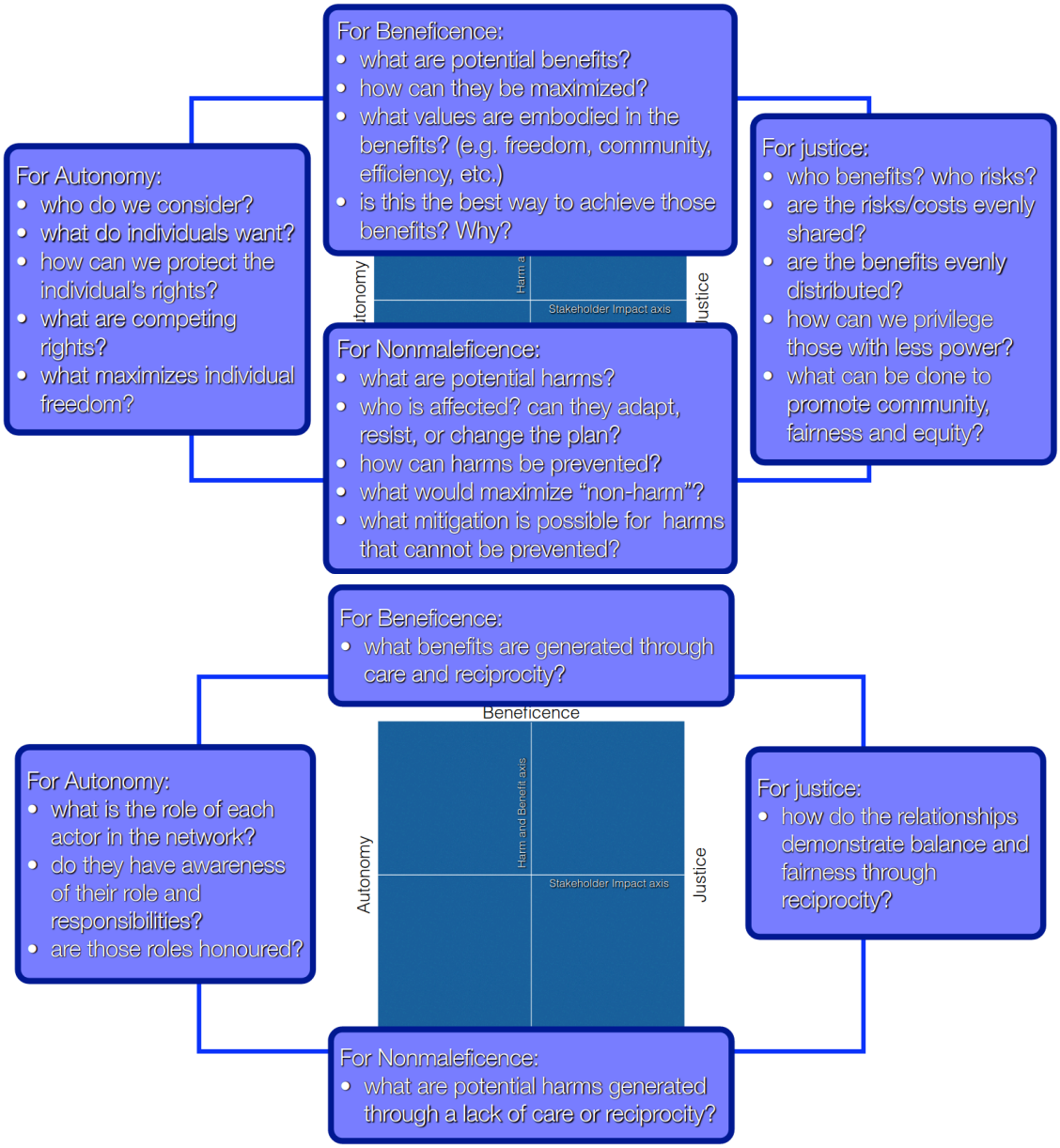
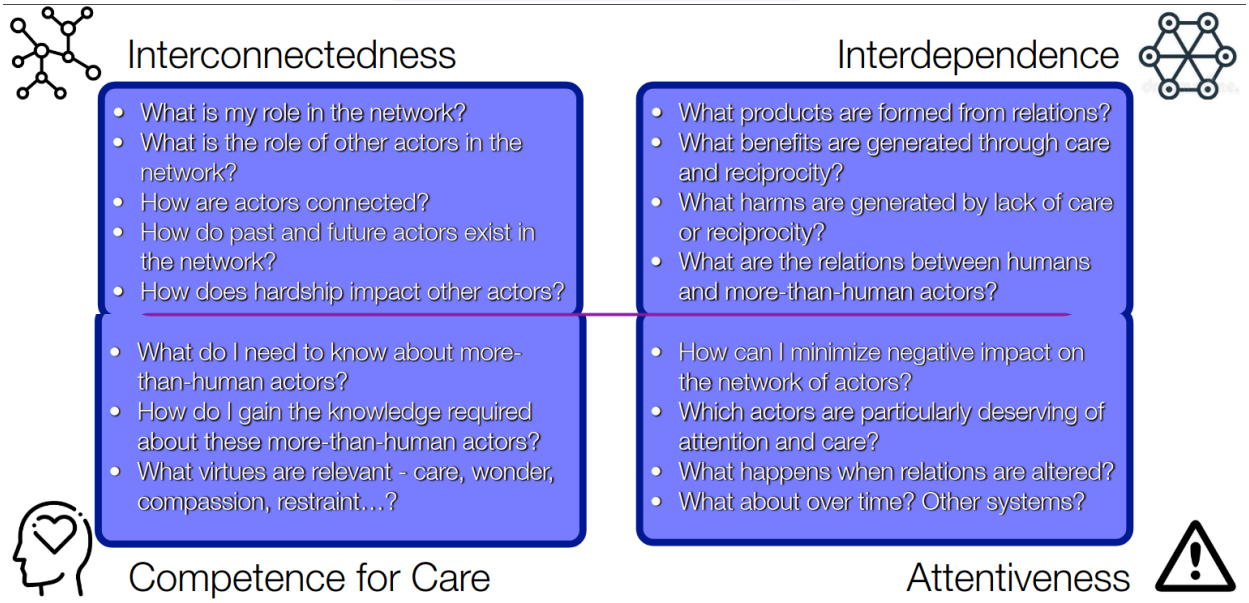
1. Specification: Making general norms more specific to a particular context
2. Balancing: Resolving conflicts between norms; weighing their importance
3. Justification: Evaluating the completeness and coherence of a decision





