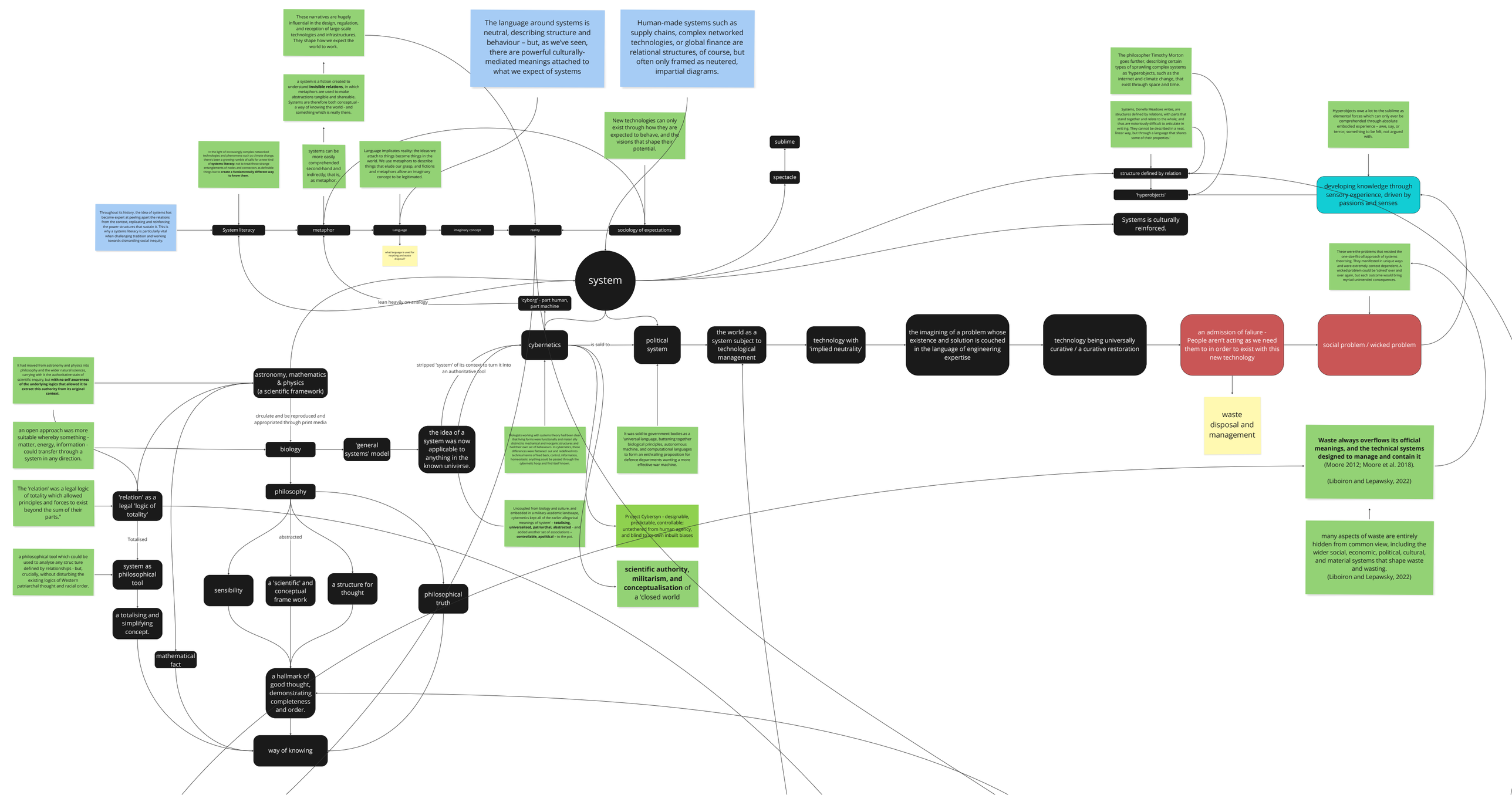
These narratives are hugely influential in the design, regulation, and reception of large-scale technologies and infrastructures. They shape how we expect the world to work.
The language around systems is neutral, describing structure and behaviour – but, as we've seen, there are powerful culturally-mediated meanings attached to what we expect of systems
Human-made systems such as supply chains, complex networked technologies, or global finance are relational structures, of course, but often only framed as neutered, impartial diagrams.
a system is a fiction created to understand invisible relations, in which metaphors are used to make abstractions tangible and shareable. Systems are therefore both conceptual - a way of knowing the world - and something which is really there.
