AcII BookStream 001 ~ Khezri's “Governing Continuous Transformation”

A long-term series reading and discussing Bijan Khezri's 2022 book “Governing Continuous Transformation: Re-framing the Strategy-Governance Conversation.”

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A first participatory reading and discussion of Bijan's book.

SESSION SPEAKERS

Tyler Sullberg, Daniel Friedman, Bleu Knight

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TRANSCRIPT

00:07 Daniel:
Hello and welcome everyone. It's December 6, 2022. We're in ActInf Livestream number 001.01 (a numbering convention that will be explained soon). It's a discussion on the book "Governing Continuous Transformation by Bijan Khezri. And I'll pass the Bleu.

00:30 Bleu:
Hi everyone. I guess that's my job is to explain the bookstream numbering. So this is our first bookstream. That's why it's bookstream zero, zero, one. And this is our first zero contextualization video for this bookstream series.
So each week we will present a chapter, ish a chapter or so of the book and then periodically we will get together for the one, dot two and so forth. Those discussion action. So if you want to participate either in a contextualization video or in a discussion video, please get in touch with us and we would love to have you on the stream. And I'm Bleu. I've been here before so hopefully you've seen me before and know me by now.
And I'm an independent researcher in New Mexico and I will pass it off to Tyler. First time appearance, I think, in the active Coherence Institute. So Tyler, do you want to introduce yourself?

01:26 Tyler:
Yeah. Cool.
Thanks for having me. This is my first time here, active inference lab. So I have an unusual background. I actually dot one from an academic background at all. A lot chaos been about applied governance.
So I actually started as a strategy consultant working in major correlation. More recently gotten more into DAO governance. I currently lead product and protocol design for the 4K protocol. It's a project that's connecting the physical world to the on chain world. And I'm also a contributor at Metagov where I think about how we can model these abstract formalisms about governance in a real world setting.

It's a lot of times I think about Dow governance but most recently it's Beren thinking about active inference and implications for real world settings.
Conor awesome.

02:14 Bleu:
So we are a participatory online lab that is communicating, learning and practicing applied active coherence. These are all of our media links and we will be recording and archiving this Livestream for future reference. Everyone is welcome and hopefully we will be following good etiquette for live streams and not arguing or talking over each other for the duration of the bookstreams.
Okay, so this is our first book stream. Our goal is to learn and discuss this textbook governing Continuous Transformation reframing the strategy Coherence conversation. It's a 2022 book by Bijan Kesri and this video like always is just an introduction to some of the ideas, not a review or a final word at all. So we will just go through here the sections of this bookstream we're going to do the Bookmap and the roadmap, some keywords, the preface, part one and chapter one will be covered in today's video and in the coming weeks we will be continuum to discuss this.
03:20 So get in touch if you want to partake in these conversations.
So I guess we introduction ourselves briefly backwards. So if either you guys want to maybe mention something you're excited about or that you liked or remembered from the book from these first sessions, otherwise we can go on to discover it. I think we have a lot of material. Tyler, what are you most excited about?

03:46 Tyler:
Yeah.
I mean, I think for me, especially being in real world organizations, nonprofits, a lot of times we think of uncertainty as something that can be wished away or something that we're incrementally going to solve. Like, oh, if we only were collecting more information, we would be in a better spot, or we had more capabilities, we wouldn't have this problem. But a lot of times we kind of get very anxious about that uncertainty rather than we're an active infrastructure force. Energy governance, that uncertainty is placed at the center, and it's something you can actually take ownership over but also be a source of creative growth. And so I think that's really exciting and inspirational and really excited to be here today.
Cool.

04:26 Bleu:
I'm excited, too, to unify some of the concepts of active inference with governance, which I know a little bit about, but not very much. And now that we're formalizing our structure as an institutional entity in active Inference Lab Institute, I'm excited to learn more about governance and how things should work. Okay, so this book has four parts. So we're here.
We're not even in part one yet, but we're going to go over to the beginning of part one today. So part one is reframing the strategy governance conversation. Part two is about free energy governance, and part three is a conclusion for the book. And then there are some interviews in Parr four, along with acknowledgements and analog. And this is from the Bookmap software.

So this is like our roadmap for a book. But this Bookmap software is used in trading. So if you guys have never seen it, that's what these graphs are from. So when I think about Bookmap, I always think about that. Okay, so our roadmap for today.
So we're going to get into the preface.
05:27 There are no action headings, so we just kind of chunked out, like, what makes sense in terms of the text and how it reads. So we're going to go over a summary of FET, how to ground firms in the framework of active inference, strategy governance models versus meta governance, the triplet structure of free Energy governance, and then realist and anti realist in Management science. And then just a brief intro to part one. And then chapter one, which is pretty short thinking, born of Curiosity, Revolt, and change.
So here is a huge list of preorders of keywords that we're going to get into today. And I think Tyler is going to start us off in section one in the preface, in the summary of the free energy principle, Tyler is going to start us off talking about the FEP.
Tyler.

06:28 Tyler:
All right, so the free energy principle, or FEP, as we're going to be calling it, this is John's definition that he gives in the preface. So the FEP is a mathematical formulation that explains from first principles the characteristics of biological systems that are able to resist decay and persist over time. It rests on the idea that all biological systems instantiate a hierarchical, generative model of the world and personally minimizes its internal entropy by minimizing free energy. Bleu anything you want to add there?

06:58 Bleu:
No, I think it's best. Like, we could take a deep dive into the FEP. There are many live streams where that's done. So if you want to learn more about the free energy principle, I would just refer out to other live streams. It's best here to take what Bijan presents, the aspects that he's using, and go forward from there.

07:16 Tyler:
Cool. And I think similarly, we'll do a similar cursory treatment of Markoblindas. And so Markov blanket, we could think about it is that it's a statistical correlation for defining the internal versus the external. So the definition that he gives is Markov blanket's establish a conditional independent between internal and external states that renders the inside open to the renders the inside open to the outside, but only in a conditional sense. So the internal states only see the external states through the veil of the Markov blanket.
Again, huge topic. Not going to go super into it. What's going to add anything?

07:50 Bleu:
Bleu no, it's great. And there are many live streams, really, if you want to get into probably the Emperor's new Markov blanket.
So it's maybe where we undertake, like, a very thorough discussion of the Markov blanket. If you want

more information there.

08:05 Tyler:
Cool.

08:06 Bleu:
All right. So grounding firms in the framework of active inference.
So here is a claim from the book. Learning to active coherence will determine the firm's competitive advantage and survival in a discontinuous and distributed world. The more fluid the boundaries between firm and eco niche, the more important the definition of what constitutes a system and how nondisciplinative Markovian boundary preserve the firm's integrity. I e belief systems. Our interest is shifting away from pursuing deterministic truth through clever analysis towards designing entailing a generative selforganizing model that empowers the firm to master the shifting cognition independencies between the known and unknown and what lies within and beyond its control.
So there's a lot there. So I think these next keyword slides hopefully will unpack it a little bit.
09:07 Active inference, which we've seen many times in active inference lab institute, is a process theory grounded in the free energy principle that explains behavior, perception, planning, and action in terms of probabilistic coherence. Bijan doesn't yet mention active inference, but he talks about learning to actively, infer which I'm going to actively infer means active inference. And here we see this classic action perception loop where we have internal states and external states separated by a Markov blanket or a nondisciplinative Markovian boundary, and we have sensory input and action.
And these are the ways in which an agent can interact with this world. Do either of you guys have anything to add here? Daniel.

09:58 Tyler:
Sure.

10:01 Daniel:
In that foraging, I found it really interesting when there's increased fluidity or fuzziness or blurriness of the engagement of the firm with the niche or the context of the community.
In those cases, it's like more important to have and uncertainty oriented definition of what the thing is. And that is what confronts every organization today.

10:30 Bleu:
Yeah, interesting.
Okay, so he talked a little bit about shifting away from deterministic truth. And so I like Googled because I'm a truth person, I'm weird about truth, if you've ever listened to me talk about it before. So deterministic truth is like the truth. And I liked this paper. I just googled it.
What do people talk about? What is deterministic truth? And I found this paper approaching deterministic and Probabilistic truth a unified account. And in this paper, it's a 2021 paper. So pretty new.
In this paper, they talked about the truth itself, like the truth being either deterministic I think about that

like hitting Abel's eye, like the truth is the number seven. And then probabilistic truth is more like a probability distribution around that truth, like hitting seven plus or minus the standard deviation or like a probability density. Right. And this paper talks about, like, deterministic and probabilistic truth like that.
11:34 The truth is one of those things.
And then also there are ways to approach it, like you're approaching your search of the truth in either a determinalistic or probabilistic way. So I thought that this was an interesting read and kind of you are interested in delving deeper into, like, deterministic versus probabilistic and these theories and approaches and truth likeness. I thought this was a cool read.

12:00 Tyler:
Yeah, I think. Oh, sorry.
One thing to add there is, I think our personal ideas about what truth are, like, whether it's terminalistic versus a probabilistic conception of truth really carry over onto the organization level. And so whatever kind of delusions you have about your personal truth in your personal life, a lot of times they view the organization as like the CEO views the organization as an extension of their own self. And so their own worldview gets carried over and strapped onto the organization's worldview. And so it's really interesting that you could kind of frame these philosophical Dean about truth that are often applied at an individual level and then kind of like, scale that up into an organization.

12:41 Bleu:
Yeah, very cool. And we see that in this generative self organizing model. Again, this is kind of like it was cool to just search up what is a self organizing model. And we see generative model a lot. We don't really see self organizing model.
We see generative model in terms of self organization. But a generative selforganizing model, like, what is this really? And so this is just from this Stanford machine learning cheat sheet. Supervised learning cheat sheet. So here it says discriminative models divide the data space into classes by learning the boundaries.
And this is like the different neural networks, whereas generative models understand how the data is embedded into the space like an auto encoding or boltsman machine or self organizing maps. So this is like a self organizing model. And you can really see here this is like a decision boundary on the left in the discriminative model and either it's a cat or a dog.
13:43 And on the right there's a generative model like it's a cat with some degree of certainty or it's a dog with some degree of certainty. And so you see these like probability distributions.
Like probably it's a cat but then there's like some fuzzy like if your data point lands like a little bit in the red or a little bit in the Bleu, like then it might be a cat or it might be a dog. Maybe we don't have enough information to tell. So I thought that this was a cool replication of the probabilistic truth versus deterministic truth. Like either you're looking for cat or dog or you're looking for with what probability. Is this a cat or a dog?
Do you guys have anything to add here?

14:22 Tyler:

Cool.

14:22 Bleu:
Okay, so this is moving on out of this claim into the next claim. The firm is envisioned as an inactive, sophisticated and resource dependent inference machine in the form of a generative learning model. Essentially is a statistical model linking in circular causality action perception, firm resources and the unknown external world. And I just put this active inference loop up here again.
So you have the firm and the world. The firm would be the agent and then you have the resources of the firm which would be like the internal states and then the external world which is everything that's not the firm. And I highlighted these terms inactive and sophisticated because there's a dot, two unpack here, and I think it's kind of in the textbook. Maybe like, you can say the words, but unless you open them up and look what they mean inside, look inside of them, like, you don't have any idea the kind of Seth that goes behind these things.
15:22 Do you guys have anything to add there on that? Enactivism is a position in cognitive evidence that argues that cognition arises through a dynamic interaction between an acting organism and its environment. And so these are the four es of cognitive science or cognition. And they're embodied, active, extended and encultured. So cognition is grounded in our senses and concrete experience that's enacted means it's goal directed action in the real world.
Extended is cognitive systems include the tools, the devices, the people around us, our smartphone, these kinds of things and embedded or that's kind of what we always refer to as encultured. But I think that they kind of mean the same thing. So this is cognition is woven into culture, and learning is done in a social concept. So these are the embodied so when you say the firm is active yeah, that's it. It's good for goal directed.
It's doing goal directed action in the real world, inactive and sophisticated, or do you guys have anything to add there on the Four East?
16:30 Okay, sophisticated is from this paper, I believe, sophisticated inference by Friston and colleagues. And we've done sophisticated aspects of inference, I think, on a live stream, but I don't think we've ever done sophisticated inference. But the aspect of inference is like a later paper and covers this one a lot. So sophisticated inference is really, like, in deep time.
Right here, I'll just read the figure caption. So I have this, like, decision tree model picture from the paper, and it says this schematic summarizes the accumulation of expected free energy over past and trajectories into the future. This can be construed as a deep tree search where the tree branches of reliable actions at each point in time and the likely outcomes consequent upon each action. So this is 1234 time steps here and going off. So this is like a trajectory, the path of least action.
So we talk about the way that a system can decide and go forward in space.
17:36 So that's what's meant by sophisticated, I think.

17:41 Daniel:
Anil Seth, the purpose of introducing these terms from cognitive evidence and neuroscience like the four E cognition and of this type of model, it's not a novel idea to make a decision tree. That's how, for examples, early chess playing, artificial intelligences work. It's the way that the expected free energy can be calculated across these different paths of consideration with respect to a generative model that

are allowing new ways of thinking about these kinds of deep time and nested strategic questions.

18:22 Bleu:
Yeah, definitely. Okay, so temporal thickness and counter factual depth here in this claim, bishop says the proposal on offer here is that the mind comes into being when self evidence has a temporal thickness. Models can be thicker and thinner, deeper or shallower, depending on how far forward they predict, or counterfactuals depth, how far back they postdict. That is, whether they can capture how things might have ended up if they had acted differently. There is no real reason for minds to exist. They appear to do so simply because existence itself is the end point of a process of reasoning. Consciousness, I'd contend, is nothing greater than inference about my future. And in this this is from Bijon's book, but he's quoting Karl Friston 2017 paper.
So that temporal thickness goes back to the Sophistication, which is why so here you can see how far back you can post it. If I had done something differently, what could have happened?
19:24 This counterfactual reasoning and then prediction going forward into the future. Okay, going on to strategy governance models versus meta governance. All right, so I'm kind of out of my comfort zone here.
So I might call and Tyler to help me out a little bit. But Bijan says the common understanding underlying entrenched strategy governance models rather erroneously has been that action is a coherence of perception and therefore strategy must be environment driven. So I look up strategy governance model and it gave me like, some figures and this is one of them, and it appears to be pretty linear, but there's not a lot of feedback happening with the external environment. Like there's vision, a strategy roadmap design, and then insights come forward to the design and back to the vision and then there's like a performance review. So I don't know.
Tyler, do you want to give any additional comments here on this?

20:23 Tyler:
Yeah, I mean, I think something that could be potentially confusing for people who are maybe not coming from an academic background is that like, a lot of times when business leaders are thinking about how they're going to plan for the action of the organization to take what the strategy looks like, they're getting data, right? And they're having feedback from the bottom levels of the organization, feedback to the top levels. And so that they're taking information, they're creating a perception of that and then they're creating a strategy based on that kind of in a linear fashion the organization executes and at some point they reflect back like, hey, did this work or not? What do we do with our new information?
Right? But really what they're not realizing in the process of that is like in that linear flow, they're not recognizing how they're constraining the perceptions and actions of their organization in a top down fashion and allowing bottom up the information to change how information and actions can be changed in the future. So that kind of cyclical nature really to understand it's really more perceived in this linear way of like, hey, we're going to collect as much information as we can.
21:25 Our information is going to be imperfect, but we're going to get better over time rather than like, hey, fundamentally our actions and perceptions are constrained by the actions we're taking right now. So it's like just a different model for thinking about it.

It's a lot more linear and not doesn't have that cyclical causality baked into it.

21:47 Bleu:
Cool. And I think about here, it seems like it's very like tangential, like one after another after another after another. Whereas like active coherence lab kind of method, like you have to sometimes act in order to perceive, right? Like if you want to know whether the surface is rough or smooth, you have to move over the surface with your finger to determine if it's rough or smooth.
So it's action and perception that are happening simultaneously. And I think that is the shift that Bijan is calling for, as he says.

22:19 Tyler:
Yeah, and I think just to add a little bit, I think a lot of times business leaders cognitive of reality as independent existing out there. And it's just like a limitation of their tools and resources to understand reality rather than the nature of perception itself, of being able to understand reality. And so I think that's really like the fundamental difference and a lot of times people don't realize that that's even relevant at all.
And so that's why this is fun.

22:45 Bleu:
To talk about, that's for sure. Why like, what is deterministic truth? Where is that reality? And it all kind of links together.
So Bijan goes on to say, in fact, action upon the firm's eco niche, akin to pointing the light torch in the dark, determines perception. Inference is inactive. The generative model itself never encodes anything. It just expresses the circular causality among all four states. The generative models, hence is a model of the firm's eco niche.
If not, it is no good regulator and consequently the firm will rather sooner than later dissipate in the face of entropic forces. And so I included here a different kind of strategy governance model that's like the Dean Startup model that's like a little bit more action and perception happening in a more simultaneous way. I don't know if you ant to add anything here, Tyler.

23:38 Tyler:
Yeah, I think a lot of the way we talk about like, Dean Startup model of the Lean Start model is basically like, you don't necessarily know what people want. And also, it's not that you're discovering what people want is that you're putting ideas out there and finding how people respond to them.
And so it's basically truth is something that you create. You can create a new state of the world rather than uncovering it. So it's kind of like a method for uncovering something that's going to work. And a lot of times it's kind of done couch in very fluffy and also just like experiential terms like, hey, this works, we've done this, we built this company this way. But what's interesting about Active Coherence is that can take that very fluffy wispy framework and apply that into a more rigorous context.
A lot of these ideas that we're talking about now, they're not necessarily new, especially like startup world, but there hasn't been great language. We're talking about it.

