



# Living in a new world of climate extremes

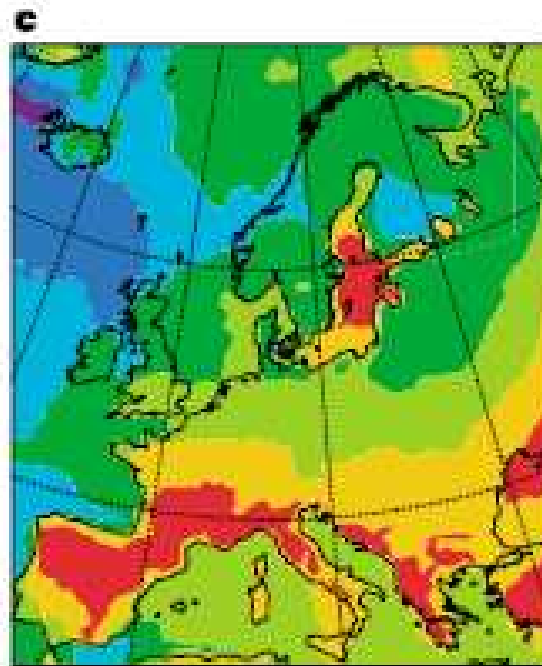
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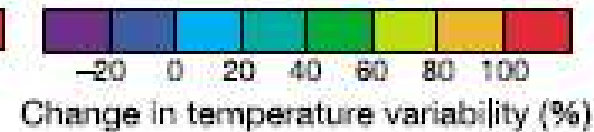
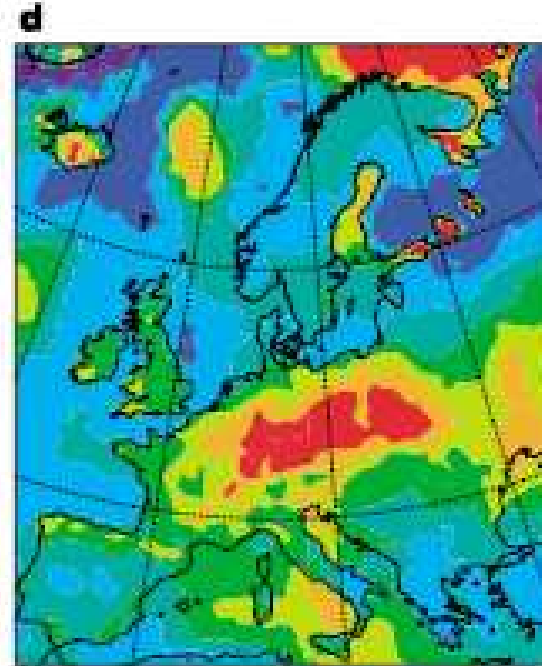
# More unprecedented heat waves to come



Temperature Increase  
(up to 5°C)



Temperature variability Increase  
(up to 100%)



