networks in motion

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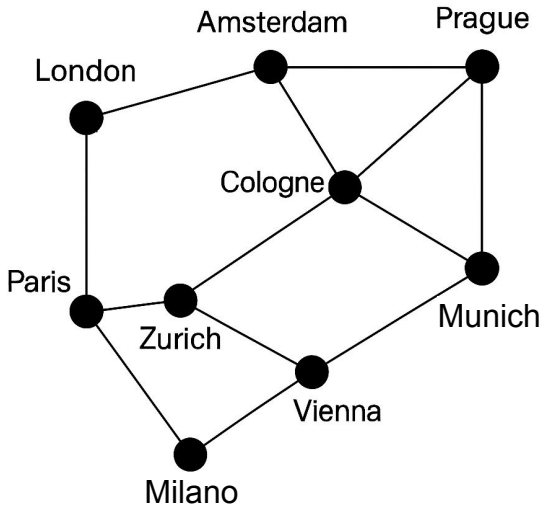
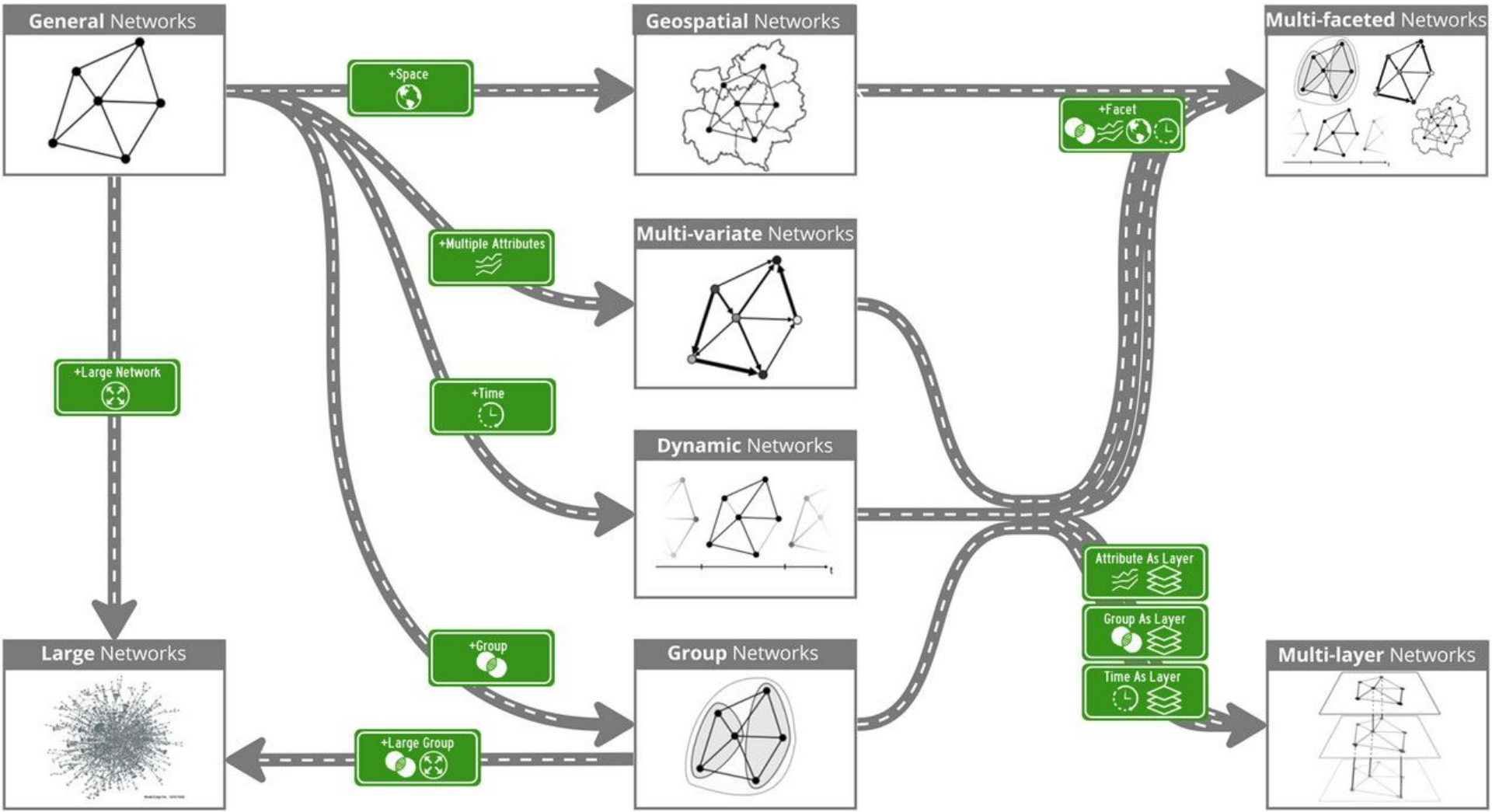
networks