24:34 Bleu:
Cool. All right, so here's another claim. Therefore, the firm's true governance challenge is a matter of meta governing its generative models as an enacted, sophisticated and resourcedependent belief system exercising the entire organization, quote the body itself in contours. We should now start seeing a model emerging that underwrites a form of autopilotis I eugenization. Effectively, it is all about casting inferences optimization mathematically by way of gradient descent, starting with two essential constituents.
First, hyperpria, which is the firm's resistance to entropy in order to persist. And two, episomic foraging and hypothesis testing, ie. Acting upon the eco niche to generate leaf evidencing data. Do you guys have any comments here or do you want to delve into this a little more. Daniel yeah.

25:26 Daniel:
One interesting usage of a term there is that the firm's true governance challenge is meta governance. And that's a term that is used differently or compatibly, but with a different focus in metagov. And so just to kind of flesh that out here, meta governance is being used in the sense of metacognition, like self reflection, memory, anticipation, action, planning, all of these individual level cognitive and metacognitive processes that we model in active inference. Often metagov in another sense is meant like social cognition, like relationships amongst organizations or amongst teams. So, like, within a team, you have their own governance structure.
Then also there's teams of teams, and that's a meta governance structure with respect to the team. And then that's very interesting because the two times that we've seen nested models, nested generative model models in active inference are the metacognition models and then the ecosystem nested models.
26:36 So it really brings integrity between thinking about what happens, like, within and across groups.

26:46 Bleu:
Cool. Thank you. Okay, so hyper prior Bayesian, statistics, physics. Hyperpriator is a prior distinctions on a hyper parameter that is on a perimeter of a prior distinctions. As with the term hyper parameter, the use of hyper is to distinguish it from a prior distribution of a parameter of the model for the underlying system.
So the hyperparameters influence the prior here, and the hyper parameters here influence the parameters here. And so it's backwards at least one step in time in this sophisticated format. This is a better diagnosis or illustration. The hyper Parr goes to the prior goes to the data. So it's just in a previous time.
Seth in some way, anything to and here. All right, epistemic foraging. I pulled this from active inference and learning.
27:48 This quote. It says, Active inference lab behavior has exploration, epistemic, and exploitative pragmatic aspects that are sensitive to ambiguity and risk, respectively, where epistemic, ambiguity, resolving behavior enables pragmatic, reward seeking behavior and the subsequent emergence of habits.
I just wanted to kind of point out here that active inference has been illustrated as, like, a balance, a way to balance exploration and exploitation and epistemic and pragmatic value. And like, in business, is this, like, knowledge and money? Is that, like, epistemic and pragmatic value, like, knowledge of

your customers, your clients? So I was just trying to think of how this might translate to that money pragmatic value is like, more resources, and epistemic value is more knowledge of your client base or of the future, maybe uncertainty introduction.

28:51 Tyler:
Yeah, I could just give a concrete example of that because it's especially true in software engineering, where that is actually framed in explicitly these terms in growth organizations.
So if you're on a growth team, you're like, okay, we can either turn up the dial on this thing that's working, we're like, okay, we know this flow is working. This wizards, this checkout flow is working. Let's make it like 10% faster would be an example of exploration where we know that's going to work in some level, where exploration could be something we have really no idea. This is like a shot in the dark. Let's figure out the minimum amount of effort we can put out to uncover new territory.
And so this exact trade off is very much explicitly thought of in a lot of type organizations.

29:36 Bleu:
Very cool. Thank you. Yeah. So epistemic foraging is like searching around for epistemic, seeking out epistemic value. Okay, so moving on to the triplet structure of free energy governance.
Tyler, this is for you.

29:56 Tyler:
I think so beyond Francesco, really, there's like a key question of governance. When you're thinking about your organization, how do you value the person organization? And it's really about how you create and update your generative models so that the firm can survive. And he presents this framework of thinking about it and he calls it the triplet structure of free energy governance.
There is structure, cognition and then capabilities. So we'll go through each of these in turn. All right. Structure. So sorry, this is confusing.
That header is wrong. Just get to the next slide.
All right. Structure. So this genre, that connectivity emerges in flow and language bottom up stimulating from resource markets such as clients Technologies, spires Another are only as relevant and meaningful to resource reconfiguration asset exploration as clearly as top down predictions and prediction models, articulated communication, and above all programmed to process bottom up incoming signals.
31:04 So we kind of touched on this earlier, but a lot of times decision making organization is very linear where like, you have very tough you're coming with strategy and then like, that's executed in turn every rung of the hierarchy. A lot of times like OKRs, if you've ever heard of this, is like a really good example of this.
It's like objective key results where, like, there's an objective that the top organization comes with and then, like, the Minions the next run have their subsequent parts of that tree and it kind of filters down to the rest. Of the organization where sometimes what's not as clearly articulated is about the introduction between different parts of the hierarchical and how the different parts of the stack have to relate to each other. So like a really good example of this is that this is very true in tech companies. Tech companies collect a ton of data and none of that data is ever processed in a meaningful way. And so a lot of times

we'll say like, we're data driven company, we collect all this information, but in reality a lot of information is trapped at the bottom rungs of the communication.
32:05 It may not have like the political ability or also even the technical ability to process that in a meaningful way and bubble that up through the organization. And a lot of times there's a huge gap in being able to actually process that information and bubble it up. Appropriately in a way that can actually crater the organization. This is like designing this in a really thoughtful way is much harder than it would seem. And even if you call yourself a data driven organization, there's a good chance you're not processing data in a way that can actually generative new top down models later on. Anything to add there? Virginia? Alright, let's go to the next one. Cognition. Alright, so cognition embraces the environment as enacted through relationships and interactions constructed in our brains. Environment is not objectively, act or independently exists, but is revealed by a firm's action or perceptions that those very actions generate. In fact, the consequences of a firm's activity controls its eagle niche.
33:08 We've already touched on this on some of the earlier slides, but a lot of times these firms cognitive of external reality existing independently of their own actions and perceptions and then it's just like up to them to get better tools and information to be able to understand that reality. Like understanding this fog of war that they're slowly uncovering. But they actually don't really often understand how the world that they're perceiving is very much constrained by one, like how they're structured in gathering information and perceiving that information into real insights, then also the actions that they're able to take.
So to make it a little bit more concrete, you can say this very much applies in a real sense on a website where if you're not collecting information on views on your page in a very basic level, it's really hard to generate actual information out of that, right? And so you have to basically make a decision of like, this is the information we want to gather, this is what we care about and that's going to structure the insights you can Dean in the future and what you can do with that information in a similar way.
34:12 Like if you're not putting resources out for interacting with the world, like creating a new department that's maybe a little bit more exploratory, that's going to constrain the actions you can take in the future. So all this is saying is that the reality doesn't exist independent of you. It's something that you actively perceive through your action or perceptions.
Daniel in Bleu and, and anything there.

34:37 Bleu:
Is it like actively perceive or actively.

34:39 Tyler:
Create active sorry, active states a better.

34:43 Bleu:
Way of saying it, or both. I mean, I think you have to be actively perceiving, but I don't know, I think it's a rare treat when someone takes responsibility or even like a company takes responsibility for the reality that they're creating.
And like we see this especially like in tech companies, like, I don't know, Facebook and I mean, just

like a lot of the technology has been life changing and world changing. So like they're really actively creating reality.

35:13 Daniel:
Daniel yeah, this is interesting about the revealing of the firm's generative models through its actions. And we've talked about that fourfold partition with the internal external states and then the sense and action blanket states. So the firm has access to sense and internal states to some extent, but the world or others have access to one's action and or inference on their consequences in the niche.
And so it's a way to talk about what the entire action perception loop is with all of its different inward facing and outward facing dynamics.

36:01 Tyler:
Yeah, just to add a little more Beren too, there's a lot of focus on around this idea as well and like startup culture and so I'm a totally butcher. There's like a Steve Jobs but I'm a totally butcher. But something around the lines of like if you had done a marketing survey of people before they made the ipod and asked them how they want to listen to music, they wouldn't have told you that they wanted an ipod, they would have told you something else that was conditioned based on their previous experiences products. And so the idea is that you just put something out in the world to create an act and that you create something in the world and then the world responds to it. And so there's this big idea, especially in tech culture around reality is something that you will into existence rather than discover independently.

36:47 Bleu:
Yeah, it's interesting too to think about especially you think about Google Glass that came out like, I don't know, ten years ago or something. Now probably not that long ago, but it's been a little while and I think now there's like the rerelease of Google Glass or some kind of similar product like the just wasn't ready when the Google Glass version came out, but we'll be ready soon. They've wielded into existence and it'll be that way soon.

37:12 Tyler:
Definitely. All right, the last one is capabilities. So the inferring firm is constantly optimizing belief propagation as well as updating beliefs. Sophistication that process of optimizing cognition densities is only as good as the firm's share of the world model. So we are no longer just interested in the actions consequences per se, but how the actions consequences impact ulterior beliefs.
So another way of saying this is that the firm has to actively balance this exploiting versus exploring. And I think there's like a lot of again, folk wisdom and especially in Silicon Valley culture around this trade off. Whereas like a lot of times we say hey, failure is good as long as you're learning and integrating those insights. And so yeah, it blew anything to add?

38:06 Bleu:
That no good.
Okay, so realists and anti realists in Management Science all right, so here's a claim from Bishop

management science is equally divided along not too dissimilar realist in the antirealist fault lines. It is best captured by Karl Weak 1977 when he states that environment is located in the mind of the actor and is imposed by him on experience in order to make the experience more meaningful. It seldom dawns on organizational theorists to look for environment inside the heads rather than outside of them. Indeed, the rise of cognitive lens in strategy management and governance research has enriched our understanding around improving the design of strategy governance processes, but has largely remained constrained by the notion that environment is something objective out there waiting to be analyzed and adapted too. And in the section, Bijan talks about blitz scaling and mentions some like examples of this ants realist claim.
39:13 So he says, Google, Uber, Airbnb and Facebook are the products of a fundamentally ants realist enactment of an interaction with their respective eco niches, powered by unique and continuum evolving sets of capabilities fostering actiongenerated. Topdown bottom up prediction. Error inclination to iteratively, optimized their very generative models and implied recognition posterior probabilities of beliefs about the actions consequences these companies redesign while they fly, which is, in the words of Silicon Valley veteran Reid Hoffman, equivalent to throwing yourself off a cliff and assembling your airplane on the way down. Sullivan, 2016 in fact, we are more in control than we resist to believe. Blitz scaling has been integral to the founding DNA of these super outperformers. They listen to and sense what wants to emerge. They are the enacting designers of their very eco niche. For these companies, strategy is rather a matter of ex postsense making than ex ants long term planning. It is a matter of survival.
40:16 And I just thought that that was maybe a good example of this ants realism thing that he was talking about here.
Do you guys have an idea that.

40:27 Tyler:
Kind of arose as you Beren talking about this, is that one interesting point about Google is that they're also kind of famous for trying really hard to do this, but failing to create new products. So they have a generative and killed like hundreds of different new products that people genuinely, truly loved even that were quite innovative. And so it's kind of interesting of how you even think about what is trying to emerge and whether that's best done in like a single monolithic organization versus in a more like decentralized distributed way. So I don't know.
There's been attention, I've been kind of feeling throughout the book as well. Is it that this entity is trying to exist or needs to exist? Or is it something that is more distributed and decentralized, is more appropriate in certain cases?

41:12 Bleu:
So having loved and lost several Google things in the past, Google Reader or Google App Maker, like the LowCode app developing app development thing, I mean, just like tons of things having loved and lost, I wonder if this is like epistemic exploration on the part of Google, really.
I don't know. I feel like people come in and like, I'm going to build this app and Google gives them a lot of freedom and they're like, go ahead, build the app or build the platform or build the thing and do the thing. And they build it and it's great and people love it, and then they move on and do something

else, and then nobody steps up to support the love of this or what was this person's child at Google.

41:54 Tyler:
Right.

41:54 Bleu:
So I feel like maybe that might be a lot of what's happening, but perhaps in this creation and then unsupporting creation and unsupporting, Google is continuously generating epistemic knowledge. Right? It's epistemic foraging and learning about the niche and what people like and what they will use on the grand scheme.

42:13 Tyler:
Well, I think that's true, but I'm not going to make this argument, but a lot of people have made the argument that what they should have been doing the whole time is exploiting because their whole business is just ads and they're like, just run that till you die. That's the only thing that matters. Your resources aren't well used here by trying to do all these random things.
And so there is a legitimate argument, too, of the limits to which you can explore. Maybe I don't know, that's probably out of scope for our discussion today. But Daniel? Yeah.

42:41 Daniel:
Just one short note.
The entire discussion of epistemic and pragmatic value is motivated by the fact that they're unified in the free energy functions that are used to determine perception, cognition, and action in an integrated way. So at the very least, conversation can be had about adaptive changes in these variables at different levels of the organization in a different, if not better way. That's very integrated with how we think about the world internally and built upon neuroscience in that area, as well as about thinking about the complex dynamics and the relational dynamics of the niche, which for information, doesn't exist until you're seeking it out and in feedback with it and attention of your previous data in anticipation of future data. All of these cognitive dynamics. So the anti heuristic doesn't need to be someone who doesn't think like a real world exists or anything like that.
43:43 Even that's like too deep for this current discussion. It's just a purely pragmatic approach to thinking about and modeling these kinds of scenarios.

43:55 Bleu:
Very cool. All right, what else? Okay, so here we are. We got through the preface. That was the preface.
And so getting into part one of the book, there's just a small quote which I'll read. It says, reframing the strategy governance conversation. The evidence suggests that we are in the midst of an evolutionary punctuation. We are witnessing a mass extinction in the corporate world in the early decades of the 21st century. Since 2052% of the Fortune 500, companies have either been acquired, merged, or have declared bankruptcy.
It is estimated that 40% of the companies in evidence today will shutter their operations in the next ten

years. Merely following the trends of change is not enough. Just like organisms facing the Great Oxidation events, organizations need to reinvent the way they interact with the changing world. And this is a quote from Digital. Transformation survive and thrive in an era of mass extinction 2019 by Siebel.
All right, chapter one. Thinking. Beren of curiosity. Revolt and change. All right, here's our abstract. Tyler, I'm going to let you read this one.

45:01 Tyler:
All right? Environmental complexity and velocity have the dominant monitors in strategy. In governance research. The underlying structure of environmental Chang Kim become increasingly distributed and continuous. The disintermediating nature of information technologies is challenging entrenched business models as well as the logics of organizing.
Specialized top down strategy processes are rather and clark and less dynamically and generative intertwined in real time with bottom up stimuli and data emanating from field operations in pursuit of prediction error minimization. Matter established logic of organizing or prevalent corporate governance models are a match for wholesale digital reinvention and continuous strategic renewal.

45:40 Bleu:
Nice and going on, he says, in fact, align to the Kai evolution from a supervised to deep learning logic. Corporate governance is challenged to evolve from a supervised and rule based best practices learning system to one of unsupervised unlearning, ie. Self communication.
To survive, the firm must be conceived as one cross hierarchically integrated inference machine. Organizing is generative, prediction errors minimization. Strategy is redefined as topdown bottom up predictions. Processing the search for knowledge is nourished, not nourished by certainty. It is nourished by a radical absence of certainty.
Thinking born of curiosity, revolt, and change. And that's a quote from Cerritelli 2021.

46:30 Tyler:
All right, so one of the core premises of the abstract is saying, hey, the environmental complexity and velocity have been increasing over time and that makes it more challenging for organizations to survive. So what he says is environmental complexity and velocity have been dominant moderators and strategy and governance research. Indeed, the rate of change has not only been accelerating, but the underlying stress of change has become increasingly distributed and distinguished. Sense of urgency and heathle interrelating are critical to survival in the world that is now commonly perceived as full of surprises. And so this is something just by being on the inside of a lot of these organizations, including corporations, a lot of times it's perceived as, hey, it's a scary world out there.
We just need to get our information better to kind of understand what's actually happening so we don't have any problems. But I think that the problem is that the world is changing so much faster than it had been before, where, like this kind of relentless approach of, hey, we're just going to get more in. We're going to gradually improve our prophecies to wash away the uncertainty that doesn't work as well anymore.
47:36 And I think this kind of former approach of strategy is very much encapsulated by like Six Sigma

design. I don't know if you guys are familiar with that.
That's kind of like a manufacturing idea of like, hey, we're just going to slowly and incrementally increase the precision of our techniques and our processes because any disturbance you have cascades across your whole supply chain and all of your other processes. So we just need to figure everything out and so everything will be perfect and we won't have any issues. And that may be like somewhat of an illusion that you can tell yourself if things aren't changing that quickly and maybe they'll work for some constrained amount of time. But in the Modern world, it's really hard to have that illusion. You have to have a different mental model of the world.
All right, move on to the less Bleu Daniel had anything? All right, so the second piece of this is like, yes, the world is changing really quickly, and that means that there's going to be more discontinuities. And so he says our discontinuities are fundamentally a function of the cost of interacting with the outer world in form of generating and testing predictions.
48:43 And so we say it's not discontinuity. It's really about this gap between perceiving the world and saying, okay, how are we going to take action?
How are you going to update our generative model accordingly? And we're saying is that as the world becomes more complex, changes much faster than ever before, there are more of these discontinuities, but also the discontinuities are larger. There's just more information to integrate. And so on one level, you say, this is really terrifying, the world's changing. What do we do?
But he also sounds this optimistic note saying, well, yes, the Modern world creates more discontinuities, but it also creates more tools for navigating business continuum. And so the first one, he says, is about this interpretation and decentralization. So it's a lot easier to aggregate data and process that information and have backup plans in case plan A fails, you have plans B through Z instead. The other aspect of this is AI, and so it's a lot easier to process bigger and deeper sets of data.
49:45 And so he's trying to sound this optimistic note that, hey, not all is lost.
There is a way to update through this uncertainty.