Source: Schär et al., 2005

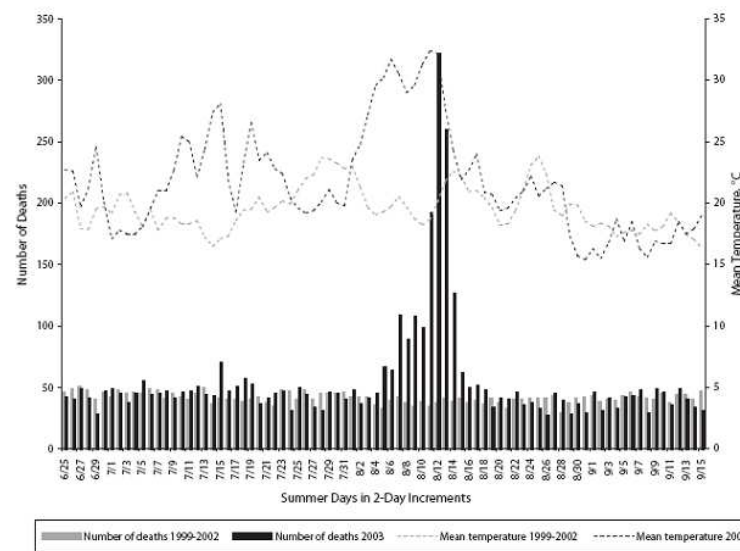
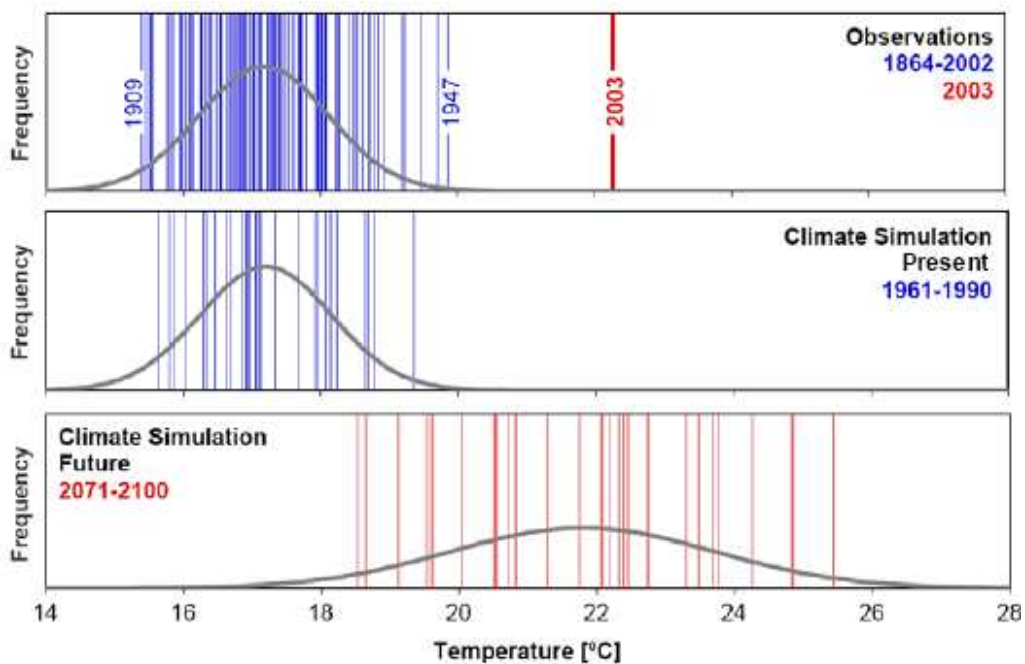


