



Dynamics of international scientific mobility: A preliminary exploration

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International scientific mobility

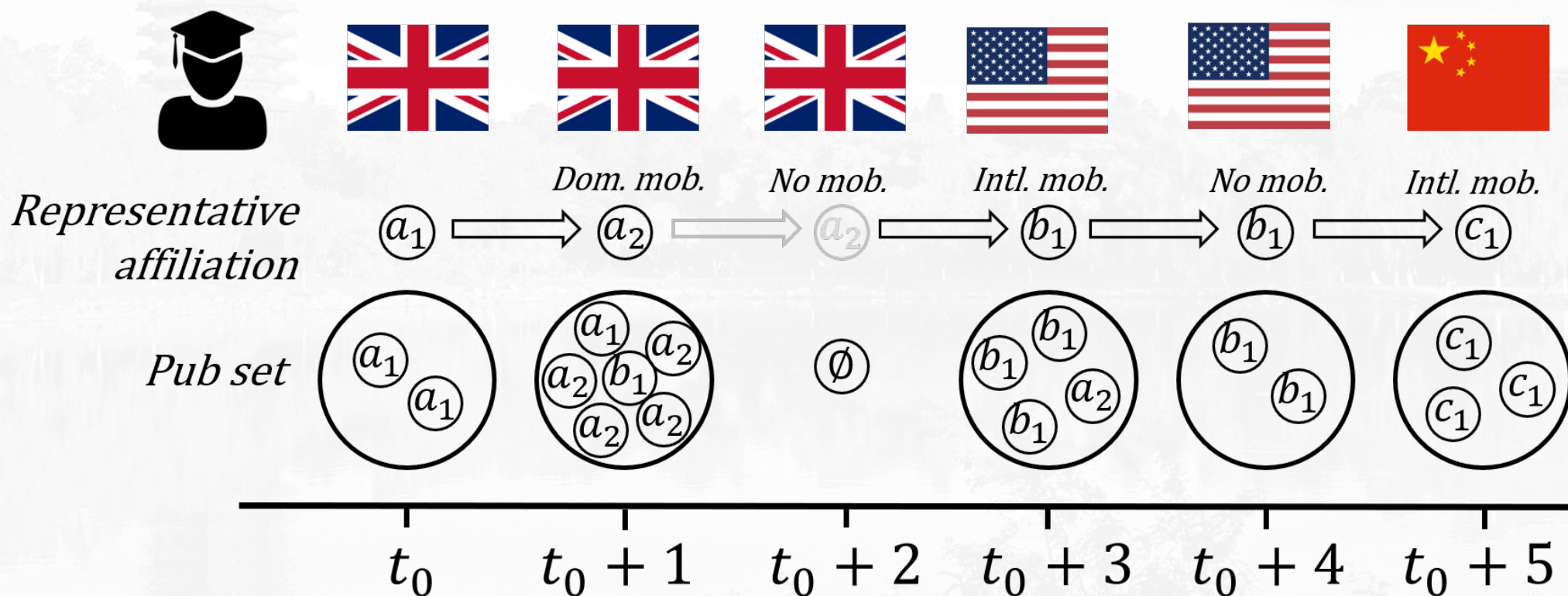
- International scientific mobility is the most important feature of the globalization of modern science.
- Previous studies have painted a nuanced picture of the vast improvements in the patterns of mobility, both in terms of knowledge and material, with the rapid development of technology.
- It remains unclear how the patterns of international mobility in science have evolved at the macro level in the past few decades.