49:54 Bleu:
I just have to say I love this meme as someone who's tried to organize and restructure my life probably, I don't know, 500,000 times at this point. It's like, do I just do the work or do I spend time agonizing about how to document and structure and time plan my day into five minute blocks? I invest so much time in some method, right? And then I'm just like, okay, well, I methodized it, and then I never used the method. I just go back to doing the work.
So it's like the weird, like all this time analyzing or dumping it into moderating my efficiency is like wasting my efficiency.

50:33 Daniel:
To connect that to the earlier discussion about the two senses of meta, this time cost associated with strategy and with consequences. In the real world, that time cost can be understood as a cognitive cost and something internal that's happening. Metacognitive. How should I decide how to decide how to perceive this.
Some of those are variables and knobs you can understand and change. Other ones are really subliminal. And then also that time cost strategy nexus of course exists for organizations and teams and

all of these nested and complex interactions. So we want to use active inference as and generative principle because it helps us connect what's happening on either side of the Markov blanket, which might be like a data set pass between two areas of a community or of an communication. Understanding how the emission model and the reception model work together.

51:32 Tyler:
Yeah. To DAG that a little more is that like I've been a product analyst at a couple of different startups, and you actually see this in a real way where sometimes you can get an okay answer by just taking a super simple average of a couple of different categories. Or you could try to do something really clever and create like and ML model or something over to predict something. And a lot of times the predictive power you gain doesn't match the time cost of that. And by the time you created this really sophisticated like publishable model, the world has fundamentally changed so much that your model doesn't matter anymore.
And so you're very time bounded in how you can even use the information you gather and the results you glean. So for example even if you have like a checkout flow and you say oh yeah, like with this button the checkout flow is 10% more effective than with this button it will very likely be the Chang Kim six months. The context of that check out flow chaos changed so much that it's actually just kind of meaningless information and so like the time boundedness of the information you collect and the perceptions you can form of that matter a lot.
52:49 All right, so the inference machine so to survive the firm must become one cross hierarchical integrated inference machine that continuously builds predictions which are gain to be bottom of challenge. And so I think this very much aligns with what we talked about before like agile methodology just kind of lean start the method of rebuild, see if it worked you kind of like integrate those perceptions and learn from it. Use that to ideate and something that is a creative act into the world not necessarily something that is fully informed by data and then you build and act on it. And he uses this quote a few times both in the premise I think he actually opens the book with this he says this is a Carlovel quote the search for knowledge is not nourished by certainty is nourished by radical absence of certainty thinking born of curiosity, revolt and change. So this is actually very important because I've actually encountered this attention very often in a lot of organizations where like a lot of organizations want to be data driven and they don't actually another way to say, this is this is the best product advice that was ever given.
54:02 It was from CEO of my last company, he Sajid. There's two types of product work. There's art and there's science. And the science work is like, hey, we know this works. We know we can speed up this checkout flow and it might get incrementally better.
We kind of can just keep going on. It's like the exploit path. But then there's art, which is really just not informed by the data. And a lot of times organizations have trouble with this because it is truly a creative act and they're not comfortable taking that leap of faith. And that's really what you have to do to do anything meaningful.
And a lot of people are much more comfortable in the exploit path, which is a lot easier to sell to your bosses. It's a lot more comfortable. And you have to really very consciously create a culture within your firm that the explore path is even okay and something that can be rewarded.
All right, anything that you guys want to add here before we go? Next slide.

All right, so something I found that was interesting with reading this preface and the first chapter is, like, a lot of the themes are kind of emerging in a less technical framework and also kind of like pseudospiritual ideas about business management.
55:19 And so this is like a quote that was from the paper or from the book. It says that firms are called to open up all four channels of listening, listen to what you know, what surprises you from the whole and what you sense wants to emerge the emerging home.

55:34 Bleu:
Right?

55:34 Tyler:
And so if we kind of think about integrating information across different levels of the hierarchy like John was talking about, you can think about that from a more, like, rigorous academic perspective. But there's like a lot of other books, especially that come over the last five years that are conceiving the organization allostat like a pseudospiritual lens where it's conceiving the organization not as the extension of the CEO's ego, but really as this entity that needs to be nurtured and cultivated and understood on its own terms. One of the most famous books about this is called Reinventing Organizations. And Reinventing Organizations introduced the idea of kill organizations. These are like nonhierarchical heterogeneous organizations. So in that book, he says, instead of trying to predict and control the future, members of the organization are invited to listen in and understand what the organization wants to become, what purpose it wants to serve, which, like, on first reading, that can feel very, like, pseudospiritual and kind of like hand wavy.
56:37 There's actually a very real thing that can actually be modeled in a more rigorous way with active coherence. I think that's really exciting. Another way that this has been talked about has been in bronze. J. Robertson's book Callocracy Holocracy is another similar to organizations, is a nonhierarchical form of governance.
So he says each tension human being sent the signpost telling us how the organization could evolve to better express its purpose.
All right, anything you guys want to and in. Conor.

57:15 Bleu:
So I don't know, anything else that you guys want to add. Just thanks for being here and going over this stuff with me. And is there anything else you're looking forward to or what's next?

57:29 Tyler:
I'm really excited.

57:32 Daniel:
Just logistically, how is the series going to continue?

57:36 Bleu:
Sure. So we'll finish one chapter a week is the goal, maybe like we're trying to still work out the

logistics of the holiday, but I think it looks consistent. So one chapter of the book per week, something about that, something like along those lines, and then a discussion after each section of the book.
So there's part one, part two, part three, and we will get in touch with the author and see maybe if he is willing to come and discuss some of these ideas with us and hopefully we'll have other people that want to participate in the discussions of the work.

58:13 Daniel:
Tyler and then I'll give a thought.

58:15 Tyler:
Yeah. I think the thing I'm looking forward to is so far we've been excited about is that putting a concrete framework behind ideas that have so far been expressed in very abstract kind of hand, lazy terms across different kind of startup folklore and kind of business type business books. And so I'm curious as the next step about Hohwy, it can become a little more like tangible and practical for someone who is in the perspective of being in an organization, how do you actually design an organization to embody free energy governance? And so I'm really excited to see how that can become a little more concrete and clear.
Cool.

58:56 Daniel:
The part I'm looking forward to is continuing to explore that Explore exploit dialectic. Both of those in the extreme lead to failure in some way or at least increase risk. And so this frames are strategizing as being like in some sort of landscape with explore and exploit, which of course is really complex with these nested organizations. And then you brought in the art and science, or science and engineering or just art and communication or whatever other dialectic.
And then even within an artist's day there's realities like accounting and the mixing of the paint and even the prompt engineering for someone who's using those kinds of artistic forms. So it lets there be sort of a light and adaptive quote explore explore scenario happening within the concept of something that's a lot more meaningful, which is the integration of like art, science, personal meaning, collective meaning and so on, without denying that those kinds of Explore/Exploit, attention and strategic dynamics, must happen also.

1:00:16 Bleu:
Cool. Well, thanks for participating, Guys, and we'll see you next time.

1:00:23 Tyler:
Bye, All!

AcII BookStream Session 001.02, December 13, 2022

Second participatory reading and discussion of Bijan Khezri's 2022 book “Governing Continuous Transformation: Re-framing the Strategy-Governance Conversation.”

https://www.youtube.com/watch?v=d8c0iFU8vms

SESSION SPEAKERS

Tyler Sullberg, Daniel Friedman, Bleu Knight

CONTENTS

TRANSCRIPT

00:07 Daniel:
Hello everyone. It's December 13, 2022. We're in active bookstream. Number 1.2 on the book governing continuous transformation. Off to Bleu.

00:20 Bleu:
Hi everyone. We are the Active Coherence Institute, participatory online learning institute that is learning, practicing and thinking about applied active inference. You can reach us here at all of our media links. This is a recorded and an archived live stream, so please provide us with feedback so we can improve upon our work. All backgrounds and perspectives are welcome here and we will be following good video etiquette for live streams.
Hopefully get in touch if you want to participate either in this book stream or the zero contextualization streams or in another Livestream or maybe in the discussion stream. You can reach us always@active.org or by email. Okay, so here we are, bookstream 1.2. The action will go through the Bookmap and the roadmap, the keywords and the claims, and we'll be continuing the discussion of Governing Continuous Transformation.
01:23 So I don't know if we want to just maybe mention a couple of things, one or two things that we're excited to discuss more today or learn more about from this section of the book.
Tyler, is there anything that stood out for you specifically or if maybe you want to give an introduction and then maybe say one or two words about the book, the chapter?

01:42 Tyler:
Yeah, sure. So I'm Tyler. I work more on the applied side of thinking about governance, organizational design. Both work in the Dow tooling space and also protocol design also works in a lot of like corporate settings or as a strategy consultant.
I think for today what I'm excited about is that I went to business school, something that I hear a lot about some of these organizational design framework that Bijan references in the book. But it's really interesting to compare that directly to free energy governance and compare contrast to see where the gaps are. So I'm excited about exploring that more today. What about you, Bleu?

02:19 Bleu:
I am really excited to kind of link and so I'll do this right up in the very beginning, but to link what we have talked about in Active Coherence Lab Institute over the last couple of years about biological organization and hierarchical information flow in biological systems.
I'm excited to connect that to how that works in an organization. As I was reading the book, that was something that stood out to me as something that's maybe necessary for a more elaborate discussion of the text. Cool. Daniel, anything?

02:56 Daniel:
All the comments at the Road Map, but I'm Daniel, I'm a researcher in California and just looking forward to this discussion.

03:05 Bleu:
Cool, thanks. Okay, so here we are at the book map. We are in Chapter two, sensing Sense Making and Strategic Renewal. And the roadmap for today is just two sections. These were structured actually by the author strategic cognitive scientist and sense making.
And the second section is strategic renewal. Did you want to make a comment here. Daniel at the roadmap.

03:35 Daniel:
Not yet. Thank you.

03:38 Bleu:
Okay, so lots of keywords in today's discussion. So we'll just jump right in and hopefully we put them in an order that aligns with the order in the book and included some commentary and claims from the text as well. All right.
So, Tyler, do you want to read this first part of the abstract?

04:00 Tyler:
Sure. Sense making form one utary act together consider non operational cognitive medicaidability or dynamic capability. There's no sensing without sense making and vice versa. And there is no organizational sense making in the absence of a clearly defined, deep existential corporate purpose. Generally, the processes of top down, bottom up, hypothesis testing, prediction error minimization rather than top down heuristic simplification are grabbing the path, navigating a discontinuous world. There's neurosciences predictive coding that allows us to take management researches, strategic cognition, and more specifically connected to structure and cognitive niche. Step further to provide a more complete and practice relevant framework for applying sensing and sense making in the concept of strategic renewal. I want to take the next part.

04:49 Bleu:
Sure.
Thanks. Daniel, do you want to read this Parr? No. Okay, I'll do it. Effectively, sensing and sense making are empowered by the circular causality of top down knowledge structures, prediction, action, prediction, hypotheses and guesses, and bottom up stimuli data stemming from resource markets by default.
Uncertainty and complexity are subjective concepts that are consistently deployed in management research as objectively determined environment. Sensing and sensemaking are nonsensical in the absence of having set the firm's purpose and context in the first place. Once we define sensing, sense making, and strategic renewal in form of action, centric circular causality linking purpose, prediction models, predictions, and prediction error minimization, the new logic of strategic renewal emerges. Dynamically connecting structure, hierarchy, cognition, and capabilities.
I just really wanted to bring this in here.
05:50 We're talking here about top down and bottom up. And I know that there's management styles and structures that are associated with top down and bottom up like management styles, but I really

wanted to bring up this paper, the Information Theory of Individuality by David Krakauer and colleagues at the Santa Fe Institute. And I bring this up because really they try to define what is an individual, even in a biological system, an individual, we have more or just as many cells inside of our body that are not human as we do cells that are human, right? But if you were to take all of those non human cells out of my body, I would not be the same person.
I would not function optimally at all. So I'm more maybe than just what is my DNA, I'm a colony. Not necessarily. Like, I'm one organism. I'm many organisms to function appropriately.
And so really, these guys tried to define how you contain an individual, like, what is worthy of this Markov blanket.
06:52 Like, we talk about the Markov blanket as the boundary between internal and external. But where do you put that? Am I drawing it around my human cells? Between my human cells and my non human cells?
That doesn't really make sense, right? So they talk in this paper a lot about and they do it in a hierarchical way, which is why the biological levels of organization are here, because you can define an individual at the level of a cell or a tissue or an organism, population, community, and so forth. And this even applies to organizations like a company. So here what is critical to be defined as an individual is this bi directional information flow. I think that this paper is very elegant and great.
So you have to have information flowing top down, and you also have to have information flowing bottom up to be worthy of a Markov blanket and considered an individual in this paper. And so I really just kind of wanted to bring that in because they talk about Bijan, talks a lot about how you need this bottom up and top down, and they have to work together.
07:54 And he talks about that a lot in the book for a firm to persist. And so really it's necessary for anything to persist, you have to have that bi directional information flow to earn your Markov blanket, so to speak. I just wanted to kind of bring that up here before we jump into the additional context. Talking about top down and bottom up in the book. Did you guys have any comments here?

08:18 Daniel:
Daniel yes, but I was going to suggest that The Roadmap was a quote from the abstract subjective concepts pragmatically applied, which I think deals with a lot of informational concepts. And then like you brought up, if you define self spatially or genetically, you're going to get some boundaries which may be relevant in certain situations, but also might give a misleading or Attial view of the total system. And then the challenge is when we move to this informational or statistical theory of nested Selves, then organizations and their niches can have many different looking causes and components. So it's very challenging and it's not the chart, it's not the computer access chart. It's something that's somehow different. And I think that will be relevant to pull out what is being described and what should people's consideration be? What do we actually gain by saying that systems are nested, which isn't a novel insight?

09:26 Bleu:
Yeah, that's great. And then also in talking about that bi directional information flow, there's a certain amount of salience that has to be there. Also, like information can be flowing both directions, but if the information is irrelevant, then that's going to not be the cause for perseverance. Right? Okay, cool.

Okay, so here we are. Strategic cognition, sensing and sense making and just and early quote from this chapter. Do you want to read this? Tyler? Is that okay?

10:00 Tyler:
All right. Strategy initiation and formulation defined as a complex activity consisting of scanning. Sense making and strategic decision making are at the heart of the firm's collective interpretive power, emphasizing its core capabilities, timely and accuracy reading of expected environmental change, and the corresponding need for resource reconfiguration in pursuit of the adaptation. Cool.

10:23 Bleu:
Thank you.
Okay, so strategic cognition, they use the definition presented in this paper, the Cognitive Perspective in Strategy and Integrated Review, and they referenced this paper quite a bit. So I just pulled out this diagram of strategic cognition and pulled up the definition that was used in this paper. So they say strategic cognition is discussed in terms of its constituents, structure and process. By structure we refer to the relatively stable characteristics and repeated patterns of behavior and by process to the cognitive activities taking place in organizations.

11:03 Daniel:
Just to note on that, the focus in this book is on kind of a certain type of corporation with a board of directors, for example, which is an important category.
This I'm also just imagining someone who is navigating spatially as part of working in a taxi service. Also, strategic cognition is coming into play, though the wording might be framed a little differently, but it's similar questions about sense making and just different implementations of different kinds of organizations.

11:43 Bleu:
And I wonder how strategy in terms of this kind of strategic cognition is related to the systems engineering approach. Is it align with that or maybe not? That's something to be interesting to know more about.
Do you have any comments here, Tyler?

12:01 Tyler:
Yeah, that's actually something that to build on Daniel's point, like how specific what Bijan is talking about is to board specifically versus other organizational structures. And just like a comment on that, my initial feelings on so far where we are in the book is that it's really not. And I'm not seeing why we need to reduce the scope of just, like, organizations that have boards, especially since most companies I've been in, a lot of the important decision making is really happening at the level of really more of the executives and the C suite. And Bijan might argue like, hey, that's actually a problem, it should be more coming from an active board.
But it's kind of interesting to see where the limits of what Pajama is talking about and how specific is it to a specific kind of organizational structure.

12:46 Daniel:
Or another angle is in the body. The decisions are being made in a distributed, nested way. And so that kind of organization, I think we'll read on to find, will have resonance with this. However, who should the strategic communication and cutting edge research on the strategy, governance, upstream decision making.
There's a very certain audience I think it makes sense to communicate that to. And also this is the threads being linked for a first time in a dissertation style book. And I could imagine different kinds of presentations and implementations being presented differently, not necessarily like an academic published dissertation.

13:34 Bleu:
And that leads me to wonder, perhaps strategic cognition can take place at many levels in a hierarchical system. Like maybe an individual, like a project or a team is doing strategic cognition on the execution of their goals and tasks.
And that happens at the level of the individual and the team and the project and the department and then the firm and then the board. So perhaps it occurs in several places.

14:03 Tyler:
When I've been reading board one of the Johnson's board, I read that as like Council, and that's my interpretation of that. And that can happen at many levels as well.

14:13 Bleu:
Funny.
Like when you say counsel, I think attorney. Why do we have lawyers involved?

14:17 Tyler:
I mean, Council has been like high counsel, supreme counsel.

14:24 Bleu:
All right, awesome. Okay, so sensing I pulled this out to Tyler's protests. I wanted to just maybe talk a little bit about sensing and sense making and talk a little bit about them separately. But they are sensing and sensing and sensing and sense making form one unitary act and together can be considered a non operational cognitive, metacapability or dynamics capability. And this reminds me of the time that I asked Karl about like when I'm sensing, what am I sensing?
Like if I am I sensing like when I look at a red balloon, am I sensing red balloon or am I sensing like 700 nanometer wavelength of light and round oval shape? Like what is actually being perceived via the senses?
And Karl answered me, he said, red balloon, go away from the red light and go more toward the red balloon.
15:24 That answer really says, okay, there actually is not sensing without sense making. Like they are inextricably linked because if I'm actually sensing red balloon, then I'm going beyond what my eyes see

or like what my nose smells or whatever. Okay. And effectively sensing and sense making is a form of organizational learning, action centric hypothesis testing that connects the individual level with that of the firm.
Do you guys have any comments here? We can move on to sense making or stay in sense making maybe. All right, Tyler, this is yours.