New technologies can only exist through how they are expected to behave, and the visions that shape their potential.
In the light of increasingly complex networked technologies and phenomena such as climate change, there's been a growing rumble of calls for a new kind of systems literacy; not to rival these strange entanglements of nodes and connectors as definable things but to create a fundamentally different way to know them.
systems can be more easily comprehended second-hand and indirectly; that is, as metaphor.
Language implicates reality: the ideas we attach to things become things in the world. We use metaphors to describe things that elude our grasp, and fictions and metaphors allow an imaginary concept to be legitimated.
sublime
spectacle
Throughout its history, the idea of systems has become expert at peeling apart the relations from the context, replicating and reinforcing the power structures that sustain it. This is why a systems literacy is particularly vital when challenging tradition and working towards dismantling social inequity.
System literacy
metaphor
Language
imaginary concept
reality
sociology of expectations
what language is used for recycling and waste manmad?
system
lean heavily on analogy
'cyborg' - part human, part machine
cybernetics
is sold to
political system
the world as a system subject to technological management
technology with 'implied neutrality'
the imagining of a problem whose existence and solution is couched in the language of engineering expertise
technology being universally curative / a curative restoration
an admission of faliure - People aren't acting as we need them to in order to exist with this new technology
social problem / wicked problem
waste disposal and management
The philosopher Timothy Morton goes further, describing certain types of sprawling complex systems as 'hyperobjects, such as the internet and climate change, that exist through space and time.
Systems, Donella Meadows writes, are structures defined by relations, with parts that stand together and relate to the whole; and thus are notoriously difficult to articulate in writing. They cannot be described in a neat, linear way, but through a language that shares some of their properties.'
structure defined by relation
'hyperobjects'
Systems is culturally reinforced.
Hyperobjects owe a lot to the sublime as elemental forces which can only ever be comprehended through absolute embodied experience – awe, say, or terror; something to be felt, not argued with.
developing knowledge through sensory experience, driven by passions and senses
These were the problems that resisted the one-size-fits-all approach of systems theorising. They manifested in unique ways and were extremely context dependent. A wicked problem could be 'solved' over and over again, but each outcome would bring myriad unintended consequences.
stripped 'system' of its context to turn it into an authoritative tool
It was sold to government bodies as a 'universal language, battening together biological principles, autonomous machine, and computational languages to form an enthralling proposition for defence departments wanting a more effective war machine.
Biologists working with systems theory had been clear that living forms were functionally and materi ally distinct to mechanical and inorganic structures, and had their own set of behaviours. In cybernetics, these differences were flattened 'out and redefined into technical terms of feed back, control, information, homeostasis: anything could be passed through the cybernetic hoop and find itself known.
Uncoupled from biology and culture, and embedded in a military-academic landscape, cybernetics kept all of the earlier allegorical meanings of 'system' – totalising, universalised, patriarchal, abstracted – and added another set of associations – controllable, apolitical – to the pot.
Project Cybersyn - designable, predictable, controllable; untethered from human agency, and blind to its own inbuilt biases
scientific authority, militarism, and conceptualisation of a 'closed world
It had moved from astronomy and physics into philosophy and the wider natural sciences, carrying with it the authoritative stain of scientific enquiry, but with no self awareness of the underlying logics that allowed it to extract this authority from its original context.
astronomy, mathematics & physics (a scientific framework)
circulate and be reproduced and appropriated through print media
an open approach was more suitable whereby something - matter, energy, information - could transfer through a system in any direction.
biology
'general systems' model
the idea of a system was now applicable to anything in the known universe.
philosophy
The 'relation' was a legal logic of totality which allowed principles and forces to exist beyond the sum of their parts."
'relation' as a legal 'logic of totality'
Totalised
abstracted
a philosophical tool which could be used to analyse any struc ture defined by relationships - but, crucially, without disturbing the existing logics of Western patriarchal thought and racial order.
system as philosophical tool
sensibility
a 'scientific' and conceptual frame work
a structure for thought
philosophical truth
a totalising and simplifying concept.
mathematical fact
a hallmark of good thought, demonstrating completeness and order.
way of knowing
Waste always overflows its official meanings, and the technical systems designed to manage and contain it (Moore 2012; Moore et al. 2018).
(Liboiron and Lepawsky, 2022)
many aspects of waste are entirely hidden from common view, including the wider social, economic, political, cultural, and material systems that shape waste and wasting.
(Liboiron and Lepawsky, 2022)