Identification of international scientific mobilities

Capturing scientific mobility through the changes of scientists' institution

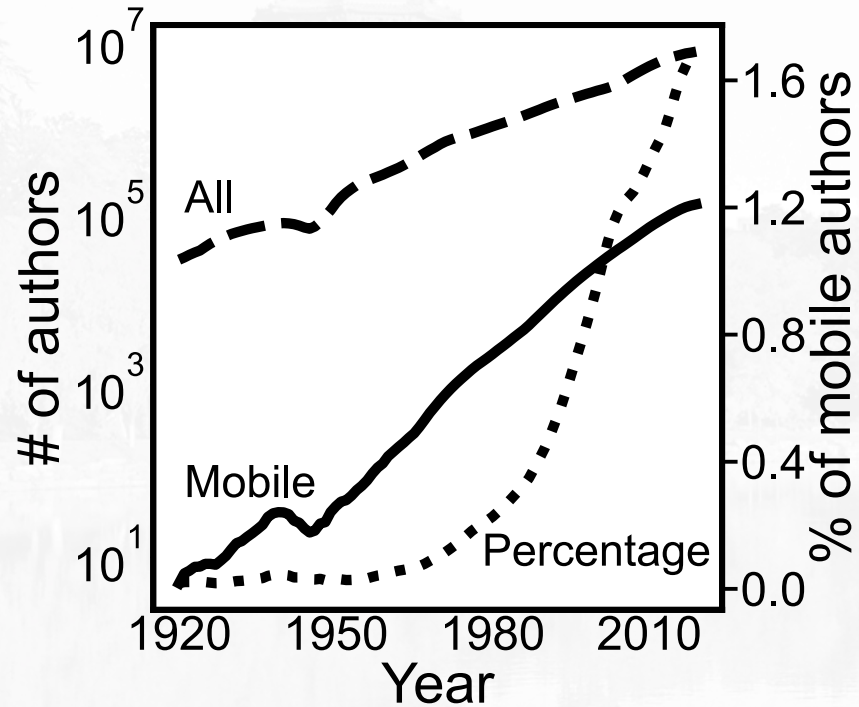
Microsoft Academic Graph, 1800-2021



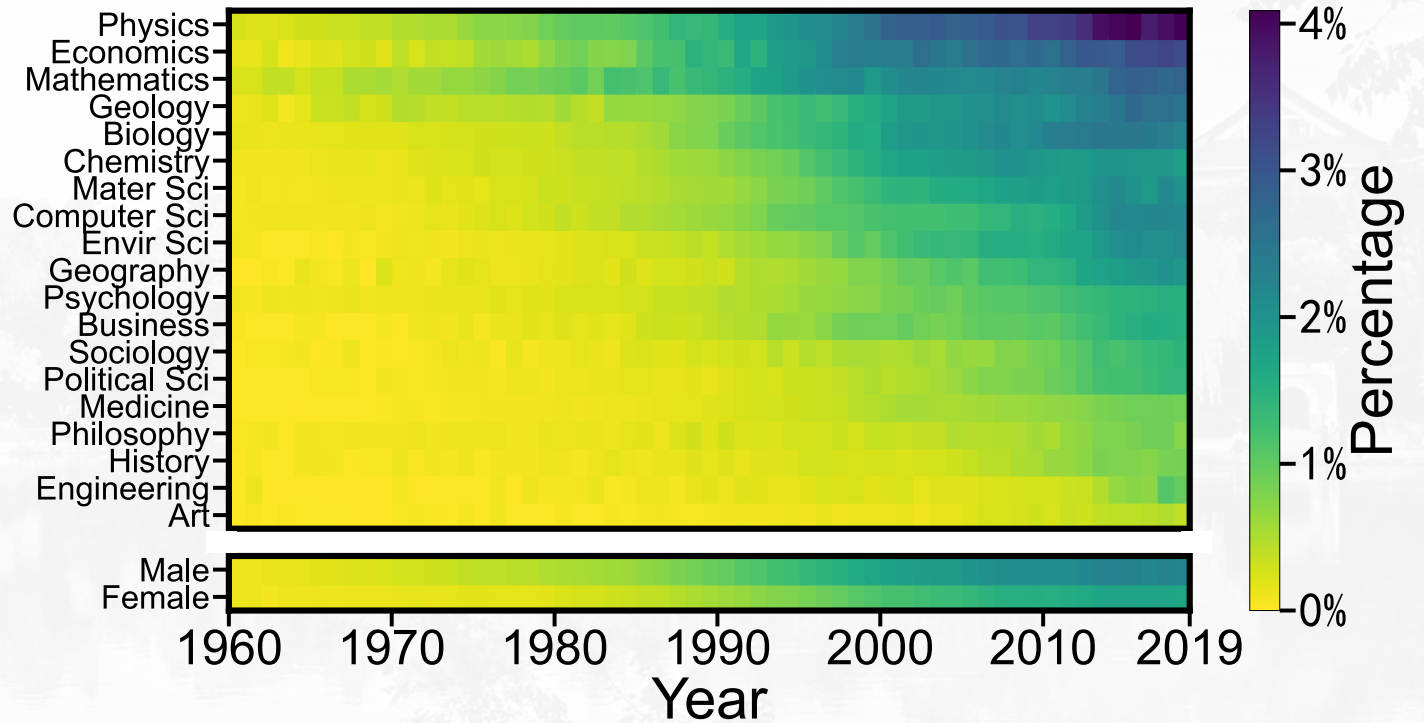


The development of scientific mobilities