16:03 Tyler:
All right. Sense making.
So purpose goal directed in this so the world's models underlying prediction model is fundamental to sensing and sense making. So dissonance is a function of a preset goal generating predictions and submitting those predictions to continuum error. Minimization sense making models are constantly adjusted through error and deviation clearing feedback loops, coupling top down predictions and bottom up Simuli and circular causality. The sole objective in minimizing prediction errors and surprise, ie. Free energy.
Fundamentally, sensemaking is about designing noticing systems. And so what I really liked from the paper that is actually from Wake, I'm not sure if I'm pronouncing that right, is sense making is about how people deal with situations where there are too many or too few meanings. And this is something that I've experienced a lot, especially in like startup context. Like you could think of it and they're actually kind of the same situation, too many or too few meanings. Like if you're in a startup and you're trying to figure out what you do next, your strategic directions are kind of infinite because you haven't really built that many.
17:09 So there's like all these things, directions you can go, things you're hearing in the ecosystem like, oh look, we did this, look, we did this and that all could be meaningful. But at the same time it all collapses into like, what are we actually doing? Are we even building anything right now? What's the point of any of this? And so a lot of how that kind of shows up in your, like, for example, in a health context that show up in the body is kind of like illness or this feeling of agitation and anxiety.
And you kind of have that same embodied feeling both in yourself and in the organization of like, hey, what we're doing isn't working. We're having all these communication kind of issues where there are breakdowns, where you're not receiving what I'm telling you the information I'm telling you about problem isn't being received correctly and acted upon. And this like boils up to becoming a bigger issue to where something needs to happen and some action needs to be taken. And so it's really like the social process, not something that's like the CEO being like, wow, let me go in here and figure out the root issue like a plumber would and then tell the organization what happened.
18:15 But it's more of this kind of feeling of agitation that happens throughout the organization and through this social process being like, what is going on?
What are we doing? People getting increasingly blustered. Something is birthed in that process and something that actually had like a personal realization when I was reading this chapter because I used to work as a strategy consultant and strategy consultant, what I kind of realized about that job is that it's purely about sense making. So a lot of times people think of strategy consultants as like, oh, you're doing like a complicated quantitative analysis. You give that to the board of directors, they make a decision super top down.
But actually where we spent most of our time on was socialization, like kind of talking to people, like

kind of knowing when we went into the organization, like, roughly what was going on in a certain way. We collect data, kept talking to people. But even when we were pretty sure we had the answer, most of the job was actually framing and communication and talking to a bunch of people and using the language that they use and making sure that there is a shared narrative between everyone.
19:22 And so that was where the real work is. And I was like, oh, that's interesting.
Management consultants are professional sense makers. And I think a lot of times a lot of organizations are actually embedding management consultants within the organization as a way of sense making, as a capability that an organization would have. And so an example of something I had as a agreement consultant where you kind of feel this dissonance was like, I work for a lot like health insurance companies. And so health disturbance companies were having this problem where at least in the US. Skyrocketing Healthcare Costa and if you're a health insurance company, you're basically a payment processor.
And so you don't really have any levers to fix that. And so there is this issue of like, okay, well, we need training. Costa but we don't have any levers to do that. And so what that means is that you have to become more of, like, a care manager to some extent. And that is a totally different way of textualizing who you are, both on the organization level and on the individual level of like, what is my purpose here in this role in this organization?
20:25 What this organization trying to do? And getting to the care management side totally needs to shift that. And so that shows up in the organization. That's a lot of dissonance, a lot of angst, and also, like, a lot of pain. And it ends up meaning that both the communication needs to change, but also this individual needs to change themselves and how they relate to that organization.
And so that's why I like this cartoon of like, I've been restructured a lot of times. It's like you have to recontextualize yourself while so the organization is recontextualizing what it's trying to do. So, yeah, I'll leave it there. Daniel and Lewis, do you have anything to add on the slide?

21:04 Daniel:
That's very insightful and it reminds me of the two ways that the entities can reduce free energy by changing their mind and changing the world through action.
And this is an approach where we can describe that process happening at multiple nested and interacted levels. And even if the niche changed around one, the world would be different. The regime of attention would be different, the action perception loop would be different, and that would, at the very least, induce anxiety and uncertainty. Cognitive niche. It's really interesting what you added, and.

21:42 Bleu:
I just love your cartoon.
Okay, so here is a claim from the book, from the chapter. On a more operational level, sense making very effectiveness is shaped by three critical dimensions. First, the clarity of a timeless corporate purpose. Second, a dissonance centric quest for and optimization of filtering anomalies as anomalies become shared sensibleness should become stronger. And C, an an activist worldview I e environment is not exogenously predetermined, but is enacted through the social and action centric construction of shared meaning.
Let's talk about disturbance a little bit.

Going back to this quote, unless you guys have comments here.

22:36 Tyler:
No?

22:36 Bleu:
Okay, so fundamentally firm level sensing and sense making grounded in dissonance theory are a social process rather than a singular activity dedicated to detecting anomalies and I think this goes back to what Tyler was actually just talking about. But I looked up, like the theory and this is the citation that Bijan used. And in this text, Festinger says in short, I'm proposing the dissonance, that is, the existence of non fitting relations among cognition is a motivating factor in its own right.
By the term cognition here and in the remainder of the book, I mean any knowledge, opinion or belief about the environment, oneself or one's behavior. Cognitive dissonance can be seen as an antecedent condition which leads to activity oriented toward dissonance reduction, just as hunger leads to activity oriented toward hunger reduction. It is a very different motivation from what psychologists are used to dealing with, but as we shall see, nonetheless powerful. And so when we talk about sensing and sense making being grounded in dissonance theory, this is something Tyler and I had discussed offline back channel.
23:45 We were talking about dissonance theory.
And what we're interpreting this to mean here is that it is this disjoint activity, like a mismatch between maybe, like, individual and firm level cognition or firm level cognition and societal expectations or and way there's a gap that causes like a kind of discomfort that needs to then be filled. But I would be excited to hear maybe Bijan talk more about how it's grounded in dissonance theory just because it was kind of unclear from the text, like what exactly that might mean. But if you guys have any comments here Daniel yeah.

24:32 Daniel:
Active inference lab. We might think about dissonance as being related to a divergence, like a KL divergence.
And so dissonance isn't a state of exception and kind of a binary switch. There's always some non zero level of emergence between expectation and incoming sensory data, if only because the generative model is coarse grained. So in the decimal points, the world always is going to be somewhat surprising, or at least evolution in terms of surprise. So again, instead of centering, for example, absolute value attainment and then seeing uncertainty as a secondary characteristic, we use divergence based statistics to incorporate this idea of dissonance or divergence driven behavior and put that at the center of the imperative for action.

25:31 Tyler:
Yeah, I interpreted the John's Dissonance theory as a way of bridging both the individual cognition to the social cognition and had a feeling of anxiety manifest in and organization. And so I think Disney's theory, at least in this quote, might be referring to the individual specifically and how that individual but anxiety of like, hey, I thought I was going to get a promotion this year. I didn't get a promotion this

year, something is wrong, or like, hey, I worked really hard on this feature. It didn't increase conversions in the way I thought it would. That feels bad.
That's not motivating for me. Right? That's like on the individual level. But then you can there's another way you can interpret that dissonance on the more of, like a social level as a way and more of a social cognition.

26:23 Bleu:
Cool. All right. Non uniformity.

26:27 Tyler:
Tyler all right.
It's critical that the environment, throughput listening to what wants to emerge, is neither logic nor goal trapped, but open to non uniformity. In fact, the throughput of non uniformity is a measure of firm survivability. Uncertainty and surprise are not to be avoided, but to be minimized through action hypothesis testing, centric engagement with the world as the underlying world model. Consequently, and generatively gains an informational edge. And so we talked about this a little bit during the last bookstream, but a lot of leaders want to imagine that they're, like, slowly ironing out non uniformity and that you're creating this perfect organizational design.
And it's actually kind of funny. There's this trap that a lot of leaders get into, and I've actually gone into this myself, where it's kind of like utopia design, almost. Actually, it's exactly the same thing as Utopia design, where you're like, I'm going to have this model where all these problems I perceive in the world I'm just going to fix by just like top down, just like God mode figuring it out and then everything is going to be there and we're not have to worry about anything anymore.
27:35 So we create and then invariably you create a new design, two weeks, and it works for like a week and people are excited about it. And then, like, you start seeing kind of ripples, ant the edge. You start, like, trying to patch things up and then it like all disintegrates. And then, like, I think a lot of leaders are like, oh, well, like, you know, people we have the wrong people. People aren't, you know, following process, like I want them to, right? And it gets really frustrating. But I think even when it goes well, it's just like you were missing out on kind of, like, how generative that non uniformity can be and where basically, like, if people are too rigid in their process, you're, you know, you're not carving out space for anything new.
The way that John talks about non uniformity in this case is that you minimize it through kind of action oriented hypothesis testing. You're not like, wallowing in this uncertainty. There's a way that you can capture that and take ownership over uncertainty and use it for something that's really beautiful and productive.
28:43 For example, I've had jobs where I was a product analyst and I work for this consumer logistics company where we go into people's homes and pack up all of their things. So it's like a very complicated job, right?
And so we would figure things out, like, okay, wow, our times for this kind of job in the city are going up a lot. And we would see that in the data and we're like, wow, this is really inefficient. And that we would like, that manifest itself as some kind of anxiety or dissonance. And then we would start, we do analysis and we'd be like, oh, it's this kind of job. It's this kind of job, this kind of furniture.

Then you talk to people to talk to some of these movers and you find out, oh, they don't have the right equipment on this. They don't have this kind of wrench on these particular jobs. They're like, that's interesting. Then you socialize that information, figure out from operations that that wrench isn't consistently being returned and they're actually losing a lot of their equipment to be able to do that job. Then you find out from other operational leaders that they're not being funded appropriately.
29:46 They don't have discretional spending to be able to actually pay for those kinds of that kind of equipment. Right. So it's like through that anxiety, you kind of are action oriented and could figure out, like, hey, this is not something that the situation isn't totally screwed. We can actually keep moving forward and testing, figuring out what's going on and taking action accordingly.

30:11 Daniel:
That makes me think of pain and soreness and redness in the body.
Like, signals have to propagate in order for things to change. And that could be in an allostatic or an anticipatory or in a reactive or in a traumatized way from the organism's perspective. But the only way that we're going to find out about it is through this kind of, like, active perception. Individuals or nested levels above them making an action oriented decision to sense out different information and control attention, which is actually seen as a policy selection over cognitive states.

30:57 Bleu:
Sorry, my mouth was sticky. I am also reminded of biological systems, but maybe for a different reason. So in biology, non uniformity is critical to existence. Like, you have a system of equilibrium in a biological system, that's death. This non uniformity.
And I think he even brings it up as critical. I don't know if I quoted it here, but he brings it up as critical to survival. You have to have non uniformity. If everything's the same. It's like dull, bored.
It's so important to have variety. Variety is the spice of life. Right? Okay, cool. All right.
Purpose. So purpose and goal directedness. I e. The forward model, underlying prediction model is fundamental to sensing and sense making. And like, this is the forward model underlying model.
So I just wanted to point that out that there's some nestedness going on here.
31:59 Dissonance is a function of a preset goal. Generating predictions and submitting those predictions to continuous error minimization. Environmental sensing and sense making are nonsensical in the absence of having set the firm's existential purpose in the first place. Purpose, not strategy, is the reason an organization exists.
Its definition and articulation must be top management's first responsibility. And this reminds me of our agreement organization in the Active Inference Institute. Like, what is the purpose of the institute? And just trying to kind of outline and. Highlight these key things.
We can't have a strategy without having a goal. What is that strategy trying to achieve? What is the point, right? If you guys have comments here too, that'd be awesome.

32:50 Daniel:
Just that is this meant to be a sentence in one language or another language?
Even in the same language or a formal language? It will mean different things to different people. It will be associated with different envelopes and portfolios of risk and positive or negative

consequences, also deemed positive and negative by a different worldview and contingent upon all these unknown unknowns. So I think amidst that is where we can explore a lot of interesting experiences, I'm sure, in what has worked and what hasn't worked in the applied settings, and then also start to synthesize it with the research on cognitive science and organizational cognition. And that's, I think, what this book is about, like moving beyond just recognizing that complexity and starting to apply active inference and propose free energy governance as an approach to step in here and be useful as well as grounded.

33:57 Tyler:
Yeah, just to add on that, I'm curious if John ever gets to a point in the book where he really gives some guidelines for thinking through how to design purpose more explicitly. Because journalists chaos done extremely poorly, even in major corporations where they're like, our purpose is like bringing smiles to our consumers or something. Like something just like super big ambiguity actually doesn't really help you at all. It's more of actually like a branding exercise and more of like a corporate social responsibility, maybe. Not really anything about purpose.
And when purpose is done well, it's really more like you guys might disagree with this definition, but I think it's kind of more like a heuristic. It's like a decision rule of like, we do this and not this. And it's a way of collapsing information and just being like, let's not think through everything we could possibly be doing right now. Like, we already decided this. This is what we're doing, and it's a way to not think about things too.
34:57 And so I found this to be especially important in decentralized context as well. And I think this is kind of what free energy governance is getting towards, where you have more bottoms up stimuli that you're processing and changing these top down models. And it's really important in that context because you can't be managing everybody really intensely saying this is exactly what you have to do, but rather you have to give a decision rule that a decentralized group of people can use independently. So especially as we get into more of the free energy governance kind of world, purpose is super important. But like Daniel touched on, it's not always totally clear what a good purpose even looks like. And I hope John has a very crisp answer later on for what good purpose is.

35:44 Bleu:
So here I am, the non business person, and Tyler, you said you don't read business books but I've read more than I ever wanted to read.
My own little startup side venture. But I read Jim Collins good to great book and he really talks about purposes really as defining what you do and what you don't do. It kind of affronted me. He talks about the Fox versus the hedgehog. The Fox does lots of things very well.
He's very clever and can do many things. And the hedgehog only has one thing. They do one thing, that's it. They roll up into a ball, right. That's all a hedgehog ever does.
And so in this Fox hedgehog analogy, like as a company, he says you want to be a hedgehog. And I'm like, but I want to do so many different things. But really that having especially when I think about a decentralized thing, we do one thing. Like I don't know. He talked about many different companies but Wells Fargo as a bank was a good example.
36:48 We are creating the best bank in the United States of America. We're never banking outside.

Maybe it started regionally and expanded a little bit or even Southwest. We are only going to fly in the Southwest. They just defined one thing that they were good at that they could just be better than everybody else at and just ran with that.
And that is kind of like one of the defining factors of a great company in his view.

37:09 Tyler:
Yeah, exactly. To build on that a little bit. It's been a long time since I read it to great, but Jim Collins is kind of like the prototypical top down or what some would call an orange style of management where it's very achievement oriented. It's very much about the CEO as being the hero, forcing their way and telling the organization what to do and focusing everybody really intensely.
And so when you talk about the Fox and the hedgehog, it's interesting. He says you want to be the hedgehog because usually when I hear people talk about Fox and the hedgehog he's like, you don't want to be the hedgehog. Like forcing everything into your narrow world model. And so I think when he says be the hedgehog, it's really coming from this top down perspective and it's really not getting into the free energy governance model of like where ideally you want to be both the Fox and the hedgehog. You really want to have a unified world model that you're like, hey, this world model is like not true by the way.
We all know that this is subject to change and we're going to be actively changing this, but we all have to be on the same page.
38:10 And so we're going to have this somewhat arbitrary belief of what our purpose is that we're going to continuously evolve over time in a fox like manner. And so that's a really hard thing to communicate and it's like very subtle and I've tried to communicate this in the past often ineffectively. And so I'm really curious if there's ways to better combine that fox and hedgehog model.

38:37 Bleu:
Now we're spinning out on a tangent but I just have to say, I don't know, like I get the whole fox thing. I am very much like aligned mentally with how a fox type of behavior because I'm just like oh swirl, let me go chase that. But the hedgehog thing I was thinking like okay, do you really want to be a fox and a hedgehog or do you want to be like multiple hedgehogs? I had this vision of dropping water on the hedgehog like the little gremlins and you drop the water and then they multiply and then you have a little field of hedgehogs that are all doing many different things in a very great way but all siloed and they're one little thing. Okay, we have to go on or we can talk about gremlins all day long.