Postman's Five Things:

1. Culture always pays a price for technology
2. Technology has winners and losers
3. "Powerful ideas" are embedded within technology
4. Technological change is "ecological" – it has wide reaching implications
5. Technology tends to become "mythic"

Is Green Growth Possible? (Hickel & Kallis)

- Green growth requires decoupling GDP from resource use
- Trends: some relative, but no absolute decoupling
- DMC falls but MF rises as rich countries outsource production
- Productivity gains can lead to more demand
- Decoupling is at best temporary
- BECCS is unreliable – not economically viable, too much land use, too much storage requirement

Fish, Kin, and Hope (Todd)

- Fossil fuels as a kind of "kin" that is being "weaponized"
- Consideration of more-than-human actors
- "We as humans live in a very narrow spectrum of ideal conditions. … That's why it's very important to talk about ecology, the relationship."

Petrocapitalism in the Tar Sands (Carter)

- Capitalistic growth is fundamentally premised on the development and consumption of hydrocarbons
- "Resource curse": Oil-dependent governments become even more so, leading to vulnerability to price fluctuations, democratic stagnation, increasing inequalities
- Growth imperative forces high environmental costs
- Extraction is expensive so it's centralised, leading to unequal distribution; these profits need to be a merit good (Norway)
- We are running out of cheap and easy oil and up against climatic limits

Path to Sustainable Energy (Jacobson and Delucci)

- Electrification is a more efficient way to use energy
- Mainly solar, some wind, a little water
- We have the land to do this
- Issues: materials (lithium, rare earths, other metals) – use recycling, new technologies; intermittency and reliability – solve by using a mix of sources; cost – already improving; political will – need clear leadership

A Healthy Economy Should Thrive, not Grow (Raworth)

- We are addicted to growth: financially, banks pursue maximum return, publicly traded companies are pressured to grow; politically, growth creates more government income, international competition pressures countries; socially, there's consumerism
- Doughnut Economics
- Growth as the solution to everything is a myth
- Need an economy that is regenerative (circular) and distributed by design
- "Things grow up, and they mature, and only by doing so do they thrive for a very long time. … when something tries to grow forever, it's a threat to the health of the whole."

Nightingale's What is Technology

Way of Thinking about Technology	Exemplar user	Key Issue
Artefacts that solve problems	Engineers	Takes process as given, solves problems
Outcome problem-solving process	Innovation-Managers	Takes context as given, improves process
Artefacts, technique & regime	Sociologists	Takes history as given, counterfactual context
Co-evolving artefacts, etc	Historians of technology	Explores 'Long view' of history
Distributed co-evolution	Tech-Governance	Systemic interactions
After S&T coincide	Historians of Tech-change	Qualitative difference btw machines & systems
Way of looking at the world	Philosophers	Systems imposed frameworks