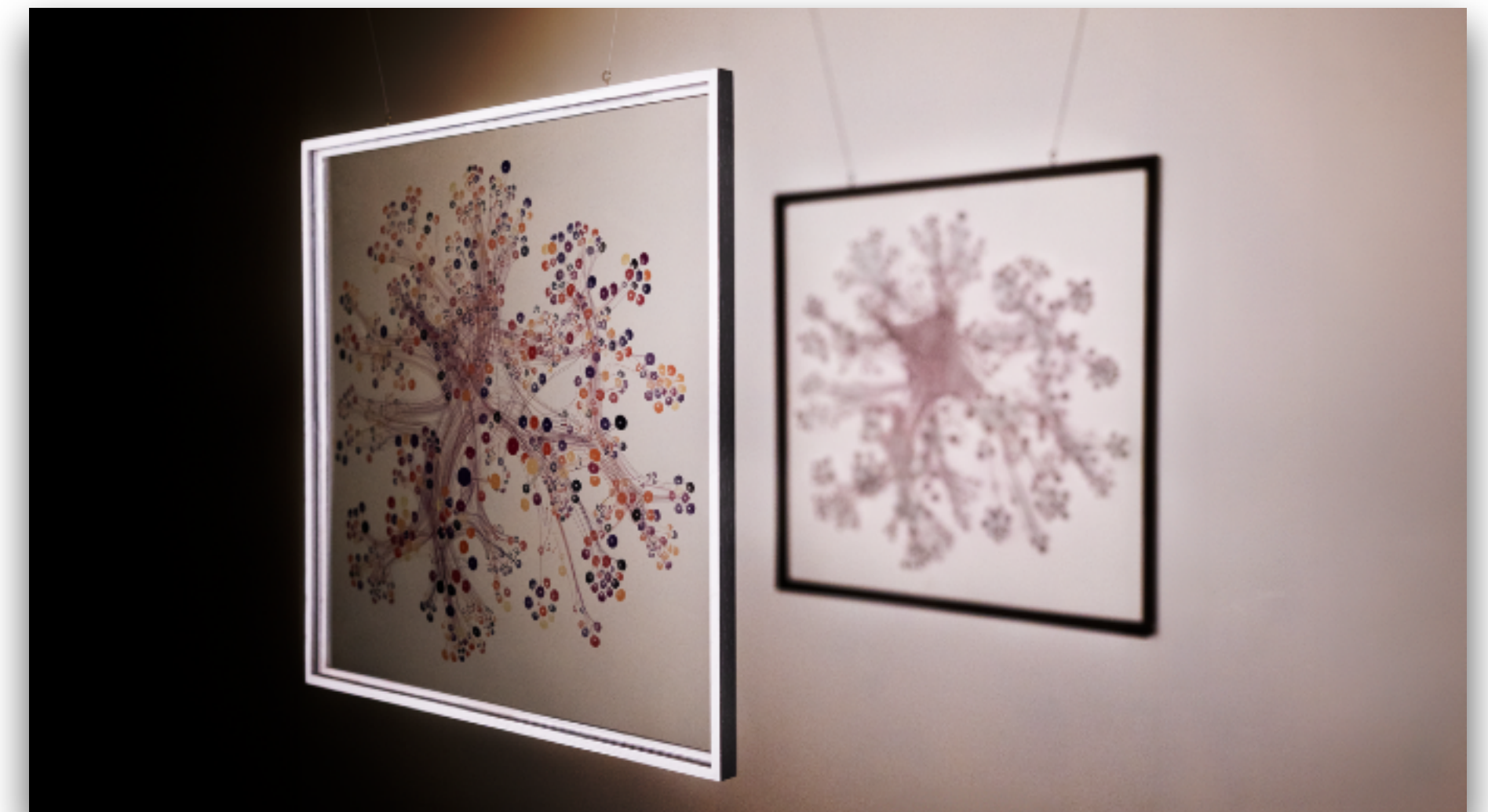# Outline

1. **Are simple models enough to study complex systems/networks?**
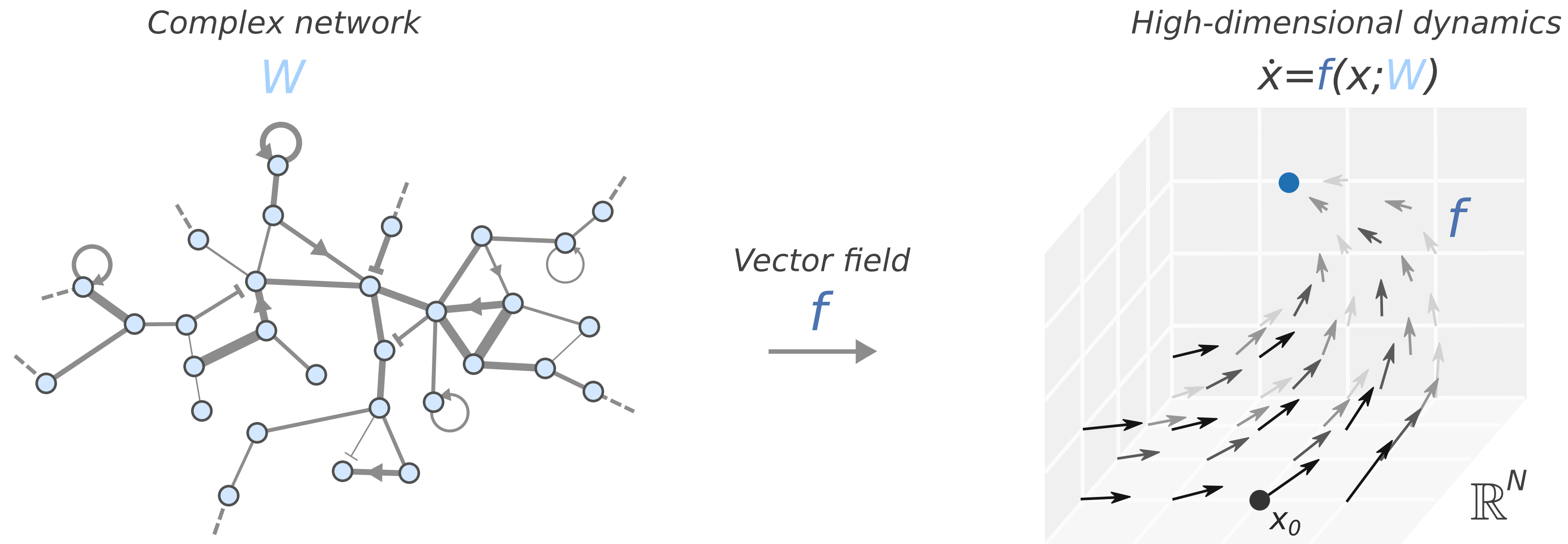
2. "Simple" ways to encode structural complexity

   (a) latent metric space

   (b) stub types

Modeling the dynamics of complex systems

Complex network

W

Vector field

f

High-dimensional dynamics

$\dot{x}=f(x;W)$

$\mathbb{R}^N$

x_0

High-dimensional dynamics are hard to analyze and extracting meaningful intuitions from them is difficult.

Most mathematical models involve low-dimensional representations of the networks and/or dynamical observables.