39:21 Tyler:
So for heuristics, I mean this actually fits Hinton purpose because you could think of purpose as a heuristic and I'm not sure if John would agree with that but that's how I think about it. And so read at least his definition was cognitive. Heuristics are a form of cognitive simplification or rules of thumb and tools empower the human mind. What the poet John Keats called negative capability, the ability to survive and thrive in uncertainty. And so yeah, there's just a way of collapsing information overload and finding a way forward despite not having the ability to process everything at the same time.
But then John goes on later to say that heuristics are fundamentally anchor in the world Dean with environmental adaptation rather than enactment. So resolving uncertainty is rather treated as a matter of

adaptation to and exogenously determined game. This book rejects environmental adaptation as a viable survival strategy in a perpetually discontinuous oneshot interactions environment. And so to just illustrate this a little bit, obviously I think we could all understand like a heuristic may not be very good, you could use the wrong heuristic and how do you know?
40:31 But just like to make this more concrete about how heuristics can be confusing is that here are two really common heuristics force financial planning, especially in the context of startups.
So one is called Default alive and this was from Paul Graham, he's the founder of Combinator and so he says okay, a company should cut costs such that if you assume constant revenue growth the company is going to make it a profitability with the money it has left. And so that totally makes sense especially in a startup context where extreme uncertainty. But then there's like another decision rule which is more about expected value. So a company should choose the financial decision with the highest expected value, expected pay off of outcome X and outcome times the likelihood of the outcome. And so these aren't necessarily incompatible.
They can be complexity to each other but they could tell you to do very different things. Especially if like an expected value of like hey, we can crater the business right now is like a 10% likelihood but we can also 90% likely but 10% likelihood we make 100 billion dollar company, right?
41:42 And so that would lead you to do a different thing than default alive. And so a lot of times business leaders are juggling both of these at the same time and not necessarily realizing that they are contradictory heuristics and that there are limits to their heuristic. So yeah, I'll leave it there.
May I say a couple of other things that he says to you that simple. Heuristics can outperform more complicated ones as well. And it's, like, actually not even clear on organizational level how effective heuristics are, because a lot of times when they do studies on heuristic with individuals where everything is, there are not other intelligent actors who are making anticipations of that Europe strategy. Whereas in a business setting, there are. And so to take a very simple example of this with design there for a long time was this movement of the heuristic for design was like oh, everything needs to be super legible and clean.
42:45 And you would use like helvetica 16 point really. We want this to be clear and we want information hierarchy and that matters far and above everything else. But then the problem is that everyone was doing that, and it got really monotonous. And so the actual optimal strategy in that case was to design something totally wacky and insane. And so over the last three years, there was like this, especially with the web three, just, like, absurd looked like they were like GeoCities pages from the 90s where it looked awful and it was not accessible and it was gross, but it was really interesting to look at. And they were using fonts that are totally unreadable, but it was interesting, and it was this competitive situation where the obvious heuristic but in a competitive situation made the optimal strategy doing the opposite of that heuristic.

43:38 Daniel:
Oh, just a few notes, there's so many great points. One is the game theory. Although bar problem where there's a bar and you want to go if it's under half full, but dot one half full, it's not fun, you can't get a drink and it turns out that that's like an unwinnable game. Because if you go well, if it was busy yesterday or if it was busy three nights ago, all decision rules if you just hold to them, get adapted around and I think then that's a very interesting light to reject environmental adaptation as a strategy

position of the book because I think adapting to the environment sounds like something biological. It sounds like something that would be successful organizationally. And then I think that will also lead us to some discussions of how does the free energy minimization generative transcend the default alive expected value dialectic?

44:47 Tyler:
All right, so this is an acronym for Volatility, uncertainty, Complexity, and Ambiguity. Starts with some background on this right now, by the way. So I'm just reading a quote. This is actually a full disclosure from my aunt, who's a leadership and organizational design consultant. She wrote this post called Explore and Vogue Territory, and I really liked how she framed this.
Where most of us in the west were trained in the professional model that prize expertise. Today, being an expert and a specialist is not enough. And worse, it can make you part of the problem, because today we are dealing with the frontiers of humanity, a place where no one has been and no one could possibly be a content expert. And so what I really like about this is that we're entering this world that is increasingly volatile, increasingly ambiguous, but at the same time, that really runs up against how we're individually motivated as professionals, where a lot of us really want to get good ant a thing and have mastery.
45:48 And it really requires handling this uncertainty complexity that volatility is like a personal discipline as well as an organizational discipline.
As far as that personal resilience, handling that uncertainty and complexity is what is going to make the organization resilient. And that's actually quite hard to build. And it's a very rare skill set and a lot of it's about one. And I hope you like how this graph frame this, of, like, how well can you predict your action and how much do you know about the situation? And on both of those axis, it's becoming increasingly so that you know very little about the situation.
You really can't predict your actions, and the ability for expertise to really navigate through that is much less effective, and it's much more about cross function collaboration. Daniel Bleu do you want to take anything on that?
46:49 Cool.

46:51 Bleu:
Okay, I'm going to read this claim from the book. Generative processes of top down, bottom up hypothesis testing I e. Prediction error minimization rather than top down, rule based simplification are guiding the path to navigating a discontinuous world. I'm just going to read these yellow parts.
In fact, rather team uncertainty. In fact, heuristics rather Team Uncertainty, heuristics reinforce dominant logics in the form of pattern recognition and tend to disregard dissonant bottom up stimuli as noise. In fact, heuristics may reinforce the phenomenon of deliberate ignorance and tame curiosity's. Information enriching drive as a foundation for prediction error minimization. I really liked this quote from the book and thought that it kind of maybe sums up the argument against heuristics and also this top down, bottom up circular causality that we've been discussing through the chapter.

47:48 Daniel:
Daniel a little bit uncertain about heuristics for information enrichment and epistemic drive cannot be a

heuristic. If so, would that close the loop.

48:03 Bleu:
So that's like, the reward function? I mean, we've had this discussion many times, like the epistemic and pragmatic value when you knock out one side of the equation, what do you have left? So, yeah, can your heuristic merely be info sampling?
I think that that's probably fair, but yeah, a subtle technical detail, probably. Tyler cognitive maps.

48:24 Tyler:
All right. Cognitive maps are closely related to heuristics and can be considered a form of visualizing sense making in form of graphic representations that locate people in relation to their information environments. Maps provide a frame of reference for what is known and what is believed.
So I've actually made a lot of cognitive maps myself on various consulting projects. And what's kind of funny about cognitive maps is that they're actually really useful to make as the person who is making them. As you go through the process of making a cognitive map, you feel like, I understand the complexity of this organization pretty well at this point, and I can actually hold it all in my mind at one time. But the problem with that is that there's two problems. One is that no one has understands your cognitive map at all.
It's only useful to you. And then the other problem is that it basically immediately becomes outdated and does not reflect how the organization actually works. And so even like a month, two months later, it's like completely useless, even to yourself.
49:27 John has a good quote of this where he really says that this cognitive map isn't really useful for the purposes of free energy governance. So he says, cognitive mapping is representative of the deterministic view of the world, akin to a physical cause and effect chain, and she should be considered rather ants clocked in the face of discontinuous market environments. So, yeah, it's really not something that you're going to be able to fully map out how governance works or how an organization works. This is actually something that I've been thinking a lot about for the past couple of months in the context of dows, of like, can you model the flow of value and power completely within an organization as code? And I think what John would say is probably not it's not fully like this deterministic model of cause and effects.
It's really something more of a social process that's a little bit more ambiguity and fluffy and hard to nail down. Daniel Bleu, do you have anything to add here?

50:28 Bleu:
So, on the one hand, I don't know cognitive maps. Like, when I was taught about them in college, they made no sense to me. I hated them.
I was like, this is the dumbest thing I've ever heard of. But then when you get into process flow in writing code and in system design, they kind of make sense, like an experimental design chart. So I don't know, I'm back and forth on the can you read your own cognitive map? Sometimes I would argue that if you can't read your own cognitive map that it's not a good one. How about that?
Okay. Claim. Okay. It is neuroscience's predictive coding that allows us to take management researches, sense making, perspective, as well as nexus of structure and cognition. One step further to

provide a more complete and relevant framework force applying sensing and sense making in the concept of strategic renewal.
Effectively, sensing and sense making are empowered by the circular causality between top down knowledge structures, prediction models, predictions, hypotheses and guesses, and bottom up stimuli data stemming from resource markets.
51:30 I just thought it was important to include this claim here. I feel like it sums up a lot of what is written in this chapter. Okay, so we'll talk a little bit about active reasoning. And this picture on the left shows like inductive reasoning, which is like, when you have a specific observation, you come to a general conclusion about that specific observation.
Like, if you see three men wearing white shirts in a room, and then you might say, like, oh, all the men wear white shirts, but it might just be a coincidence, right? And then like deductive reasoning, where you have a general rule and you come to a specific conclusion, like, you know, all the men have to be wearing white shirts in this situation. And so you conclude that the men in this room will be wearing white shirts. So that's like a deductive reasoning. And then you have this abductive reasoning where you have this incomplete observation where you see some of the men in the room wearing white shirts and you don't know anything about the rules.
52:38 You have this incomplete observation and you make your best prediction.
I guess some percentage of the men here like to wear white or something like that. So this incomplete observation coming to this best prediction, I probably did a horrible job at specific examples, but those were just like, sorry, off the top of my head. So that's like this reasoning logic and a quote from the text abductive reasoning usually begins with a surprising observation or experience. This is what shatters our habit and motivates us to create a hypothesis that might resolve the anomaly. Abduction is an inferential procedure in which we create a conjecture that if it were, would make the surprising anomaly part of our normal understanding of the world.
So I liked this idea of linking action to surprise. And I just wanted to point out the Livestream number 47 about active coherence and abduction.
53:39 And we discussed more than one paper in this live stream. So just to read a quick quote from this specific paper. This paper.
It's Piataran. I probably butchered that. And Majid Beni, and I think Majid was on that stream with us. And this paper says, the focus is on the allegiance between the nomenclatures of active and active inference as the proper place to begin reaching at the wider target. The paper outlines key concept elements involved in a naturalistic rendering of Pierce's late semiotic and logical notion of abductive reasoning and targeting a cognitive biological model of abduction which preserves the functional integrity of an organism and fulfills the existential imperative for living beings evidence of existence. And this paper was awesome. Like totally mind blowing. And I can't do it justice in like the 5 minutes or whatever time we have here. So if you want to learn more about abduction and the Relationship Active Inference lab, I suggest go check out this live stream or read this paper.
54:43 Unless you guys have comments here, you can move on forward.

54:46 Tyler:
Yes. One comment on that is that I found it really challenging often to in an organizational context to toggle between inductive deductive and abductive reasoning where it's like a lot of times people get

confused which kind of reasoning you're actually using. And if you do something that is kind of more adaptive, like, hey, here's what I'm seeing, here's my best guess, throwing things, ant the wall. Then you get tracking these things like, well, how do you really know that's true? And you're like, yeah, that's the point.
I don't know that's true. But we're really just trying to like this is a creative act we're doing together of trying to come up with some hypothesis. This is a really specialized skill set and it's like quite hard and funny.

55:29 Bleu:
In the book, I don't think we pulled this quote out. I almost did, but I was like, how do you be but like, Bijan.
I don't know if he's quoting someone else or he just says objective reasoning is like, any hypothesis is good enough, whatever. It's just kind of like, I don't know, shooting arrows in the dark. It kind of made it sound like that. But there actually can be quite a bit of art and science to abductive reasoning.

55:52 Tyler:
Okay, cool.
So John lays out a few different frameworks for thinking about collective sense making and specifically how you connect different levels of the hierarchy together. Like sense making, it one of the individual and leveling that up through organizational sense making. And so he talks about these like six different models of collective sense making and wasn't necessarily saying like, hey, I am fully behind each of one of these, but he's more just talking about prior work and how to think about the gaps of how they line up to free energy governance. So let's go through each one of them. The four I model. So the four eye models, this is the intuitive interpreting, integrating, and institutionalizing. And so this is really thinking about how sensing flows through the individual level and then bubbles up through different levels of socialization up and through institutionalization. So Crossings for iModel, intuitive interpreting, integrating, and Institutionalizing as applied to the context of strategic renewal provides a framework for the process of transmorphing individual sensing and sense making cognition to firm level strategic action, intuiting and interpreting.
56:59 A hypothesis starts at the individual level and subsequently the interpretation, sense making process becomes socialized, integrated and institutionalized at the firm level. And so this whole process is goal directed.
It's not just taking bombs of stimuli and then somehow magically transforming it into institutional processes. It is really goal directed and hypothesis driven of really inactive and saying, hey, this is what we believe about the world and seeing this is actually the case. And I think the John has an interesting point about the score. I model that a lot of times organizations really don't view themselves as being active creators of their world are really especially when you coherence up like the board view themselves as more passive receptacles of information. And so this whole process of sense making from the individual level to the organizational level is really like an active process driven especially driven by the board.
58:04 Bleu or Daniel, do you have anything to add here?
All right, tension based view. So, attention based view. This is another model that is similarly

connecting both the individual level of cognition to the institutional level. It just has like a different spit on it and different emphasis. And so in this model, the idea is that you need attention to make decisions, like, you need to put some focus and energy to make a decision, but individuals and consequently firms, have limited attention.
So this is just like the fundamental constraint on your ability to Markov decision is that you just don't have the time or energy to devote to every single decision. And so your individual cognition is constrained. And because your individual cognition is constrained, so your social cognition and like, that social cognition is shaped by different factors. That is like, social factors, cultural factors, economic factors, and that social cognition, those forces that shape like, situational context that shape your social cognition, those manifests and are institutionalized in the organizational cognition and that is, like, rules the positions, the players and the resources.
59:20 So if you guys are familiar with Eleanor Ostrom's model of thinking about kind of how common resource organizations develop, it's kind of like the same exact framework that she uses.
So this is very consistent with free energy governance, though it doesn't really capture that active process of reality construction. It's much more about just like, thinking about attention and how that bubbles up to different levels of the hierarchy. Bleu. Daniel. Anything out here?
All right. Dynamic capability view. So the aim of dynamic capabilities research is ambitious to understand how firms can sustain a competitive advantage by responding to and creating environment change. This is from Help At, who is one of the main components of this type of Dynamic Capability View. They also go on to say that dynamic capabilities are the capacity of an organization to purposefully create, extend and modify its resource base.
1:00:25 So this is very consistent with how I learned about organizational design and evolution in a business school. It's much more about like, hey, we have these kinds of resources kind of like the sellers of the data model almost like we have these resources and these constraints in our environment and this is like how we can extend that resource base and grow over time. And it has a little more like a deterministic bent to it and it's about like how you survive in a quickly changing environment. So in that sense it's like similar to free energy governance but it's really more about strategic change. It's not really about the individual cognition.
It doesn't really talk much about individual cognition at all. So it's like an interesting theoretical framework but it's not really as embodied as free energy governance and it's missing that relationship to the individual.
Bleu Daniel, anything to add here?
1:01:26 All right, so OKRs are objectives and key results. So the idea here is that you have a gain so at every single level of the hierarchy. So let's say that your company top level of the hierarchy will just use this examples on the slide. You're the head of the brand, you want to get 1000 new sign ups, right? That is your objective is increasing brand activations and the key result like the quantitative way you measure that is get 1000 new sign ups, right? So that's at the top level of the organization and then in each level of the hierarchy below that you have the sub components that would need to be true to get 1000 new sign ups, right? So the things that would need to be true to get 1000 new sign ups are that one you have to on the head of content, you have to get your click through rate above some threshold, implement 1012 new mediums post old or new content. On the partnership side you have to get 10,000 event registers by some date, right?

1:02:32 So it's basically a way of thinking about like how goals cascade from the top level of the organization and filter down through the other level.
Sorry about that. Very persistent. And so this is actually really popular in a like especially like the tech world. This is pioneered by like John Dor. Larry Page wrote this book about measure called Measure What Matters and it's about like a quantum tattoo way of thinking about organizational design and goal setting.
And so I've actually done this a lot at different organizations and it can be powerful and I think the genre really likes it. He says OKRs have proven to be invaluable and dynamic tool to foster formal exchanges at the field level of resource markets approximating self organization. Because each level of the hierarchy has the responsibility for themselves to set their own OKR that aligns with the next level of the hierarchy, right? So it can be really dynamic and have that self organizing quality.
1:03:38 However, a problem with it, and this is not something that John brought up, this is something from my own experience is that especially in a startup context, things are moving so quickly that OKRs very often become outdated pretty much.
Like immediately. And so you'll set an OKR for a quarter and then you're a month down the line and so much has changed, the context is so different that this OKR obviously doesn't matter anymore and that's a huge problem. And so you need some way of changing your OKRs dynamically. But the problem is that OKRs take a lot of work to set up and to socialize and to measure and so then you really don't have the resources necessarily to do that and that is a huge challenge. There's also huge issues with doing OKRs and that it's like some version of good ants law where your measure becomes a target, it ceases to be a good measure.
Whereas these different levels of the organization can over optimize for some arbitrary metric that they need to get a promotion which sometimes that can be aligned with the organization, but in quickly changing environments it can become quickly not aligned with what the organization actually needs.
1:04:52 So there's a lot of pushback for OKRs right now it's unclear. I think there's probably some formulation of OKRs that's more dynamic and more responsive to bottom up stimuli but they can be really hard to operationalize but theoretically amazing way of connecting different levels of the communication. Christ all right, different levels of the organization. All right, let's go to the next one.
Collaborative intelligence. So the drive for self organizing mechanisms gradually moved from employee empowerment and cognitive intelligence in form of crowdsourcing deploying the journey of the power of information technologies to tap into the collective knowledge base to collaborative intelligence. CQ emphasizing the need for a shift in the leadership model from having all the answers to raising the right questions. As digital tools are increasingly deployed to enable goal directed intelligence deliberations and distributed multi intelligence systems.
1:05:52 And so to think about what this actually means, like in practice oftentimes it's not the case where it's like you have some really huge robust system where every person in the organization is seamlessly sharing their insights and their data.
That's not really how it works. It much more works that it's like you have specialized sense makers within the organization and consistent ways of processing data and sharing that data. So, for example, you'll have, like, an It team. They have, like, a central data warehouse where they put all the data together, they clean it and sanitize it in a consistent way. And then you have embedded kind of sense makers, like kind of consultants or analysts at different levels of the organization processing that data,

sharing insights with each other, socializing across the organization.
And that tends to be kind of like how it's generally structured, especially a lot of tech companies.
All right, and open strategy is kind of an extension of that.
1:06:54 It's like the extreme extension of collaborative intelligence. So open strategy is categorically different traditional top level strategizing and qualitatively different from bottom up strategizing. So open strategy is unique in its overall transparency, wide, inclusiveness, and central use of social it to effectively enable mass participation. In summary, open strategy is rather project centric rather than a coherent new strategy governance framework.
The very limitations transpiring through the various case studies suggest that open strategy is likely to battle with schwarmers three enemies or inner voices of resistance the voice of judgment, voice of cynicism, and the voice of fear. So open Strategy is this kind of idea where it's like, the strategy can emerge through this kind of like, bottoms up information processing. If we all have the information available to us, it wouldn't be purely on top down decision maker for synthesizing all of this, but rather we could all do that together and something more robust will emerge through that process.
1:07:56 And this is like especially a popular concept like Teal organizations or Holocracy. That kind of decision making is like the gold standard for how it should happen.
Though he brought some interesting use cases about things like IBM, I think it's Pepsi, a few other different use cases where their experience with this is mixed. And when he says this is a project centric rather than a coherent use strategy governance framework, it's easy to do this more in a project setting because you can think about what the relevant pieces of information are and who all the stakeholders are that you want to involve. But to do that dynamically means that you're continuously bringing in new information, changing a new stakeholder, finding a new decision making processes between those stakeholders that's super hard to do on a continuous basis rather than, like a limited scope project basis. So it's kind of unclear how to make up a strategy work over a long indefinite period of time.
1:08:58 Yeah. Bleu Daniel one thing to add here yeah, just like one last point here is that I really like My brought up the voice of the inner voices of resistance, the voice of judgment, the voice of cynicism, and the voice of fear. And that's really been kind of this feeling I've had as I've been reading this book of, like, yes, this way of integrating top down and bottom up stimuli together sounds great, and it's totally the right way to do it. But sometimes the reality of being an organization is that you're dealing with people's personal fear and that really holds you back from being able to dynamically. Chang Kim people want stability, people want mastery.
People want things to be the way that they were the same in the past. And that's a very deeply, I think, human thing. I'm not sure if that's something that's unique about Modern organizations and you're really going up against that when you're trying to develop these more like, dynamic systems of thinking about purpose and meaning and sense making.
1:10:02 And to me, in my mind, that feels like the central challenge of free energy governance. I'm not sure if John would agree with that, but to me that feels like the huge hurdle you have to overcome.