Overall



Discipline, gender, and mobility

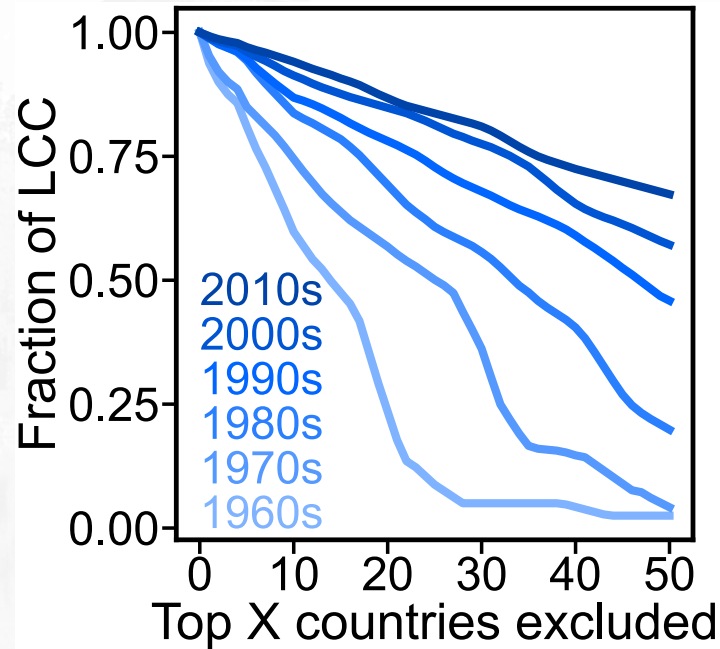


The fraction of mobile scientists have increased dramatically over the past few decades.

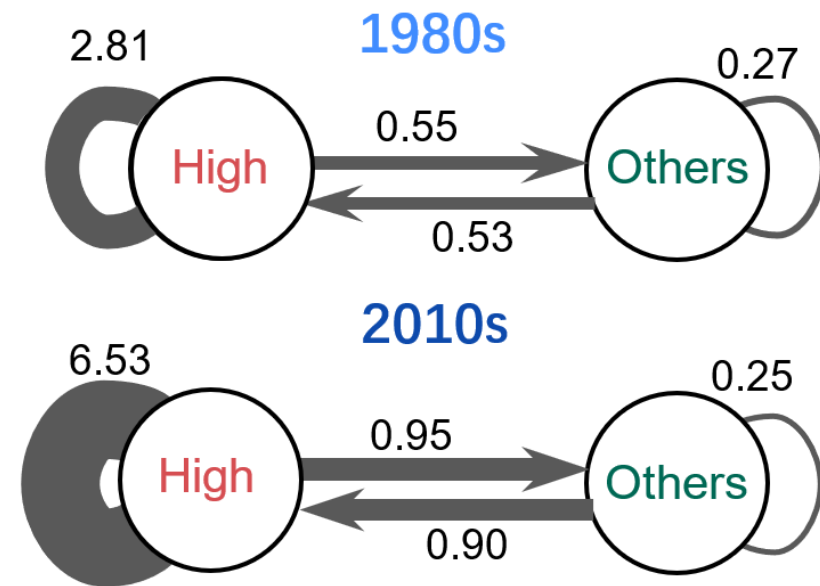


Disparities among countries

Changes of largest connected component (LCC)



