



Aalto University
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The role of social strategy games in understanding the trade-offs between mitigation and adaptation in climate change decision-making in cities

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Outline

- Climate change and cities
- Understanding trade-offs and positive synergies between adaptation and mitigation
- Gaming as an aid to decision-making
- Experiences from game sessions

Climate change in cities

- Cities consume two thirds of global energy and produce 70% of global emissions
- More than half of the world's population lives in cities, majority of which are located on the coast
- Urban areas are crucial for both mitigating greenhouse gas emissions as well as in terms of adapting to the impacts of climate change

Tradeoffs and positive synergies

	Adaptation	Mitigation	Social justice
Adaptation	N/A	Less dense urban structure can increase GHG emissions by increasing transport	Climate proof houses can be more expensive and can increase the vulnerability of poorer groups in society who cannot afford them
Mitigation	<p>Dense urban structure can increase the risk of the heat island effect</p> <p>Dense urban structure can increase the risk of flash flooding</p>	N/A	<p>Densely built environment can lead lower quality of life</p> <p>Dense urban structures can cause health impacts (pollution etc.)</p>
Social justice	Expanding cities can build on vulnerable areas	<p>Increased housing consumes more energy during the building process</p> <p>Cheap housing stock can lead to increased emissions</p>	N/A

Tradeoffs and positive synergies

	Adaptation	Mitigation	Social justice
Adaptation	N/A	<p>Energy efficiency in buildings can have a cooling effect</p> <p>Use of green spaces in cities can help to create carbon sinks</p>	Green spaces increase the quality of living
Mitigation	Adaptation measures, such as green roofs can improve energy efficiency	N/A	<p>Energy efficiency measures can lower living costs</p> <p>Densely built cities can increase lower travel costs access to cities</p>
Social justice	Urban structures can be used as adaptation measures (flood walls etc.)	Reduction of energy poverty	N/A



Climate change decision-

- Many of these impacts and their interdependence stakeholders to compr



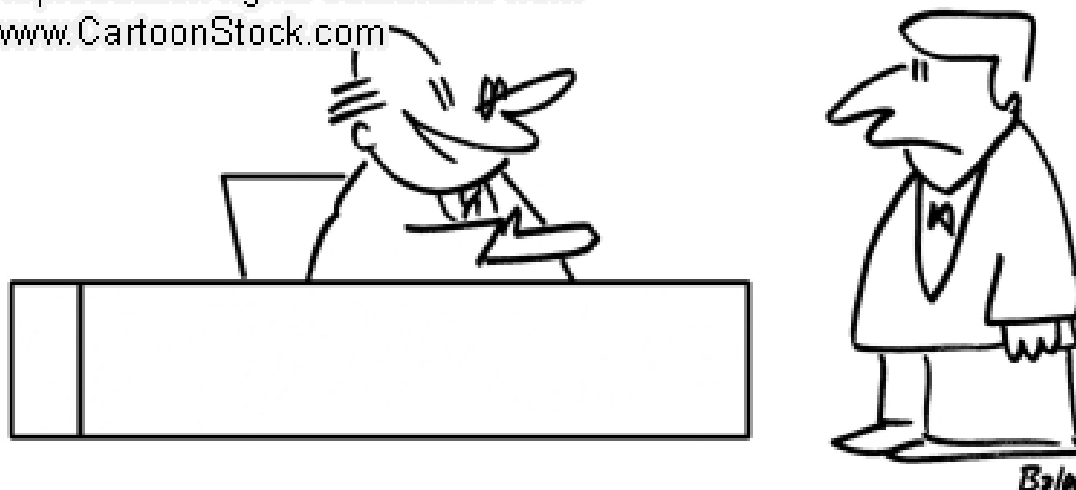
Gaming as a decision-making tool?



Gaming as a decision-making tool?

