



## **Application of social domain of human mind in water management**

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Currently, researches dispute whether a human reasons domain-generally or domain-specifically (Fiddick, 2004). The theory of several intuitive reasoning programmes in human mind suggests that the main driver to increase problem-solving abilities is social domain (Byrne & Bates, 2009). This theory leads to an idea to apply the social domain also in environmental management. More specifically, environmental problems might be presented through social aspects.

Cosmides (1989) proposed that the most powerful programme in our social domain might be 'cheater detection module' – a genetically determined mental tool whose dedicated function is to unmask cheaters. She even suggested that only cheater detection can enable logical reasoning. Recently, this idea has found experimental proof and specifications (Buchner et al., 2009).

From this perspective, a participatory environmental decision support system requires involvement of the representatives of social control such as environmental agencies and NGOs. These evaluators might effectively discover legal and moral inconsistencies, logical errors and other weaknesses in proposals if they are encouraged to detect cheating. Thus, instead of just environmental concerns, the query of an artificial intelligence should emphasize cheating. Following the idea of Cosmides (1989), employment of cheater detectors to EDSS might appear the only way to achieve environmental management which applies correct logical reasoning as well as both, legislative requirements and conservationist moral.

According to our hypothesis, representatives of social control can well discover legal and moral inconsistencies, logical errors and other weaknesses in environmental management proposals if encouraged for cheater detection.

In our social experiment, a draft plan of measures for sustainable management of Lake Peipsi environment was proposed to representatives of social control, including Ministry of Environment, other environmental authorities, and NGOs. These people were randomly divided to two working groups and asked to criticize the proposed plan. One group was encouraged to detect cheating behind the plan. Later, a group of independent experts evaluated the criticism of both groups and each individual person. The resulting assignments rated the group of cheater detectors as significantly more adequate decision-supporters.

The results confirmed that simulation of the 'cheater detection module' of human mind might improve the performance of an EDSS. The study calls for the development of special methodologies for the stimulation and application of social domain in water management.

### References

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