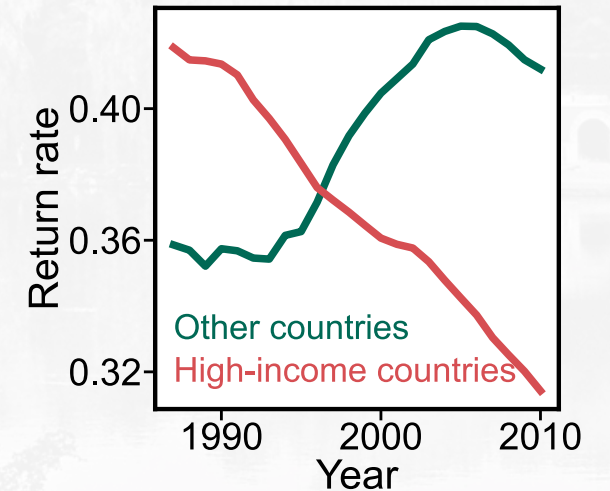
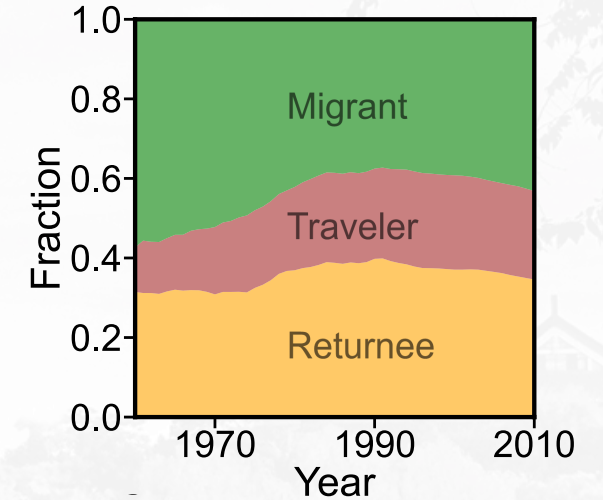
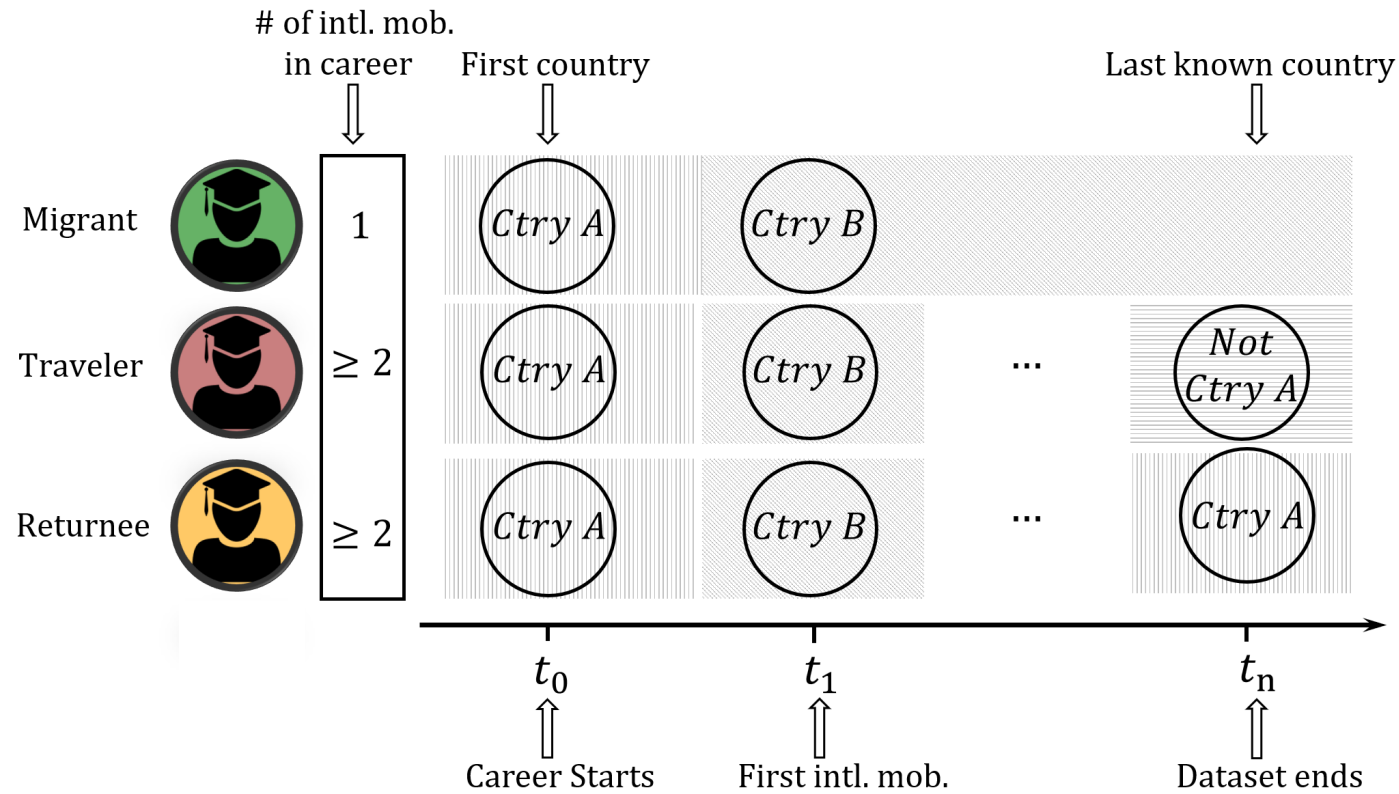
Mobility within and between high-income countries and other countries



