

Every so often there will be a burst of Twitter conversations on the “Reverse Conway Manoeuvre” and related topics.

I find this encouraging, but not for a reason you might suspect.

Hear me out; this is important.

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These conversations are signs of the development of a sub-community within the software community that is aware of structural design (as distinguished from aesthetic design) as an important discipline unto itself. Aside from the field of Architecture, I think this is rare.

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I am here to tell you that the software design community is in possession of something precious. The community must husband it and pass it on to the larger world.

Let me explain why this is important.

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Here is my bottom-line view of Conway’s Law after a half century.

It is a cautionary tale about the high social costs of missed opportunities that might have arisen from human communication paths that should have, but didn’t, exist.

My argument:

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Politics is design. A body of law, precedent, and regulation is a design document; its artifacts are the systems within which we conduct our lives. But it is barely self-aware; it has been subject to local pushes and pulls, in time and space, throughout our history.

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I'm going to show you two examples of unaware political design that affects us all and exacts a very high social price.

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A. The Invisible Hand scales up perversely.

Our economic system contains a tragic flaw that, at scales not contemplated by Adam Smith, is producing systemic inequity and environmental destruction.

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These outcomes are, in part, phenomena of scale, both of numbers and of interconnectedness. They are also, in part, consequences of non-communicating design teams specifying distinct subsystems that have mutual dependencies.

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Here is this argument in more detail, framed within an educational purpose. You will see multiple perverse social outcomes that show up at scale.

<https://melconway.com/Home/pdf/mapcamp2021-mc.pdf>

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If indeed politics is design, we have a politics with no effective design review process.

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B. Our liberal tradition is no match for the new alliance of very high connectivity and malicious opportunism.

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This alliance is manifesting as conspiracy theories (e.g., QAnon), massive propagation of disinformation (e.g., anti-vax/anti-science, Stop the Steal), and epidemic violence (e.g., threats to public officials, mass shootings).

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We are befuddled by these outcomes, just as our predecessors were befuddled by epidemics such as Plague and Smallpox.

About two centuries ago the medical community pulled ahead of the political community by adopting the germ theory of disease.

https://en.wikipedia.org/wiki/Germ_theory_of_disease

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Germ theory has enabled a productive approach to development of interventions by providing a

theoretical framework

within which investigators can obtain

physical evidence of transmissible pathogens
that connect disease at two levels: individual and population.

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The power of this combination of

1. A theoretical framework into which investigators can fit physical evidence of

2. Transmissible pathogens that connect

3. Individual disease and

4. Public disease

is that it forwards the body of knowledge of

5. Public-health interventions.

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Politics has no theoretical framework for generating new interventions parallel to that provided by germ theory. Instead, as in other pre-sciences, we are left with story-telling, which can be useful but is not an extensible platform on which to build.

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My research of the past two years has suggested an opening:

Repurpose Dawkins's Meme, not as gene-analogue but as Transmissible Pathogen where, in my view, it is truly useful. This suggests concepts such as "meme contagion" and "meme epidemiology".

<https://en.wikipedia.org/wiki/Meme>

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The meme-as-transmissible-pathogen concept applies easily to conspiracy, disinformation propagation, and epidemic violence, but can it be theoretically productive in terms of providing an extensible platform for generating interventions?

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My work says: Yes, but we have to deal with The Big Problem:
The way we're organized blocks our ability to do the work.

Conway's Law strikes again.

The work has required a creative synthesis of object design, applied mathematics, and psychology. It is weird new territory.

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I have extended psychological attachment theory using object-design concepts to arrive at an object definition of a meme (which, importantly, requires no physical existence; it is simply a commonly-held reference).



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Here is an early, and incomplete, diagram of an object model of the followers of a meme (in the dotted rectangle). Importantly, this is a form that could be, with a lot more work, turned into an agent-based simulator.

https://melconway.com/CBH/Attachment_Model.pdf

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In this recent draft summary of my work I characterize meme contagion as an emergent phenomenon of a population, and I use the emergence model to suggest that new interventions can arise from understanding low-level interactions within the population

https://melconway.com/Home/pdf/social_emergence.pdf

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Here's The Big Problem.

The people on the design team will need to speak a common design language. But the people required for this work barely speak with each other at all.

This is C.P. Snow's "Two Cultures" thesis. It's a corollary of Conway's Law:

https://en.wikipedia.org/wiki/The_Two_Cultures

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...The design organization is the academy. Its artifacts are populations of professors and students whose behaviors reflect their department-specific training.

I call the two populations it produces the "reading-list folks" and the "problem-set folks".

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We have got ourselves into trouble by mindlessly extending domains in which existing methods might once have worked. In the case of higher education we've done this by unquestioningly extending an ancient system originally built around disjoint skill-based guilds.

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Bottom line:

Our massively interconnected global-scale political system needs to be refactored.

Of course we don't have the foggiest idea how to go about doing this.
(Or how to obtain support to do it.)

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But at the very least, the design community needs to consider reframing

politics as a design problem.

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That will require applying structural design thinking in new directions.
That's where a self-aware design community comes in.

You are in possession of a precious resource. It's time to start thinking about how to apply that resource to the benefit of the world community.

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