1:10:16 Bleu:
Cool. So, moving into the second section, which is much smaller so we'll try to be fast. Okay, there's a claim here strategic renewal is an iterative process of belief, action and learning where periods of incremental adjustment, single loop learning are broken by bursts of revolutionary change double loop

learning. It is only when we start expressing beliefs as probability distributions and action as a state that precedes perception conditioned by a Markovian boundary intermediating the internal and external states, all dedicated in circular causality to continuously optimizing the updating of beliefs, ie. Learning, a mathematically self consistent model emerges.
So strategic renewal he is using Dean is using a definition put forward in this article by Schmidt in 2018. This book adopts across hierarchical, capabilities driven and action centric learning perspective in defining strategic renewal, which is best captured by Schmidt.
1:11:22 Strategic renewal involves a transformation of the firm's core capabilities associated with competitive advantage, concerns the entire organization, and has implications across organizational levels and is essential to break past dependence and ensure the firm's long term survival. And another claim he makes here is to approach strategic renewal as an upper echelon centric, top down only challenge is nonsense. Given the importance of social interactions to knowledge development and organizational learning.
We believe that renewal can be understood best as a system of relational or social exchanges, which is effectively the essence of reality construction. Indeed, once strategic renewal is embraced as a system of relational or social exchanges, the need for across hierarchical connect emerges. And I just wanted to bring up this figure. This is like the action perception loop from Thinking through Other Minds a Variational Approach to Cognition and culture.
1:12:26 We've had this on the live stream before I can't remember and didn't look up which live stream number it was.
But in this paper they really illustrate how this relational and social exchanges, like interaction with the niche environment helps us come to a mutual consensus in a social kind of way. And so if you would like more information there, I recommend this paper. Okay? And then Bijan talks about top down versus bottom up strategic renewal. The more dominant a top down directed induced rather than bottom up inspired autonomous strategic renewal process, the more likely that critical intelligence formed resource markets maybe that should be from resource markets is ignored and transient and transformation bearing market signals are lost.
In the absence of a circular, top down, bottom up organizational learning, the firm may become trapped in top leadership's dominant logics, highly dependent on MNA joint venture driven innovation and increasingly disconnected from the very intelligence the firm's field close to resource markets beholds.
1:13:39 Eventually financial control, M and A and Alliancing is likely to squeeze out strategic control in house innovation, making the firm potentially rather more than less vulnerable to survival risk, as innovation can no longer can be generated from within the firm. Did you guys have any comments here? Top down versus bottom up and financial versus strategic control. Tyler, do you want to read this one for me?

1:14:08 Tyler:
Sure. Financial and strategic control, respectively, correlate cue linearly to firm performance, too little or too much of one or the other. Potentially entropy bound, the firm is challenged to find an optimal balance between external and internal innovation to power continuous strategic renewal as a sustainable foundation for firm performance and survival. Indeed, the question arises Hohwy does this balanced financial and strategic control? And whether the board of directors potentially assumes

critical and unique strategic role in the process.
So yeah, I think just something to add here too is a lot of times build or buy. And the traditional start wisdom of how you might balance these two decisions of like build versus buy is that build is we call that strategic, right? These are the things that are like the core and central to your purpose. This is like the core engine of how you create value in the world. And buy are the things where can mean a couple of different things.
1:15:09 It doesn't actually mean necessarily, it can mean more like partnerships and plugging into the external ecosystem. And so that'd be like using someone else's API for something that is not necessarily central to you, like stripe payment processing. Right. And so it's this way that you can both have a sustainable advantage while at the same time kind of not using your resources and your energy and your attention for something that's not core to who you are.

1:15:38 Bleu:
Cool.
Thank you. Okay, I think this is our final claim from the book. Strategic renewal research is in need of a more comprehensive framework structurally resolving the hierarchical, top down, bottom up learning, disconnect cognitively embracing environment as a matter of enactment and in terms of capabilities, balancing financial and strategic control as well as exploitation and exploration. The board of directors should be integrated as a distinct cognitive variable into the community of interactions. But more importantly, the question arises whether the board possesses the right capabilities to be of strategic relevance in discontinuous market environments.
I think that that's all. So if you guys have any comments, if not, we can move into some concluding thoughts.

1:16:35 Tyler:
Sure.

1:16:36 Daniel:
Well, the book is subtitled reframing the strategy governance conversation. So I think we're getting chapter by chapter, a clear review of the positioning and the contribution of free energy governance. And towards the middle of the book, things get really detailed with respect to the applications of the active inference framework. So far we've seen more of and introductory opening salvo and a call for need for integration above and beyond the current existing practices, which I think Tyler did a great job conveying some of the real world's strengths and weaknesses and challenges of all these different strategies.

1:17:27 Tyler:
Yeah, I'm really excited for how we move this into an applied setting because kind of like combining the fox and the hedgehog model. This is something I've actually thought about a dot two little success, and it's a huge problem, especially things like OPRs have quickly become updated. Like, how do you create a model of the world while simultaneously communicating? Like, hey, this model is subject to change. This is a work in progress that we're co creating together and kind of going against people's

individual resistance of not wanting change and wanting things to be staple.
I don't have a clue of how you actually really do that. I'm curious. I really hope that John has good answer for that.

1:18:14 Bleu:
Awesome. Well, we'll see you guys next week for chapter three.

AcII BookStream Session 001.03, December 27, 2022

Third participatory reading and discussion of Bijan Khezri's 2022 book “Governing Continuous Transformation: Re-framing the Strategy-Governance Conversation.”

https://www.youtube.com/watch?v=rCmq0TVGpW0

SESSION SPEAKERS

Daniel Friedman, Bleu Knight, Tyler Sullberg

SESSION CONTENTS

TRANSCRIPT

00:09 Daniel:
Hello and welcome everyone. It's December 27, 2022. We're in active bookstream number 1.03. We're

in the third in a series of discussions on governing continuous transformation. Off to you, Bleu.

00:29 Bleu:
Okay, so this bookstream is going to be part of an ongoing series of bookstreams at the Active Inference Institute. So please get in touch if you would like to participate either in one of these zero contextualization videos or an upcoming discussion over the material. And these are all of our links here. This is a participatory online lab. We are open to interacting with anyone, no matter what your level of expertise is in ants of inference or governance or other.
So the goal of this bookstream is to discuss chapter three. We're going to go over the book map and roadmap and the keywords of the chapter. And then there's two sections that kind of fell out of this chapter three. So we'll split those up so we can just maybe introduce ourselves. So I'm Bleu Knight. I'm an independent research consultant in New Mexico, and I'll pass to Tyler.

01:33 Tyler:
How's going? I'm Tyler. I'm more of a DAO practitioner out of California.

01:39 Daniel:
I'm Daniel, I'm a researcher in California.
And as this is our year closing bookstream, and this is going to be focusing on some board and strategy related topics, I think it'll be interesting to talk about reflection and how do we look back, how do we now cast, how do we look forward?

02:05 Bleu:
Nice. Yes. I'm definitely excited to align the material that is presented in the book with the ongoing development of strategy and governance in Active Inference Institute. So that's for me what I'm excited about today. Okay, so this chapter is Micro Foundations of Strategic Governance, and the two sections are The Role of the Board and Models of Board Cognition.
So, Tyler, do you want to read this section of the abstract?

02:38 Tyler:
Sure. Right. So there is no universal governance model. The strategic role of the board does vary as a function of culture, laws, governance orientation, ownership structure, and firm context.
The period of 1998 to 2001, time of financial markets irrational exuberance dominated by coherence governance orientation centered around stock price considerations, has given birth to today's compliance driven governance logic ruling public companies. Simply put, ever since, corporate governance has been estranging the board that's uniquely integral part of strategy process.
Coincidentally, during this very period, management research started complementing their two demographic input output models with behavioral and cognitive dimensions, loping a new conversation around the cognitive microfoundations of board effectiveness. To this day, the study of the board's strategic role remains confined to the boardroom increased environment as an exogenous variable. Bleu will take the next half.

03:33 Bleu:
The top down cultivated hierarchical disconnect so characteristic of traditional corporate governance and strategy processes is more likely to fuel prediction error, reinforcing the perception that the world is unpredictable and uncertain. Indeed, the very limitations of corporate governance research may be an astute reflection of the very real and often selfinflicted limitations of the board's strategic role. Shareholders are challenged to ensure that the board's full strategic potential is not wasted. More specifically, there is a need for a new self organizing governance logic.
Okay, Tyler, do you want to read this, the role of the board?

04:17 Tyler:
Yeah, sure. So for section here is the role of the board. And then we'll go into really different models thinking about board cognition. So we'll start with this quote from John there's no universal governance model.
The strategic role of the board does vary as a function of culture, laws, governance orientation, ownership structure, public, private equity, founder, family led controller, or combination thereof in firm specific context. All right, let's go to the next one.

04:46 Bleu:
Cool. Yeah. This is upper echelon.
So not being familiar with a lot of business like vernacular, I just put this in there. So it's the high level of command authority or rank. And this can be like top level management or the board of directors or both. It seemed like that it wasn't specifically defined in the book as we're reading it, but Tyler, do you have any thoughts on that specifically? Like, what do you think Bijan means?

05:16 Tyler:
My understanding is that it was a combination of both the board and the top management structure. So yeah, he left it pretty big, but that's my understanding.
All right, so we'll start off talking about what a board could be. And so this is Bajan's definition of what a board could mean and not necessarily what it does mean. So the board of directors is a unique, integral part of the firm's upper echelon. It acts from within and without the firm as a boundary spanner. It should encapsulate strategy, processes, constructive attention between organization and active environment, exploitation and exploration, as well as financial and strategic controls.
And so I think even people outside of like an active inference free energy governance context would probably agree with roughly this definition, that a board should be this collective governing body that used their collective wisdom. Because the idea is that is greater than just like, one person at the top making all the decisions and that collective wisdom, something interesting and unique comes out of that.
06:21 That's not necessarily what always happens. Oftentimes it's not exactly what happens. So let's go to the next slide.
We talk about different, these are different ways of thinking about how a board actually functions. And there's like a lot of different ways like the board's role in what they actually do and organization varies considerably across a lot of exafferent dimension. So one different way you could look at it is the

cultural background of the board. So this is from a study, I think they did this on Dutch Royal Company, which had branches both in England and then also in the Rhine in like Germany. Right? And so they found that top managers having the English Sachs and corporate governance orientation are more likely to pursue exploitative and external growth strategic renewal trajectories, while those having a Ryan corporate governance orientation are more likely to pursue exploratory, internal growth strategic renewal trajectories. So I think what they're implication saying is that they're facing similar strategic concepts, they're the same company, but for some reason culturally they're more oriented to doing certain kinds of actions.

07:28 Then you can also think about it just by the context of the business, right? There might be certain boards that have different roles that are more appropriate for certain kinds of contexts. So it might be more administrative.

Maybe it's kind of like a legal requirement to have the board. And that's kind of why they're there. They're more of just making sure that everything is running on time, more of an entrepreneurial where they're actually taking more strategic role. There's directing and controlling. We can imagine that they're more kind of integrated with management and then there's supervisor, which might just be, hey, making sure that everything is going okay, that there are no outrageous frauds being committed within the company.

Though a very common issue too, is that the board often doesn't have much of a role at all. And so this is a quote from one of the studies that the John cites that managerial hedging money theory argues that boards are legal fiction dominated by management. So the idea here is that management actually runs the show. You have a board, they have to check some boxes.

08:28 They're often legally mandated, right?

So, like, for a 501 or a C Corp, you have to have a board. But they're like, okay, let's just appease regulators and have this board. We're not actually giving them anything substantial to do. This is actually like a really big problem in nonprofit board management as well, because it's very unclear what nonprofit boards are supposed to do. And oftentimes nonprofits will put a lot of donors on their board in a long way just to appease these donors egos in chance for getting more funding, but without having a clear sense of what they're actually supposed to do.

This actually matters quite a lot because they don't know what they're supposed to do. But they have all the power in the organization, like the board runs the organization in a nonprofit, and so they have unknown accountability, unclear responsibilities, but all the power. And so what that often dissolves into is that the CEO or the executive director is actually running the show and the board is there just kind of like checking boxes and more of a formality, which does not really get as a greater cognition that the genre is hinting at.

09:42 It could be possible by having a board. So that's unfortunate.

Let's get to the next one. All right. Okay, so this was the first of John's claims. There is a danger, however, that the compliant board is breathing formalism group think and risk aversion at the expense of the operational understanding strategic focus and independent thinking. Effectively, the board has been distanced from initiating and directing strategic renewal.

Unless lawmakers evolve corporate governance guidelines in tune with the requirements of a distributed continuum world, the board is either relegated to strategic relevance or increasingly represents a force of inertia reflected on the struggle with growing complexity.

All right, so let's just unpack what the Dean meant by irrational exuberance from that claim. So, irrational exuberance, this is a famous quote from Alan Greenspan and this was from the 1996 when this was like the beginning of the.com boom.
10:44 the.com boom still had a couple of years left to go before it really kind of petered out. They said irrational duprance has unduly escalated asset values. And so during this period it was like the late ninety s, you had all these companies that, well one, there's like wild speculation in these companies, but also there wasn't great strategic or financial controls by the boards.
And so you had companies like Enron and Tyco WorldCom that were very much misrepresenting their financials. And so the end result of this, after the bus, the.com bust, was the Sarbanes of the ant. I always mispronounce this sarbanes offway act. So which, what that did was that it created the number of like audit and regulatory controls, especially over the board, make sure the board have conflicts of interest, that they're actually overseeing the organization effectively, which is all wonderful in many ways that can be great, those are good things. But there's also a ton of regulation that imposes on these companies and it also imposes a certain model of what a board is supposed to be doing onto these corporations.
11:53 And so John does not like some aspects of that, some of the way that enforces what a board can and should be. And so he says the 2002 Sarbanes Oscillate Act, the United States has been the most prominent lit state of product resulting from irrational exuberance, imposing draconian measures on the audit and financial representations of publicly listed companies. So I think what level of John is saying about this period is that like before 2002 for Sarbanes Oxley, you had a lot of misrepresentations, a lot of rational exuberance. But something interesting that did happen during that same period was that you also had a lot of experimentation on what a board could and should be. And so you agent a lot of research during the same time thinking about what managerial cognition, what board cognition actually looks like, what the board's role could be.
And that kind of free and loose culture also created a more expansive view of what a board is.
12:54 But then once you get into 2002 and you get all these regulations from Starbanes Oxley that really constrained the idea of what a board could be and put all of these other burdens on top of the board and so it really kind of diminished their potential strategic and cognitive role within the company. Bleu Daniel, do you have anything you just want to add here?
All right, so that was talking about the role of the board and that's all. Just to say, the role of the board is often extremely unclear, like any nonprofit or corporation. And so now the John's kind of switches gears and says, okay, well, let's think about different models of board cognition and different ways that you can think about Hohwy a board could operate. So let's go to the next one. Bleu sure.

