantage points."
5. Intelligence: Intelligence of humanity (at least as a group) has increased

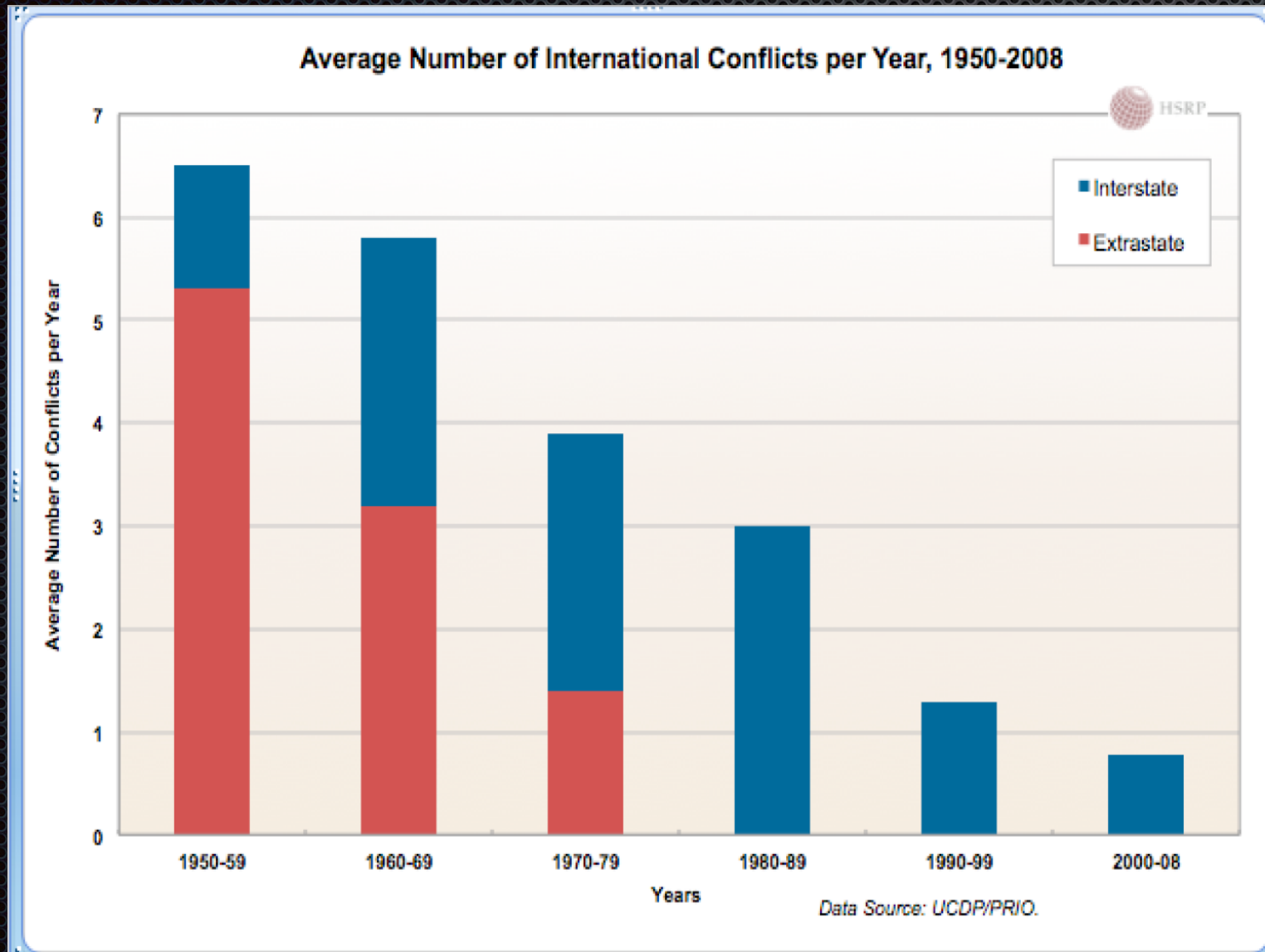
# The example of humanity

## Battle deaths



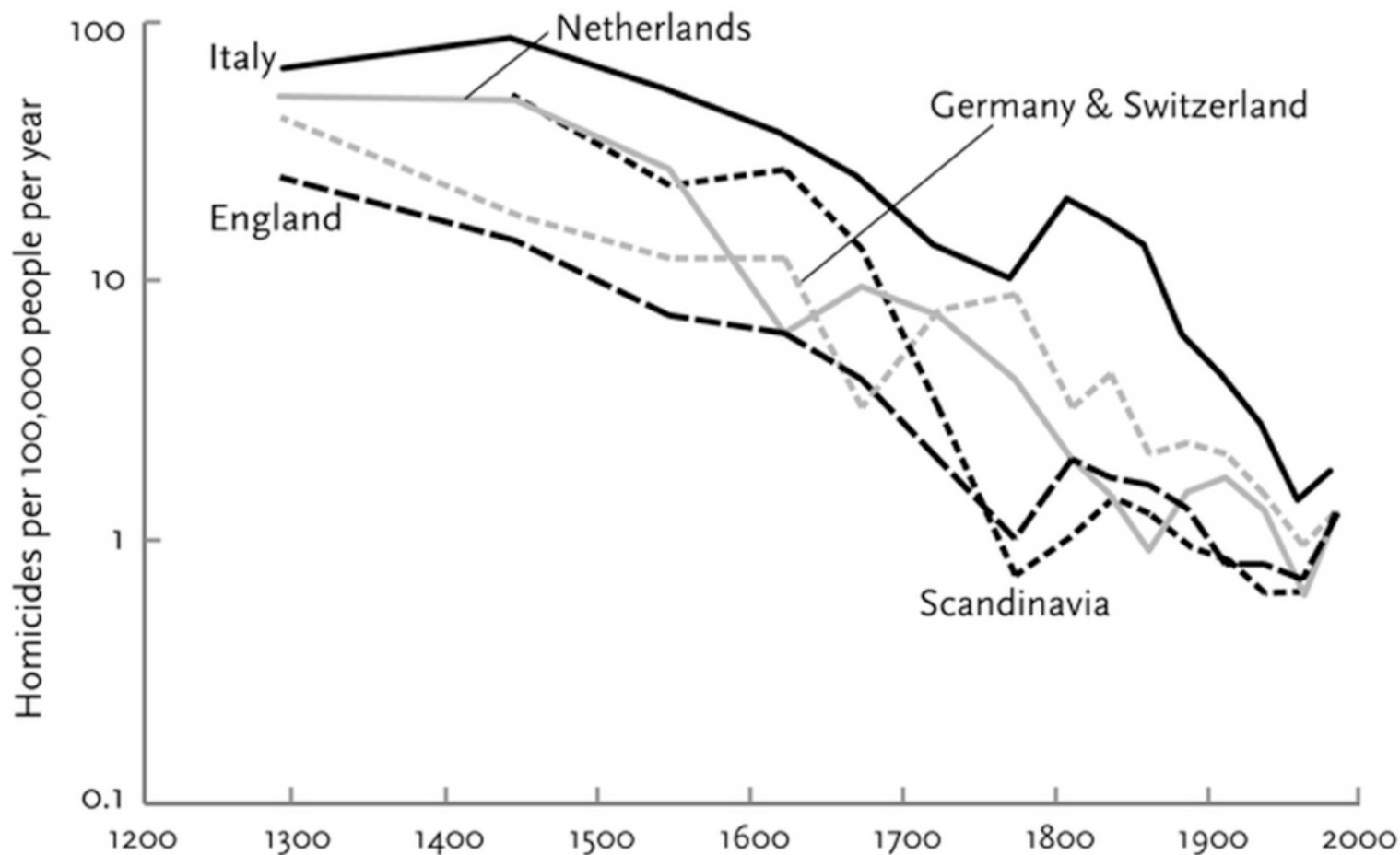
# The example of humanity

## International Conflicts



# The example of humanity

## Number of homicides



Source: Steven Pinker

▪ *Assessment by HSRP (2014):*

Many of the security-enhancing changes that Pinker and other “declinists” have identified are enduring and likely to continue to have an impact well into the future. They include, for example:

- The strong normative proscription against the use of military force—except in self-defence, or sanctioned by the UN Security Council.
- Peacekeeping, peacebuilding and “peacemaking” (UN-speak for seeking to stop ongoing wars.) These are inefficient, but also effective.
- Increased economic interdependence—which in turn increases the costs and decreases the benefits of the resort to war.
- Inclusive democratization—at its best a form of non-violent conflict resolution.
- Increased economic development—the politics of economic growth are much less conflictual than the negative sum politics of economic decline.
- Enhanced state capacity—meaning access to greater resources to address grievances and deter violence.
- The end of colonialism and the Cold War—which removed two major causes of international conflict from the international system.



(c) Daniela de Paulis

# Philosophy of Technology

- In modernity
  - there was a strong dystopian thinking about technology: “Only God can save us” (Heidegger)