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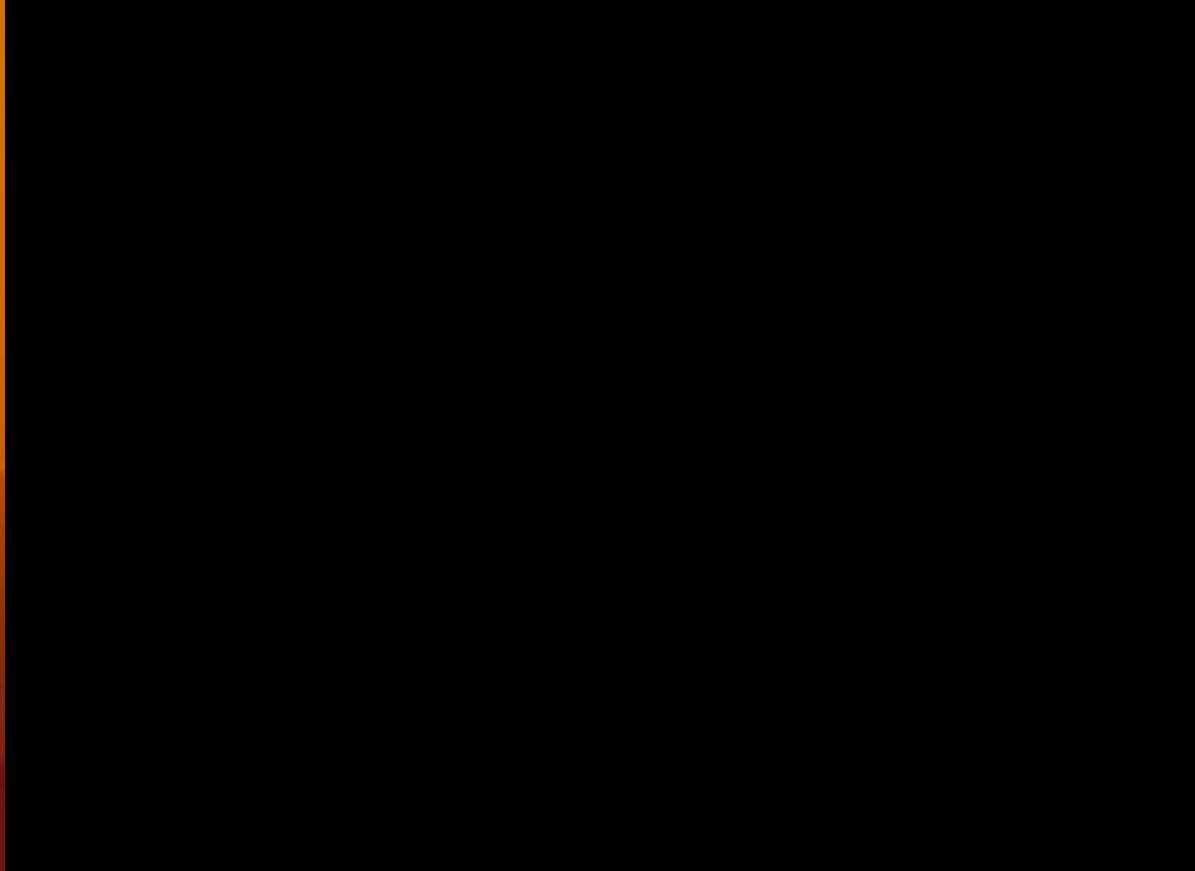
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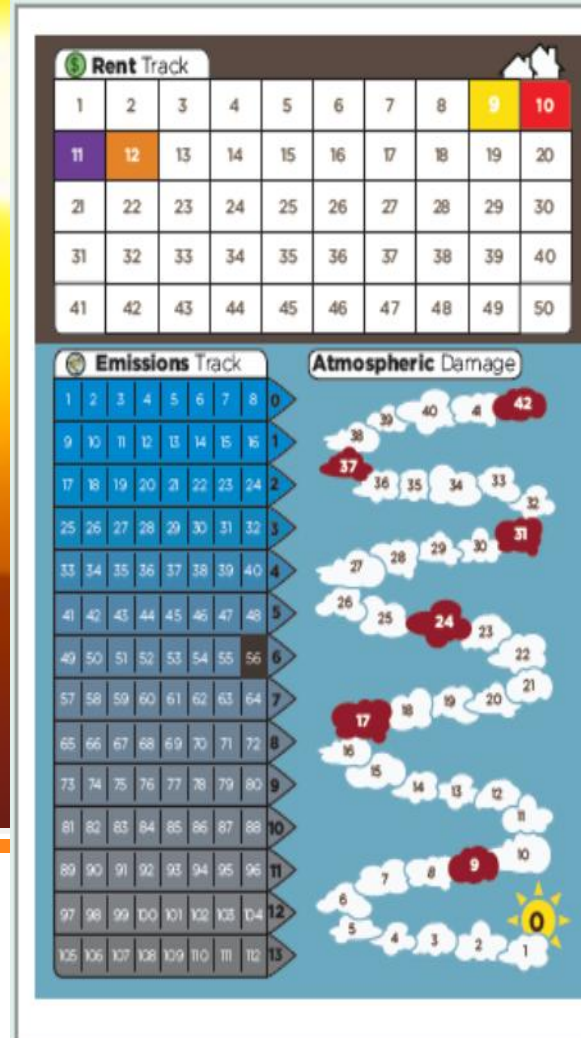
"I'm bringing you into the
decision-making process, Ruggles.
Here — flip this coin."