13:45 Bleu:
So Rendova 1999 was among the first to link managerial cognition to corporate governance, distilling the board's distinct cognitive contribution to strategy process, specifically in terms of environmental scanning and interpretation. Her contribution can be considered seminal laying grounds for a stewardship inspired corporate coherence approach that is now widely adopted by leading private equity firms where top management team and board strategize together, often in highly complementary ways and based upon cash finance equity centric alignment of interest as opposed to free call options. Private equity is more of a governance than a financing model explaining its public market equivalent

outperformance. According to Rendova, board directors do impact decisions.
And so I thought that this idea of managerial cognition was interesting. It just speaks to my interest in hierarchical cognition ant different levels.
14:47 So this is a reference that Bijan gives, that is the managerial response to changing environments perspectives on problem sensing from social cognition. So looking at like, what is managerial cognition? So this paper characterizes managerial problem sensing and necessary precondition for managerial activity directed towards organizational adaptation as composed of noticing, interpreting and incorporating stimuli.
And I liked this definition of cognition really as like noticing, interpreting and incorporating stimuli. Although in the paper they don't say managerial cognition directly, I think that it's attributed largely to this paper as very seminal in the field and then environmental scanning and interpretation from the previous claim. Also, so this is the Rendova paper that Bijan cited and it says the cognitive perspective in this paper proposes suggests that directors contribute to dealing with the complexity and uncertainty associated with strategic decisions.
15:56 It argues that directors possess valuable problem solving expertise which they can apply to a variety of contexts. Directors make their cognitive contributions to strategic decision making by performing along with the firm's managers a set of cognitive tasks scanning, interpretation and choice. And like, I noticed again this like environmental scanning, interpretation and choice, how does this relate to noticing, interpreting and incorporating stimuli? It's like a rephrase scanning, interpretation and choice.
Okay. And so another claim that Bishop makes in the paper, he says Rendova appreciates the dynamic nature of strategy process when she postulates that board participation in strategic decision making rises with increasing environment complexity and uncertainty. However, Rendova's approach is rather static as it falls short of connecting the board table to the rest of the organization and interchangeably treats perception as interpretation.
17:02 A free energy governance lens instantly exposes the obvious shortcomings maybe Tyler's going to tell us how.

17:12 Tyler:
All right, so let's go through a couple more of these different models of board cognition. One of them is called Stewardship Theory. To look quote here from one of the original papers about stewardship theory, Davis 2007. So economic approaches to governance, such as agency theory tend to assume some form of homo economicness which depicts subordinates as individualistic, opportunistic and self serving. Alternatively, sociological and psychological approaches to governance, such as stewardship theory, depicts subordinates as connectivity, pro, organizational and trustworthy.
And so there's, I think, a couple of different lenses you can think about stewardship theory. One is kind of more of this like communist version of a more collectivist world where actually we're not all fully selfish, we also have collectivist aims and people. It's like a different way of thinking about individual motivation. I think another one too is that where this has really shined and become actually important in applied practice has been in private equity.
18:14 And so in private equity, the owners are the same as the management.
And this actually ends up mattering because what they seem to be safe down this quote here is that

actually impacts performance quite a bit, I think. Sorry, we already read that quote. But the idea here is that when management ownership are combined, the management acts as more stewards rather than people who are just paper pushers, but they're actually really taking care of this investment. And Jorge aligned with the board interests.
The next one is absorbative capacity. So Absorbing Capacity thinks about the board as a a cognition unit that's informed by the experiences of its members. So similar to what Bleu said earlier, that the board's expertise in the board's cognition is informed by the diverse experiences of its board members. So the ability of a firm to recognize the value of new external information assimilated and apply it to commercial ends is critical in its innovative capabilities.
19:18 We labeled this capability the firm's absorptive capacity suggests that is largely a function of the firm's level of prior related knowledge.
It goes on to say it's from Mendova director's contribution as a source of requisite varieties to increase the pool available interpretive framework on which decision group which the decision group can draw. So the idea here is that there's limited information that any individual or any group can process. You should get more people with more diverse experiences, so you could process more information through different models and that will lead to more enhanced cognition.

19:59 Daniel:
I could add a note on that previous slide. The mention of the requisite variety in the Rendova quote is from Cybernetics and Ross Ashby's law of requisite variety, which is the idea that for a system to be a good regulator adaptive in a given environment that it needs to have internal states that are of the order of magnitude of external states.
Like if there's 100 positions that the food could be in but you can only conceptualize of ten, then you're not going to be able to have a granular or nuanced enough perspective to find the food. So that ties the managerial and strategic practice oriented areas which frankly dominate society, to some of the more theoretical perspectives and system independent perspectives on cybernetics and cybernetic systems as cognitive systems, which is what brings this entire discourse into the active inference area.

21:12 Tyler:
And I think that's also another important lens, I'll think about Noor diversity because a lot of times Noor diversity is often seen through more of a political lens when there's also like a computational lens as well. That's really important.

21:28 Bleu:
Cool. Okay, moving on. Forbes and Milliken's contribution is relevant in three regards. First, it is impossible to meaningfully infer board performance from demographic variables in the absence of a process model linking demography and output. Second, the board's role as a group is essentially a cognitive role and is therefore a cognitive rather than behavioral perspective is critical to better understand the essence of board performance.
And third, effort norms, cognitive conflicts and the use of knowledge and skills are important process variables underlying board performance. I think Tyler is going to tell us effort norms and cognitive conflicts.

22:12 Tyler:
All right, so effort norms, ie. The intensity of cognitive resourcefulness on the task performance, behavior, cognitive conflicts, the leveraging of differences in perspective and the use of knowledge and skills are important process variables underlying board performance. The dimension of effort norms cannot be stressed enough.
The sheer presence of the collective pool of competencies and experiences is rather meaningless unless actively and purposefully exercised. So the idea here is that even if you have a diverse set of perspectives on your board, and even if you have computational firepower, theoretically, if the board isn't actually inclined to acting on that and processing that information, it's just not going to happen. In that power you have that potential power just doesn't really matter. I think this is important too, because a lot of boards see themselves in a more passive way where the CEO is feeding them information and kind of giving them things to rubber stamp approve. And so even if you have people who have those capabilities, that capacity, it's not really even being used.
23:16 And so you have to have a board that's actually inclined to taking more of an active role to really get that cognitive potential from your board members or anything out there. Yeah.

23:28 Daniel:
One thought by analogy to the brain and the central nervous system is like the usage of resources for cognition, and the brain is still using a lot of energy, slightly less, but a lot during sleep. So what exactly are these cognitive conflicts? What is the resource in the case of the board?
Is it the limited time in a meeting where people can speak? Is it limited attention to different decisions? What is it that's actually conflicted? And how do we gain insights from thinking about the board as a cognitive entity.

24:15 Tyler:
So I think we'll get some of those soon when we talk about inertia. But I think you're right in that the time, the limited time constraints are a huge factor of that, where it's just like you're less inclined to actually do a very high cognitive task, a very demanding cognitive task. You have a couple of hours every month to really talk about it. Or in the case of a 501 C, three, like, board members are unpaid. And so if you're an unpaid member, there's probably like limited time you're actually willing to put to actually thinking about some of these problems.
So I think that there are a lot of dimensions to it, but we'll talk about that shortly.

24:54 Bleu:
I think this last end of this quote, the competencies and experiences of the collective pool is meaningless unless it's actively and purposely exercised. Really speaks a lot to collective intelligence and how, like, within a company, a board, a managerial system, there is this collection and you're not contributing to the emergence of the group intelligence if you're not using all of the different expertise of the different people in the group. And so I think that it's really limiting. But but I also wonder, you know, like, we might have a board that's like a very diverse group of people and we all have different tasks in management, different skills in management, but we also can do things like crochet and bake

and paint. And so to what extent are these other skills that might be present in the board, like relevant or necessary for management to thrive and really to enhance the collective for the group?
26:04 I don't know.

26:06 Daniel:
One last short thought on that, recalling the earlier quote, how there's no universal governance model. It's like if we were talking about ant colony strategies, is it better to simply have more nest mates or fewer or bigger brain per body size or smaller? It's like there isn't a universal answer because there's different strategies, in fact multiple strategies that might be adaptive in a given niche, but it doesn't really make sense to even talk about one without the other, whether you're talking about like chess or ant colonies or the board. And so that's where the particular partitioning active coherence lab helps because it reminds us that the cognitive process of perception cognition, including action, selection and then action and action is happening within the context of a generative process in the niche.
And that can't be just like left for later. That's an intrinsic part of the particular partitioning.

27:12 Bleu:
Okay, so here Bijan makes the claim that essentially there are three important conclusions to take forward from golden and Zajac 2001. I don't know if I said that right. Probably not. First, demographic and procedural variables impact strategic change, rather curve linearly. Second, power relationships are critical to understanding the impel versus impede debate and strategic renewal.
And third, attention, focus and agreement in terms of an okacoian linkage of cognition and structure and that's in this reference, Ocasio 1997 are a promising venue upon which to pursue future research.
And then this linkage of cognition and structure from this paper it's toward an attention based view of the firm from William Ocasio here he says the central argument is that firm behavior is the result of how firms channel and distribute the attention of their decision makers.
28:15 What decision makers do depends on what issues and answers they focus their attention on. What issues and answers they focus on depends upon the specific situation and on how the firm's rules, resources and relationships distribute various issues, answers and decision makers into specific Communications and procedures. And so that pushes salience, I think to the forefront, especially with regard to board collective intelligence, like maybe the crocheting and knitting and baking and all those things are not really relevant.
Or maybe they could be. Maybe this is the explore part where active coherence comes in.

28:55 Daniel:
Another link here with attention and structure and cognition is attention is something that's more dynamic but it requires the structural connections like between brain regions or at the synaptic level or APIs that call each other in a computational system. Those pipes have to be in place for attention to be dynamically allocated. And so the structural aspects of the firm are more like its morphology and then the attention and the more rapidly changing aspects are more like perception and fast changing cognition.
And so that's going to be like a theme that gets built upon are the faster changing, more perceptual and decision making like components of the firm and the slower changing, more structural elements of the

firm.

29:56 Tyler:
Just to build on. That a little bit like something I've noticed from Fire companies that even if you have a very engaged board, like a board that we say gives a lot of attention within the firm and has a high attentional capacity, they may not actually be linking that to the structure of the firm. So for example, something I've often observed is that you'll have two people putting together the quarterly board deck for a company of like 1000 people. So everything gets processed through this like tiny funnel of two people who have to synthesize everything on behalf of the board where they're essentially just like making the conclusions for the board at that point. And so if you're not really linking both the attention and the structure you're really missing out on the potential power of your board.
All right, inertia. So inertia you can think of it really as just like reluctance to change. Similar to the idea of boundary rationality is that there are certain constraints which you have to reason that board often reasons within.
30:59 So read a couple of quotes from Presentation mode.
So I'll read this quote from Hannah 1977. He came up with the original idea of inertia organizational inertia which again isn't specific to firms. It's really an idea that you can apply to any collective system. So there are a number of obvious limitations on the ability of organizations to adapt. That is, there are a number of processes that generate structural inertia.
And John says that Andrew Corcoran governance best practice guidelines may rather fuel governance inertia rather than treating the board as an impactful variable supporting continuous strategic renewal. And so to make this a little more concrete, we can kind of go through a couple of different examples of inertia. And these all come from Hannah's 2nd 77 paper, where he kind of defined this idea of organizational inertia. So I'll list a couple of them. One was that previously made investments aren't easily transferable.
32:02 There are constraints on the information decision makers receive. There are political constraints, there are cost of history to allocate tasks and create procedures. So you've basically done all the work to figure out who's doing what. It's a lot of work to redo that. There are legal constraints, perceptions of legitimacy.
If you were to change course at this point, unclear how your strategy will succeed in competitive environments, like if we do this, how will others react? And so all of this just creates a sense of anxiety that people just don't want to confront and they feel good and comfortable pursuing something that they already understand. And so you can think of that as organizational inertia. And this is particularly a problem with boards because especially if you have a board with limited attentional capacity, they're not going to be putting the time to really think they're going to work through that anxiety. They're not going to be actually doing the hard work to overcome that.
And so you end up kind of just defaulting to something that people already understand. And so there's often something that you hear in organizations where like, okay, well, we could do this really ambitious thing, and there are people who might be actually excited about this more exploratory initiative that you could do, but how are we going to sell that to the board, right?
33:15 And oftentimes it's the CEO has to put their reputation on the line to sell something that's more exploratory and risky to the board who has limited attention capacity. They're anxious about it, so they

just kind of have to trust this one person to say, yes, go for it, it's okay. Again, you're not really unlocking that cognitive power potential of the board.

33:37 Daniel:
One more aspect. There on inertia to connect to the Bayesian physics. Inertia is something that physical objects have in classical mechanics, like whether it's a ball at rest that requires some force to push or whether it's a bicycle and movement whose inertia allows it to stay upright. Inertia is an aspect of physical objects. And by analogy, in the Bayesian Physics, the inertia is like the resistance of a prior to be updated to incoming observations.
So a prior distribution with a high inertia, it's like a heavy. Distribution, it's immovable to new stimuli and that corresponds to having low attention because it's like as new information comes in, the prior has high inertia, it doesn't update a lot. Whereas when there's high attention paid to the incoming stimuli, in the extreme the prior just updates to whatever the new stimuli says.
34:40 That's our new best estimate. So that's ultra high attention and also very moveable.
And that's like a light object. And so there isn't a general answer. But this puts us into a framing where we can think about this structural and attention inertia as part of the morphological and dynamical cognitive process of the board and the organization more generally.

35:12 Tyler:
Yeah, I really like that perspective on it and it makes me think about how, why Bijan is spending so much time thinking about the board. Because it's kind of this communication of low attention, high responsibility for updating the beliefs of the organization. And so that's where like a lot of any like continuous change or transformation would have to happen start the board. So I understand my Bishop is spending so much time thinking about this and talking about different models of board cognition.

35:49 Bleu:
Hopman Ant, Al 2019 make an invaluable contribution in moving away from deterministic models that suggest which specific board configurations and leadership concentrations enhance board effectiveness, firm performance and the firm's overall strategic capability. Instead, they focus on the board's better capabilities such as self evolution and self reconfiguration to power a continuous strategic renewal.

36:17 Tyler:
Right. The board's power of visa visa management is strongly related to the board's hair initiates self evaluation and self reconfiguration, thereby encoding that the board can still critically evaluate strategic proposals and reconfigure strategies. So unfortunately though, Hopman and Al do not go far enough. Since strategic renewal remains balancing by the board chair, we need governance processes that neutralize the over dependencies on the chairman and the CEO. So oftentimes within an organization that has the board, the chairman is kind of running the show on the board and their counterfactuals is the CEO.
And they do a lot of the agenda setting for how the board actually operates, how much attention that they're actually giving on to problems, the kind of information that's the incoming and available to the board. And so a lot of responsibility relies on the board of like how cognition can actually happen. And

I have been in this position myself, I've been a board chair. A lot of responsibility kind of ends up being on you for how well the board and consequently the organization can run.
37:18 And so what's unfortunate, and something I've actually tried to do myself, is like spread the responsibility of the board chair throughout the board so that cognition doesn't rest on like a single person, but it's actually more spread out through that entire cognition unit and that is difficult to do. So I'm curious if the genre later on in the book has some recommendations on how to structure that. Daniel Bleu, anything to add here?

37:47 Bleu:
Yeah, I'm curious, Tyler, with respect to the Dow world that you live in, what are some governance processes that do neutralize that over dependence on the chairman and CEO of a company? Can you maybe say a few words about that?

38:06 Tyler:
Yeah, there's a lot of different governance processes, but I can talk about a couple of them. So one is that if you're doing especially like token or token based voting with the NFCs or C 20s, generally most people can make a proposal.
Not anyone can make a proposal, but a lot of times the agenda setting can be done in a distributed way. So it's not necessarily the board chair and the CEO determining, hey, these are the things that we're bringing up to a vote, but that can be done more dynamically. And oftentimes there's a quorum rules about who can propose. So it's not like fully decentralized, but in a sense that agenda setting can be done more decentralized. And there's also ways of creating salience as well without having a single person at the top saying what is salient and what matters and what doesn't.
There are different governance strategies where salience kind of bubbles up and you can kind of determine certain governance rules, like your quorum, for example, in a more dynamic way.
39:09 And so there's a lot there of how it can't work. Then there's also how it actually works in practice and in reality. A lot of times with Dow governance, usually often Heins like a couple of people making a lot of the proposals. And so what's interesting is that even if you want to be in a more distributed way, sometimes there's this pull of gravity towards centralized decision making.
And it really just is that there's limited attention available even if you're not saying you're not legally mandating some kind of centralized structure. There's just like only a couple of people who are really willing to actually synthesize all this information at any given time, especially within Dows. Dow proposals are often extremely technical and there's often limited people who can even do that if they wanted to. So it's something that I've been personally struggling with is thinking about like, okay, well, there's this world that we want to live in that's maybe more decentralized and less hierarchical and more connected, but there's also just these constraints on human time and attention effort capabilities that constrains the kind of structures that you can have.
40:20 And hopefully later in the book that John will have some good recommendations on how you construct your organization, your board, to kind of mitigate that pull towards centralized processes. But it's just something I witnessed a lot in the data world as well.

40:35 Bleu:

Cool, thanks. So I think that's the end of the material today. So next week the chapter is quite a bit longer.
This one was pretty short, but yeah, we're looking forward, I think, to what Bijan is going to tell us about free energy governance. And he's setting the stage now for delineating the problems. And now how do we go about solving them? I'm curious to delve into this next section with you guys.

41:05 Daniel:
Can I bring up a few points and questions?

41:08 Bleu:
Of course.

41:09 Daniel:
All right. So one of them was it described the board as a spanner earlier on. And I wondered whether the board was kind of like at the heart of the onion, insulated by more and more layers, or whether the board is on the front line interfacing more publicly in the actual position, or that person perhaps serving in a different position as well, like wearing multiple hats. So feel free to give any thoughts on that.
Or we can just raise the point.

