

# The paradox of autonomy: The interaction between humans and autonomous cognitive artifacts

Alexander Riegler  
CLEA, Vrije Universiteit Brussels, Belgium  
[ariegler@vub.ac.be](mailto:ariegler@vub.ac.be)

## Abstract

According to Thrun and others, personal service robots need increasingly more autonomy in order to function in the highly unpredictable company of humans. At the same time, the cognitive processes in artifacts will become increasingly alien to us. This is has several reasons: 1. Maturana's concept of structural determinism questions conventional forms of interaction. 2. Considerably different ways of embodiment result in incompatible referential frameworks (worldviews). 3. Engineers focus on the output of artifacts, whereas autonomous cognitive systems seek to control their input state. As a result, instructional interaction – the basic ingredient of conventional man–machine relationships – with genuine autonomous systems will become impossible. Therefore the increase of autonomy will eventually lead to a paradox. Today we are still in a position to anthropomorphically trivialize the behavioral pattern of current robots (von Foerster). Eventually, however, when self-organizing systems will have reached the high levels of autonomy we wished for interacting with them may become impossible since their goals will be completely independent of ours.