Scientific mobilities have become more diverse with growing interactions between high-income and other countries.



Mobility trajectory and returnees

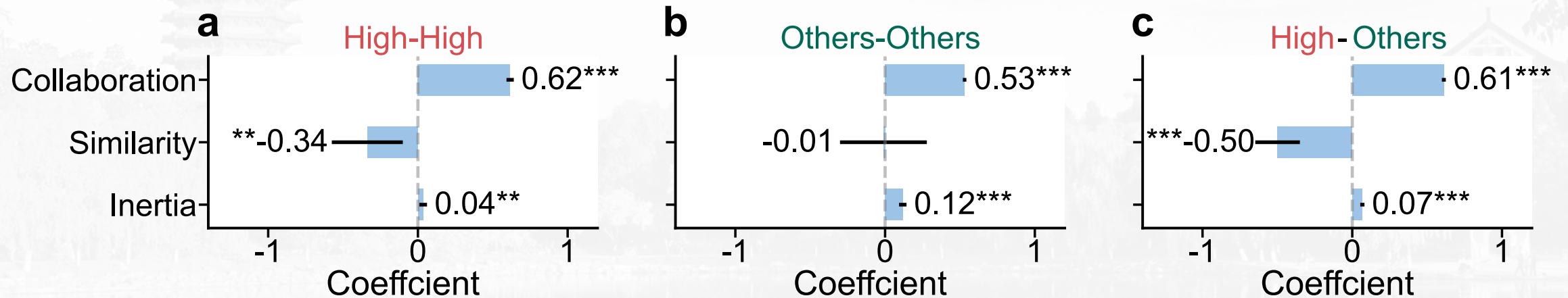


Scientists originating from high-income countries now show less incline to return to home countries than those from other countries.



Potential factors of international scientific mobilities among countries

Results of the two-way fixed effect regression



Scientific collaboration and previous mobilities between two countries positively correlate to the number of mobile scientists between them.



Discussion

- The center of “gravity” of scientific migration destinations has been moving continuously eastwards by about 1300 km per decade from 1970 to 2014 (Czaika & Orazbayev, 2018).
- International scientific mobility acts as a lens into the evolution of science and its interactions with economic societies.
- Global socioeconomic development has weakened monopolistic attractions for scientists in high-income countries (e.g., better living conditions and academic environments), as a result of which the intrinsic motivation of scientists to move back to high-income countries has diminished.
- Scientists establish collaborations with existing diasporas in new countries as an effective way of initiating international migrations, which is indicative of a potential “preferential attachment” mechanism.



Any questions?

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