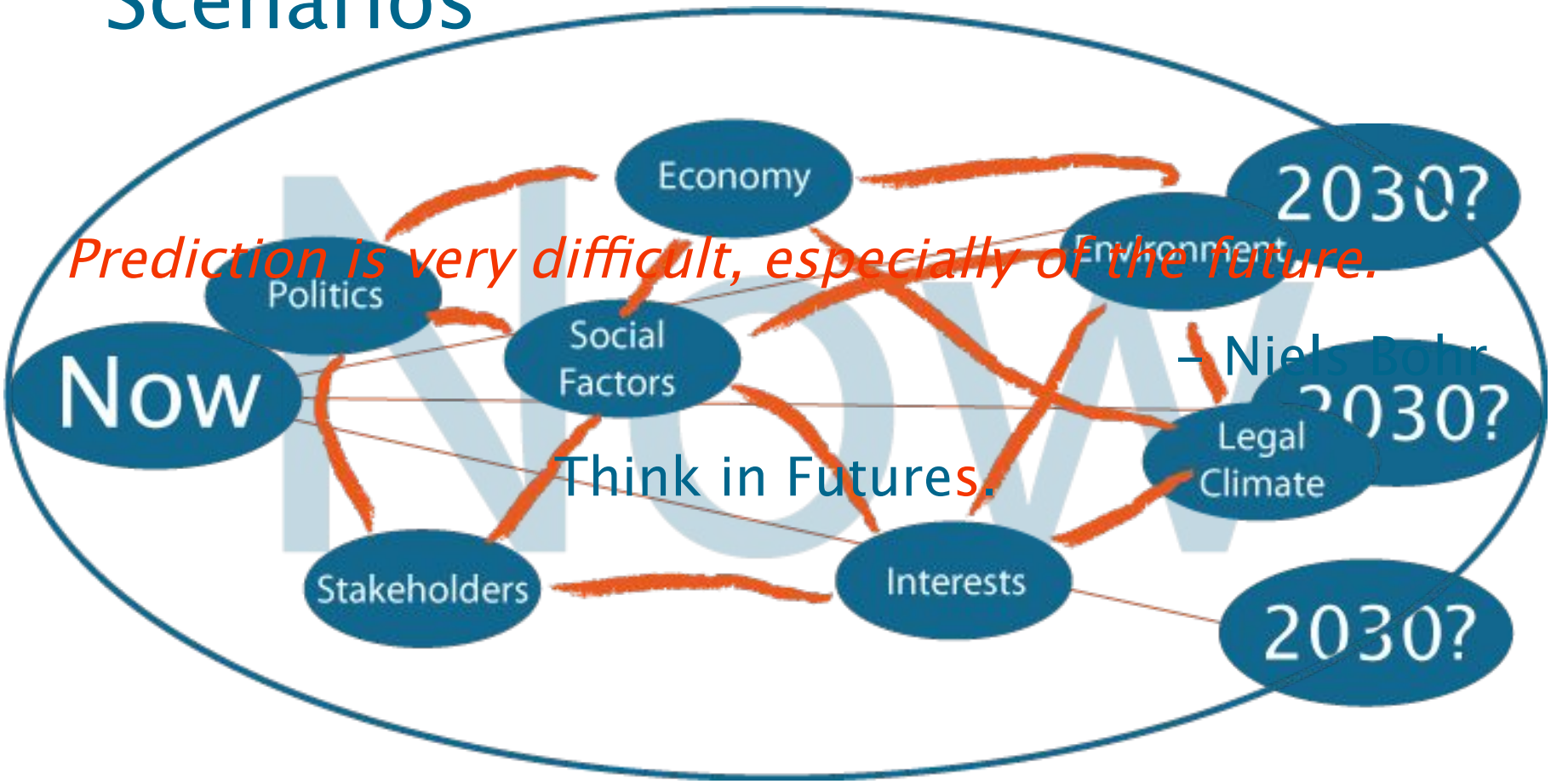
# Futures of Arctic Marine Transportation 2030

Marc Mueller-Stoffels
Department of Physics, UAF
mmuellerstoffels@alaska.edu
Hajo Eicken
Geophysical Institute, UAF

# Scenarios




*Prediction is very difficult, especially of the future.*

– Niels Bohr

Think in Futures.

# Futures for the Arctic

- Based on Arctic Council's Arctic Marine Shipping Assessment (AMSA) Workshop
- Analyzed workshop notes for Key Factors
- Researched possible Future Projections
- Included two Wild Cards
- Robustness-Analysis (see Poster)

# Four Scenarios

- Status Quo, slow shift in energy use
  - Robust (Consistent and Plausible)
- Rapid development, no conflict
  - Consistent, not very plausible
- No climate change, technology driven development
  - Plausible
- High tension in the Arctic region
  - Average scores

# Recurring Patterns

- Negative socioeconomic impact of climate change (3/4)
- Unpredictably oscillating oil price (3/4)
- Japan and China as players in the Arctic (3/4)
- Interference of economic development with indigenous life style (4/4)
- Fossil fuels as main energy source (3/4)

# Uncertain Factors

- Legal Framework
  - International (Dis-) Agreement on use of Arctic Region
  - Regulation
  - Enforcement
  - Disaster response
- Intensity of climate change
- Global Economic Growth
- Safety of other shipping routes

# Take-home Message

- Stakeholders can organize and influence
  - Policy
  - Science and Technology
- Cooperate with other stakeholders
- Read the scenarios and make your own at http://seaice.scenlab.com

# Thank you!

- Lawson W. Brigham (US Arctic Research Commission)
- Martin Truffer, W. F. Weeks, Karlheinz Steinmüller
- Erik Gauger, evolve:IT