# Unprecedented conditions already recently encountered (seasonal scale)



Summer 2003 (Switzerland) Schär et al 2005

Mortality in Paris Vandertorren et al, 2004

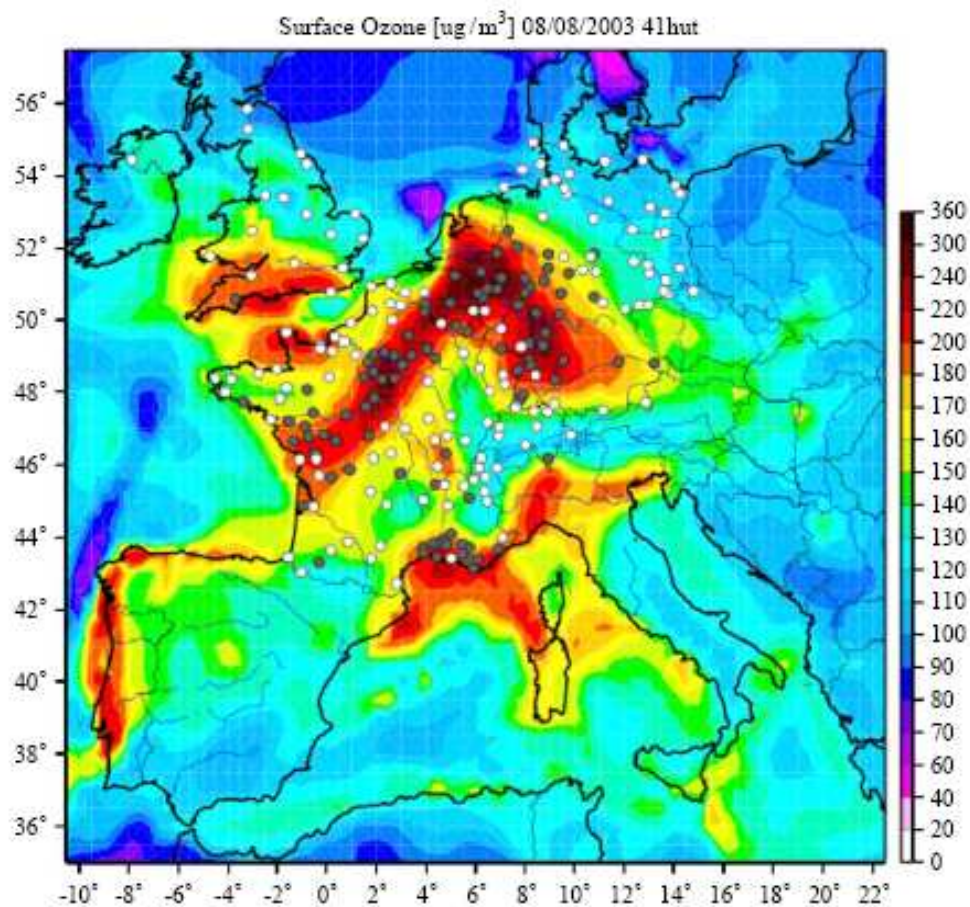




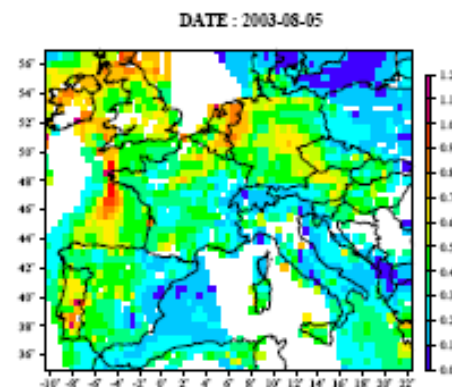
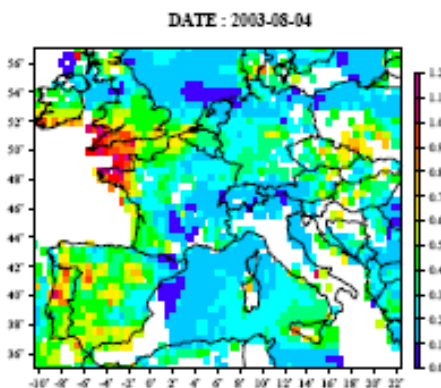
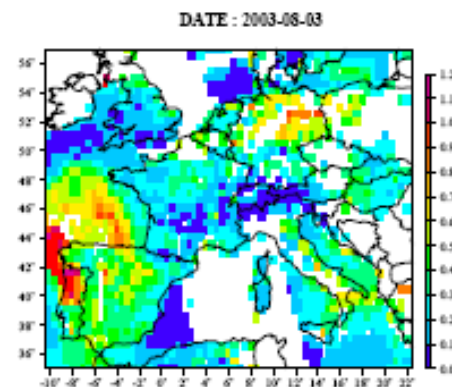
# August 2003: a large-scale smog episode



## Ozone and aerosols



Vautard et al.(2005)