things related to other.. *things*

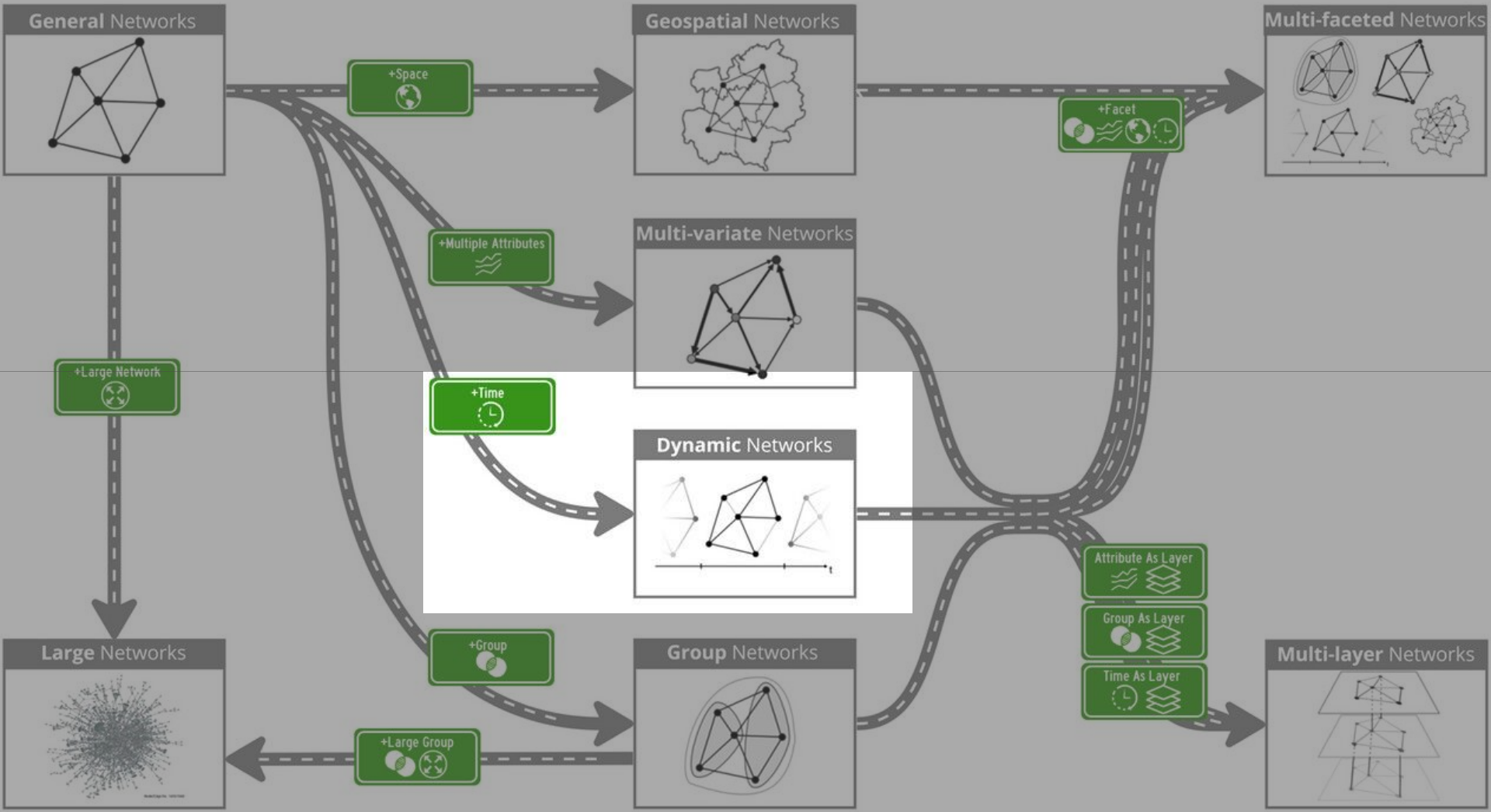
like cities (*nodes*) connected by roads (*links*)

simple, yet *complex*





V. Filipov et al., "*Are We There Yet? A Roadmap of Network Visualization from Surveys to Task Taxonomies*" (2023)



V. Filipov et al., "*Are We There Yet? A Roadmap of Network Visualization from Surveys to Task Taxonomies*" (2023)

time

snapshot *(instant)*

aggregate *(duration)*

temporal *(continuous)*

complexity

(or how things get out of hand)