- Post modernism
  - borders between man and technology (object and subject) disappear and create new ways of ‘being’
  - transhumanism borders between man and technology disappear. Technology will result in a better ‘improved’ human
  - the Odyssee of life cannot be stopped (de Mul) or today's genetic technology is just a continuation of human tool use. (Sloterdijk)

In other words:

**We must learn how to use the technologies we developed we cannot stop the progress**

# Stephen Hawking

- **"We don't know much about aliens**, but we know about humans. If you look at history, contact between humans and less intelligent organisms have often been disastrous from their point of view, and encounters between civilizations with advanced versus primitive technologies have gone badly for the less advanced. A civilization reading one of our messages could be billions of years ahead of us. If so, they will be vastly more powerful, and may not see us as any more valuable than we see bacteria." -
- See more at: <http://www.space.com/29999-stephen-hawking-intelligent-alien-life-danger.html#sthash.2dJKKvom.dpuf>



# Conclusions:

## Mankind will Message ET

- ✦ The Precautionary Principle does not apply for METI
- ✦ If evolution is a Universal process in the universe it is likely that higher intelligence will be friendly
- ✦ The technology for messaging ET is available, so it *will* be used. It is up to us to use it wisely and responsibly
- ✦ An active SETI programme might be a prerequisite to establish contact (Vakoch, 2011)

Questions??