

# Leverage of a Facebook “game with a purpose” as a survey tool for climate change knowledge

S. Seebauer, A. Kufleitner

*Wegener Center for Climate and Global Change, University of Graz, Graz, Austria*

Due to the complex and dynamic nature of climate change research, there is significant demand for structured domain knowledge. The Triple-C project builds a web-based technology to automatically gather and annotate relevant documents from multiple sources. To structure the information space, existing ontologies need to be extended and refined. This refinement is done through collaborative ontology building in an interactive “game with a purpose”. The game is propagated on the social networking platform Facebook.

Collecting international and intercultural data on individual knowledge regarding the causes and effects of climate change currently demands considerable efforts. Individual scores in the “game with a purpose” reflect the ability to replicate prevailing categories and interrelations of climate change topics. Game scores therefore might provide an alternative for measuring climate change knowledge: Unlike conventional social surveys, the game will obtain data from large worldwide samples cost-efficiently, unobtrusively and continuously.

Correlations with quiz questions on climate change establish criterion validity. To verify discriminant validity and to explore determinants and consequences of climate change knowledge, risk perception and concern about climate change, attribution of responsibility, personal efficacy, subjective knowledge as well as knowledge on climate change in the personal network are assessed.

Control for non-representative sampling is available through social statistics and membership in environmental NGOs or lobby groups. Furthermore, environmental values of subjects are measured using the New Ecological Paradigm.

Players gain points for correctly identifying the same ontological relations as the majority of co-players. Participants receive additional points for completing an attached online questionnaire on the mentioned psychological constructs. To ensure comparability, item wordings are closely similar to other cross-national surveys (e.g., World Value Study).

Implementation of the Facebook game and start of the data collection are planned for June 2011. We will present critical aspects in ontology building and game design as well as experiences from implementation.

Provided public acceptance of the game, the tracking of Facebook IDs will allow gaining repeated measures from the same individuals. Such data could be used in future research to investigate temporal stability of knowledge as well as causal effects of factors such as risk perception and attribution of responsibility on climate change knowledge.

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## **References**

- Kellstedt, P., Zahran, S., Vedlitz, A. (2008), Personal efficacy, the information environment, and attitudes toward global warming and climate change in the United States. *Risk Analysis*, 28 (1), 113-126
- Leiserowitz, A (2006), Climate change risk perception and policy preferences. The role of affect, imagery, and values. *Climatic Change*, 77, 45-72
- Sundblad, E., Biel, A., Gärling, T. (2007), Cognitive and affective risk judgements related to climate change. *Journal of Environmental Psychology*, 27, 97-106
- Dunlap, R., van Liere, K., Mertig, A., Jones, R. (2000), Measuring endorsement of the New Ecological Paradigm. A revised NEP scale. *Journal of Social Issues*, 56 (3), 425-442