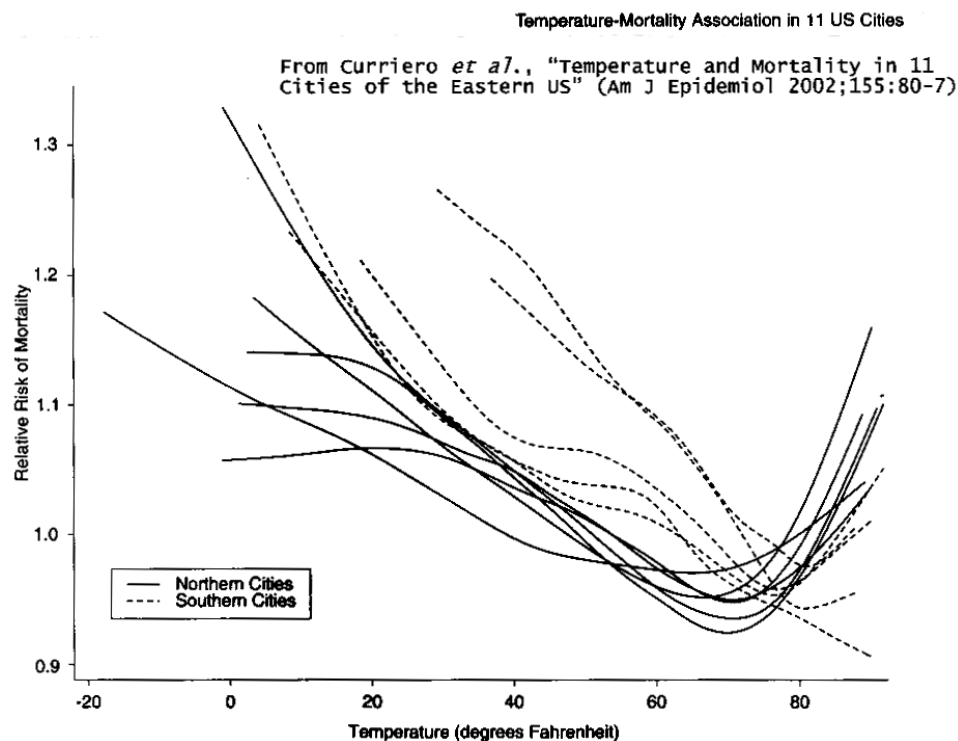


Hodzic et al., 2007

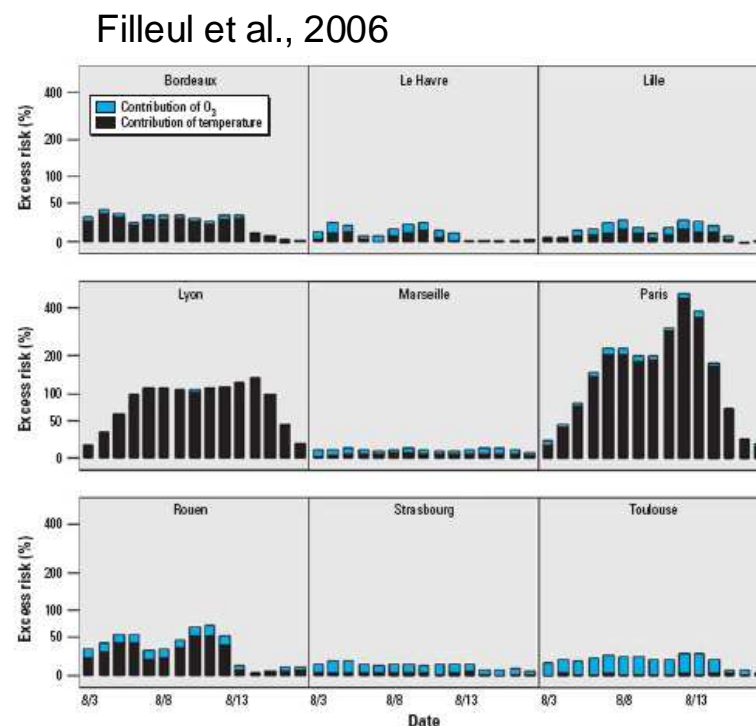




# Respective contributions of heat and air quality?



Mortality versus temperature in several american cities



Mortality due to temperature and bad air quality in Aug 2003



# Conclusions

- More unprecedented phenomena to come
  - Understand and predict future regional climate extremes
- Megacities under climate and air quality pressure
  - Detailed health effects not well known
- AQ and climate to be studied together