Broken Cities



BROKEN CITIES

- The game was played on 3 occasions in Helsinki, Finland; Aalborg, Denmark; and Boston, Massachusetts during 2011-2012
- Participant observation and questionnaire
- Trade-offs between adaptation, mitigation, economic growth and social justice



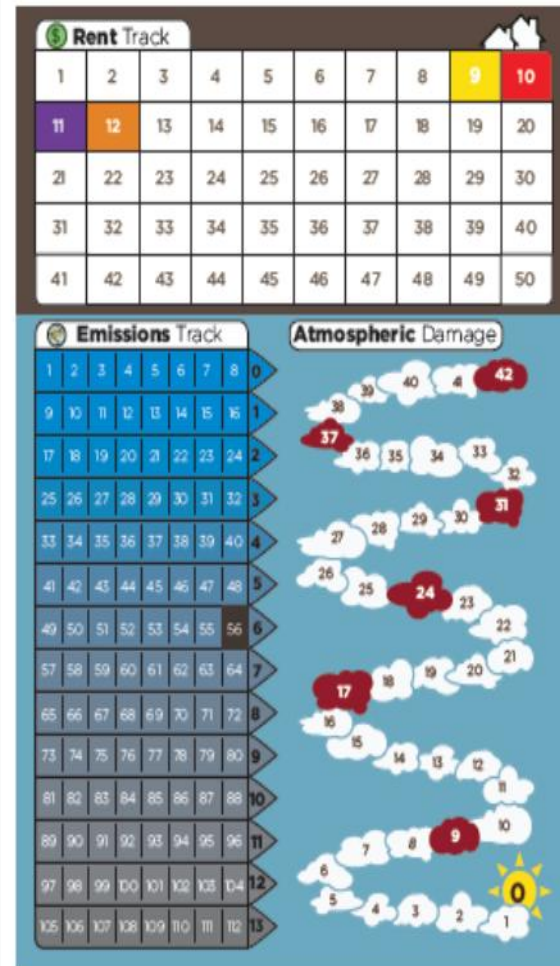
BROKEN CITIES

Dense urban structure is a priority over reducing the risk of urban heat island effect

Energy prices should be kept low to protect socially and economically vulnerable parts of the population

Prioritising more expensive green housing can make poorer social groups more vulnerable to the impacts of climate change

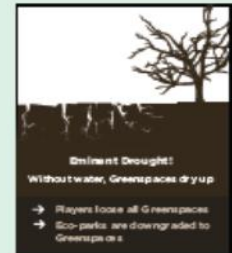
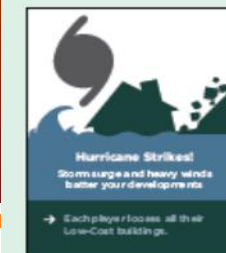
Providing cheap housing is more important than reducing greenhouse gas emissions



BROKEN CITIES

Initial results

- Majority of players had a clear impression of the trade-offs
- Legislation was considered to have most influence over market or voluntary collaboration
- Players changed their strategy during the game
- Players strategy was mostly influenced by profits and both adaptation and mitigation concerns



Thank you!

The game will be freely available at:

www.nord-star.info

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