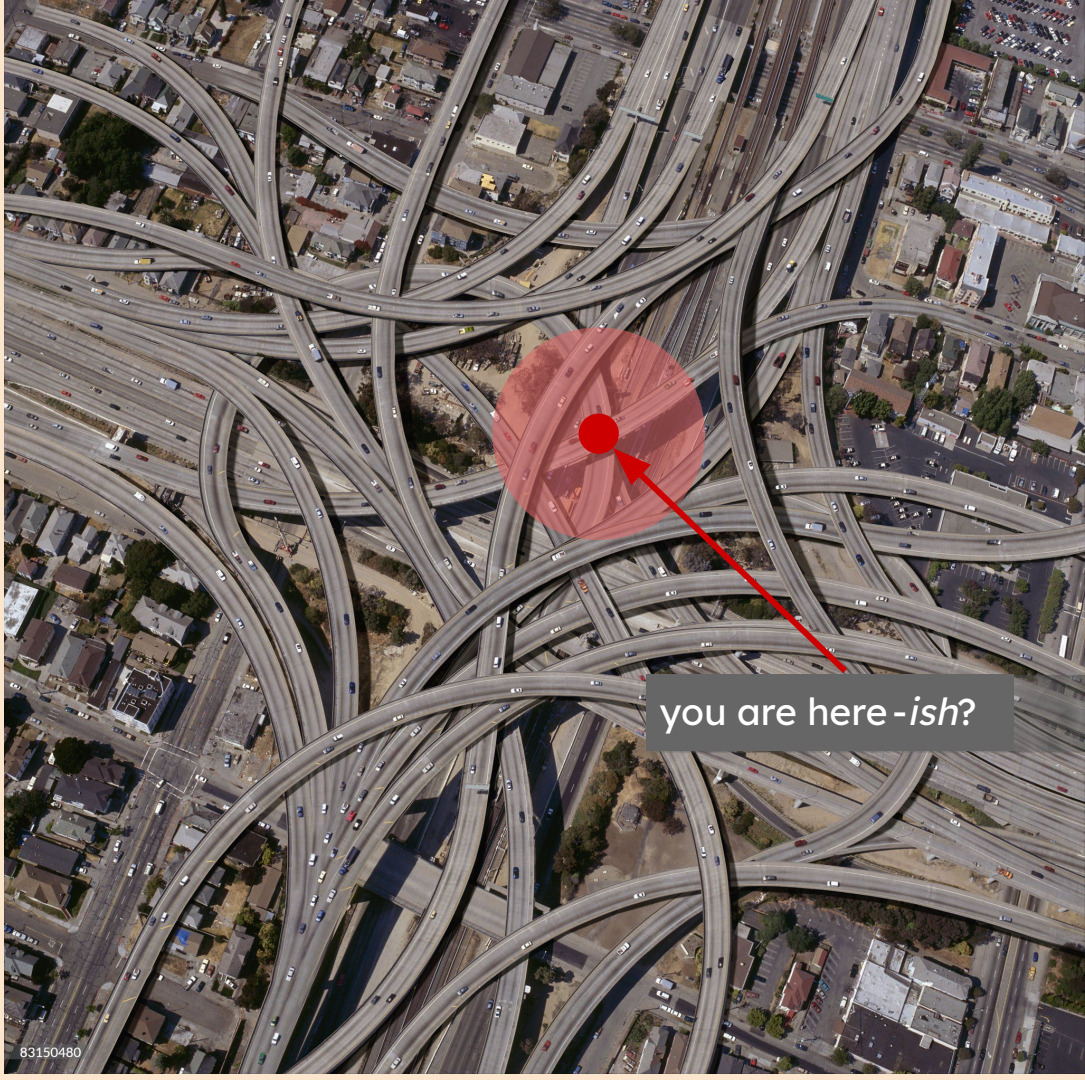
always use generic solutions

show everything all at once

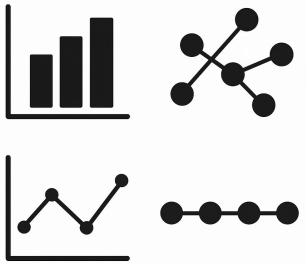
get lost in the details

neglect cognitive models

ignore uncertainty



how do we draw them



approach	good to	bad to
node-link	show structure	show dense networks
hierarchical layout	show organization	show overlaps
glyph encoding	show extra info	show many attributes
timeline or animation	show evolution	show comparisons
metric plots	show trends	show network
multiple views	show facets	show simplicity

there's more...

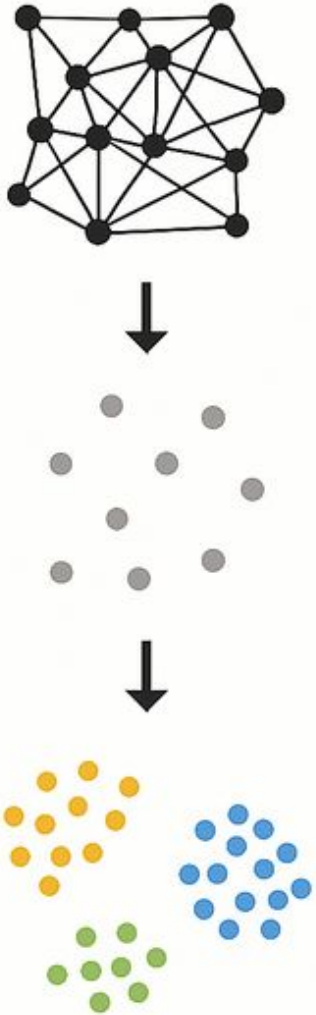
when layout isn't enough

graph embeddings

dimensionality reduction

interesting directions

...but hard to interpret



thanks!

networks in *motion*

tl;dr
networks aren't static.
to understand complex systems
we need to see them in motion

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