41:45 Tyler:
Yeah, I mean, my understanding of well, there's like how it actually works now and then how it can work, how it actually works now is I think it's often more like in the onion where they're getting more refined and more refined information that filters through a hierarchy until it finally gets to the board. And what I think the gen is hoping for is something that resembles more of like a motherboard, this integrating unit where there's all these connections from other parts of the organization. There's still that hierarchical structure but is not insulated from the rest of the organization. And I think that's what Bijan is getting at.
But from my understanding of board governance, that is less often the case and it's really hard to build.

42:30 Bleu:
So I think that that's like a really great question and I'd like to really kind of explore it more in more detail when we get into our discussion section. So I think we should add that to the dot one list.

42:46 Daniel:
Another topic is there was the mention of a compliance board as well as how a board could be like dissonant or impel versus impede. And so how to balance between simply going with what the body provides towards totally wishing things were different. It's like in the extreme, neither is going to work. So there has to be some middle path, but there's no universal model. So that's just kind of one point and then another one was the market centrism of a for profit company means that in some sense, but please suggest if otherwise the financial success on the broader market will define the persistence and the growth of the company.
43:49 So that is kind of like projecting this very high dimensional space of strategy and competition

and attention projecting down onto a number line, like did the stock price go up or down? And so to what extent do for profit and not for profit organizations or components of organizations have clearer or more alignable measures?
It's just like if the only criterion of cognition was this one test, then you kind of get the good heart's law situation where other measures can fall by the wayside. So how does that get prevented or ameliorated in for profit endeavors. And then on the other side, how does that not get ignored when there are very real material constraints in nonprofits as well?

44:59 Tyler:
Yes, and I forgot to mention this point earlier, but it's like a really important one that a lot of our model of shareholder governance is often very culturally specific to America. So there are other ways you could think about board governance and corporate governance.
So, for example, especially in Germany, there's like a stakeholder governance model where, for example, you are legally required to have a board member in Germany who is a representative of the workers. And so this is more aligned with like and you could think of that. You could expand that model too, of like, stakeholder governance. That could mean so that's just Germany's model where they're like, hey, workers rights need to also be important in addition to profit. Right, but you could also expand that to think of, okay, well, what if we had an advocate for the consumer on the board, right?
You could expand that idea of what a for profit company's stakeholder governance model can look like. In Japan, for example, there's a lot of for profit companies are also family run, so there's these family considerations on top of the for profit incentives as well.
46:05 So then even between a C Corp. Like for profit company and then a nonprofit, there are different legal structures that kind of bridge the distance between the two. So one of the famous ones is called a B Corp.
And so a B corp It's essentially the same thing as C Corp. It can make money. It's a for profit company, but in the bylaws, they are not legally mandated to only maximize for profit. They can also maximize for other they call it like double bottom line initiatives. So there's other things that this for profit company can try to do aside from just get money.
And then there's a lot of different permutations of that. Like a lot of different legal structures can have that. And same with the nonprofit, too. Even a nonprofit couldn't have ways that is trying to get revenue and think in a more for profit way, even though there aren't people who are shareholders who are going to profit from it, but they can act in a similar way. So I think often, like, the distinctions between nonprofit and for profit can actually become quite fuzzy in the way that we think about for profit governance is often very culturally centric on how we've done things in the US.
47:15 And in England, not necessarily on how it can be done.

47:20 Bleu:
And as to your first point, Daniel, I think I'm curious to know what goes into defining or creating a compliant board or like a dissonant board. I would think that it's not structured to be a compliant board. I mean, maybe they write it into the bylaws that the board just agrees with everything that everyone does. But I think it's more of like an emergence property of the board.

And does the entire board need to be replaced? If say you have a compliant board and you want more of a strategy driven governing board, do you have to completely interrupt the norms? Right? Like Bijan had said, the norms, if the norm is to be compliant, do you have to just erase everyone to bring in a whole new crew to develop new norms? Otherwise that one person who's like, oh, let's just go along with what everybody says.
They'll keep that culture alive, right?

48:16 Tyler:
To clarify that, I think what Bijan meant was compliance board, which is more like if you're like a regional regulatory, if you're a nuclear power plant, for example, you want to have a compliance centered board who's making sure that you're following all the rules and regulations. But I think to your point, Bleu like a compliance board is also an important a lot of boards function as compliant. Boards are just rubber stamping approvals and that is not super useful. So yes, I think that's also a good point.

48:42 Daniel:
And one fun topic I think to do a little research into is how did we even get here with a board? I mean, isn't a board or the table that was also mentioned, those are just like rectangles. How did we get to this point where the meeting table architectures and the people gathered around it have become legally required and then even subconstrained from there. And so really, just thinking broadly, as I think in the Dow and other spaces, people are thinking broadly about what organizational morphologies and what developmental trajectories and ecosystems of shared intelligence facilitate adaptive cognition and what boards do and how they both build on the legacy and stay within that lane of what may be legally required for compliance as well as innovate and move beyond some of these shortcomings and fallacies that boards can fall into.

49:55 Tyler:
Yeah, I've actually looked into this a little bit about how why boards are a thing.
And like, for example, a nonprofit boards, they were just designed for a different time when a lot of times you were just getting basically foundations that had a bunch of money that they were going to allocate and they were like top down driven models. Not necessarily dynamically responding to the world around them and dynamically changing. And I think the law for profit corporations, it was kind of like a similar idea is like we are going to try to this boat and we're going to go to this other country and we're going to do trade there and we're going to come back. Right? It was a more simple and linear model of thinking about planning and so they're just made for a different world.
And I think now there's a lot of legal infrastructure that has built up around them. So actually innovating around that is really difficult. So for example, one thing. I've been working on a nonprofit recently. We were like, well, we don't want to have a board.
We want to be more community tripping. We want to be a co op. And so then we look into being co op. And actually the legal infrastructure for setting it up is actually just like, not developed at all. You basically have to have a lawyer spend thousands and thousands of dollars to actually figure out how that's going to work.
51:00 And it's also very precarious to even know if this thing is even going to work. So it's just really

this well, trodden path has just been beaten down over and over again because it's the path of least resistance, but not necessarily the optimal one for cognition within the company or a nonprofit.

51:16 Bleu:
I was going to say earlier, how did we get here to this board? Right? And it's a script.
It's a script that has become solidified into law. And it's the same thing, like when you have a compliant board, like the rubber stampers. And that's just also a script that they have followed. So that's why they're all compliant and not really kind of leveraging the type of governance that would be maybe optimal for the strategy of the company.
Okay, cool.

51:48 Tyler:
Yeah.

51:49 Bleu:
Any other final thoughts? Or we can hold it, table it for the upcoming discussion.

51:56 Daniel:
Rhythms of Cognition, rhythms of the Year.
The agenda, setting the agenda. Communicating with the board. Board communicating with the organization. Organization. Communicating outside the organization.
It's great topics, and I think we're three deep into the series, and we're just going to continue to see how the scholarship and the legacy of a lot of conventional and even heterodox thinking and management is taking the next step with this book and the contribution that takes it into the free energy governance space.

52:39 Bleu:
Cool. Well, thanks, guys, and we'll see you next week for getting into the free energy principle.

52:48 Daniel:
All right! Thank you.

AcII BookStream Session 001.04, January 3, 2023

Fourth participatory reading and discussion of Bijan Khezri's 2022 book “Governing Continuous Transformation: Re-framing the Strategy-Governance Conversation.”

https://www.youtube.com/watch?v=BPzwSTalH5E

Scrollable transcripts in other languages:
https://youtu.be/Mjbfw66WGvA

SESSION SPEAKERS

Daniel Friedman, Bleu Knight, Tyler Sullberg

SESSION CONTENTS

TRANSCRIPT

00:12 DANIEL FRIEDMAN:
Hello and welcome everyone. It's January 3, 2023. We're in active bookstream. Number 1.4 on governing continuous transformation. Off to you, Bleu.

00:27 BLEU KNIGHT:
Great. So we are the Active Inference institute and this discussion is over "Governing Continuous Transformation." This is a recorded and an archived Livestream. So please provide us with feedback so

we can improve upon our work.
We are a participatory online institute that is communicating, learning, and practicing applied active inference. You can reach us on social media at all of these different links here. All backgrounds and perspectives are welcome to discuss and contribute to this work. And we will be following good video etiquette for live streams. If you would like to get in touch to participate in a future Zero Livestream or one of the upcoming discussions, please reach out to us via social media or email.
And again, our links.
So today we are going to cover section 1.4. So we're just going to go kind of over where we are in the book, the keywords, and then the different subjects and things that we pulled out of this section.
01:35 So just to start off, we will maybe just introduce ourselves. I am Bleu.
I am a longtime institute participant and an independent researcher in New Mexico. And I'll pass it to Daniel I'm.

01:51 Daniel:
Daniel, I'm a researcher and institute participant. I'll pass to Tyler.

01:57 TYLER SULLBERG:
I'm Tyler.
I'm a DAO researcher and practitioner in California.

02:03 Bleu:
Is there any introductory comments or do you guys just want to jump right into it? Jump in. Okay, here we go. So this is the section that covers the free energy principle. And that's also the title of this chapter.
And I think the first keyword on our keyword. So we pulled out a lot of these keywords. I mean, we pulled them out, they weren't highlighted by Bijan or selected by him at all. And this is just kind of the topics that we thought that would be better to dive deeper into for a more thorough understanding of the material presented in this chapter. And this is not like a final word.
This is maybe just an introductory perspective and our take on what's maybe happening in this chapter, not a review. So we're definitely open to correction and updating our model of this model. All right, so abstract. Tyler, do you want to read this first? Action force us.

03:05 Tyler:
Sure. So the Free Energy principle, the first order principle of police action empowering self communication. FTP commands the generative process active coherence lab dedicated to minimizing the information theoretical mathematical difference between top down predictions and action generated bottom up upstream line in pursuit of minimizing error, surprise and entropy. The power of forsonian active inference is fundamentally fourfold. It's a pure belief setting in dynamic and non stationary environments, the active inference agent carries out ensemble exploration to account for uncertainty by making inferences in Bay's optimal fashion.
The reward signal, so characteristic of reinforcement learning is removed. And finally, active inference sets the collaborative human machine AI potential so integral to the multi intelligence firm as the mathematical expression of beliefs form of probabilities, provides the very common denominator to line humans with machines.

04:02 Bleu:
Wow. Big is true. Okay.
And the author goes on to say there are only two distinctions that matter what is known and unknown and what is in our control and what is not. There are four states active action, internal firm resources,

sensory perception and external unknown and hidden behind the Markov blanket according to Free Energy Governance free Energy Principle powered AI, which he uses here, this capital A and lower keys I to mean active inference. So free energy principle powered active inference is the future site of organizational becoming. So we can unpack that, I guess, starting with this claim, which was in the abstract itself. So maybe we don't need to reread it.
Or was it exactly stated there maybe not fourfold, the four claims. We'll just start off this first one.
05:05 The power of personian active is fundamentally fourfold. It is a pure belief based setting in dynamics and non stationary environments. So what does that mean?
Like, what is Friston active inference? So maybe we want to just step back a little bit and talk about the FEP. And the definition or explanation that Bijan picked out for this chapter is the free energy principle stems from the idea that living systems can be distinguished from other self organizing systems because they active. Avoid deleterious phase transitions by bounding the entropy of their sensory and physical states under the FEP. To be alive simply means to revisit a bounded set of states with a high probability.
And that's from this 2019 Badcock et al. Paper. And this image is from Kirkhoff et al. 2018. And I always like this when I think about life and self organizing systems.
06:12 This picture just really speaks to what it is to kind of be self organizing, a hierarchical scale. And this like revisiting a bounded set of states with a high probability kind of speaks to the non equilibrium steady state density that is like a constraint of life. We kind of have to live within a certain temperature range, a certain glucose range, and all life has like an optimal range of states that they stay in. But if your fever gets too high, like if the temperature goes too high or too low, like you will dissipate. So you revisit this bounded set of states with a high probability and that's kind of your non equilibrium steady state density.
Do you guys have any comments here on the FTP and self organizing? Maybe?

07:05 Daniel:
I'll give one comment. This is a via positive. It's describing what the FEP is.
But we could look back to those four claims and think about what this is not the Via negativa. So rather than being believe based in dynamic settings and adaptive autonomous agents, it might be a framework oriented around some sort of static or perennial understanding of the world. The second point. Rather than being centered around epistemic exploration and the value of reducing uncertainty and gaining information, hearing new perspectives, it could be oriented around pragmatic or utility value, which ties very closely to the third point, which is that a framework, contrary to active inference, might center a reward function that maps different states of the agent or the organization or the world to some sort of reward function which is the heart of reward learning. And then the fourth point also kind of ties in that rather than thinking about ecosystem of shared intelligence intermediated by composable frameworks like active inference, we might be looking for like the one framework to simply rule them all and therefore not think about the human machine or HumanHuman relationships as collaborative and emergent but rather just be looking for the one computer.
08:30 We're just going to turn it on. The business is going to run.

08:40 Bleu:
Awesome. So getting into active inference a little bit more, so we're kind of unpacking here. We're going to unpack slowly these, like, four claims. And so Prestonian, active inference or FEP powered active. So in active inference, there are four states.
This is what Bijan claims active action, internal, firm resources, sensory perception and external, which is unknown and hidden behind the markup blanket. And Bijan quotes Friston here and says, in active inference, the agent makes choices based on its belief about state of the world and not based on the value of the states. And so that speaks to what Daniel was maybe just mentioning about reinforcement

learning, and we'll start to unravel reinforcement learning a little bit more, but where reinforcement learning is really kind of driven by that pragmatic value function, active inference is driven by your beliefs about the world.
09:44 So not how much value can you gain out of moving left or moving right? But I fundamentally believe that I should move right because that's my policy that I operate on.
All right. And where these claims start to be unpacked in the paper, Bijan says, one could argue that nearly all physical sciences can be reduced to a metrology in service of confirming a variant of the principle of least action. This is important because it means that physics does not offer any ground truth. It is just search for measurements that endorse an appropriately formulated prediction based upon a variational principle. And this quotes a Friston 2019 paper.
I don't know that paper off the top of my head, but as funny as I said, Bijan says, and then I started reading it, I'm like, no, Karl said this sounds very much like something that would come out of a Karl paper.
10:48 Okay. And so what is this principle of least action? We've talked about this a lot before in many different livestreams, but I looked it up just for what is like a really easy, simple way that I could explain it in a minute or less. And I found this definition on scholar PDF that says a true dynamical trajectory of the system between an initial and final conversation in a specified time is found by imagining all possible trajectories that the system could conceivably take computing the action, which is a functional of the trajectory.
And just as a reminder, a functional is like a function of a function. So computing the action a functional of the trajectory for each of these trajectories and selecting one that makes the action locally stationary, traditionally called least true trajectories are those that have the least action. And so this is like the Laziness. The lazy society. Everybody makes the lazy choice.
Right? The true trajectory is the one where you kind of just stay put.
11:50 Daniel, do you have a comment here?

11:52 Daniel:
Yes, although on the previous slide, we looked at the particular partition where action states are the outgoing dependencies. And here we see action again with principle of least action action.
But importantly, to abide by a principle of least action isn't simply to take the lowest energy action or the least movement. It's more akin to a conservation law. Like, the total energy is conserved of potential plus kinetic when the ball falls off the platform. So that means that there's a path of least action with the Bull dropping. Now, that is not the path of leased movement, but it's a path of least action given an individual setup because the total energy is conserved.
And so we're interested in paths of least action over the particular partitioned states, internal, external, and blanket states. And so it's a little bit like, not just simply confusing, but least action can include the selection of very energetic or risky behaviors.

13:06 Bleu:
That's cool and just kind of, like, maybe tie that to a real world example. I think about the principle of least action. I prefer my body temperature to be, like, 75 degrees all the time. Right? Do I live in the tropics?
No, because there's, like, a lot of things about living on a tropical island that are not optimal for me. So I live in New Mexico because that's my optimal place. But I wear a jacket in the winter, and in the summertime, I wear less clothes or drive around in my air conditioned car. I live in my air conditioned house. So even though I'm still expending energy to maintain my physical temperature, that is the path of least action for me.
I compensate for the change in my equilibrium state through my actions. Okay. And we will talk more about energy in a minute.

14:08 So unpacking hae jeong Parr of the claim. The active agent carries out epistemic exploration to account for uncertainty by active coherence in Bay's optimal fashion.
Okay, I know what Bayes optimal is, or I think I know what Bayes optimal is. But just to kind of like, what is Bayes optimal fashion, and how do you make coherence in Bayesian optimal fashion? And it's cool because in a quick Google search. I always like to search these fundamental things just to see kind of what pops up. I think I know what Bay's optimal is.
And I pulled out this 2019 paper, like, what is optimal in optimal inference? And it's interesting because going Hinton Bayes optimal. I mean, I think about Bayes optimal as like minimizing prediction error. Or it says here classically optimal Bayesian inference balances prior knowledge and encoding observations to identify the model with maximum posterior probability.
15:11 And so these authors actually take this a step further.
And I really enjoyed their thought process here. So they said completely, we might say that an inference procedure is optimal if it maximizes benefit per unit cost, in which the benefit is some monotonically increasing function of accuracy. But they proposed a generalization of this approach that kind of splits this cost benefit curve into two components where the first component describes the benefit, perhaps the reward obtained as a function of accuracy. But then the second component, so that's the minimizing prediction error that I was speaking to earlier, right, in terms of accuracy. And then the second component describes accuracy as a function DA Costa, which can include time, memory and computational resources needed to process information.
And I think that this is like a fundamental thing that I might overlook. I might be able to get a way more accuracy answer.
16:13 Say, for example, what is the number pie? And I could just say like 3.14. I could actually go through, I could say like 3.14,159, like off the top of my head that's like whatever number of digits of pi that I have memorized to some accurate point. But I could come to a far more accuracy answer of that if I sat there with a pencil and a piece of paper for the entire rest of my life doing long division. So I could come to some infinite number of units past the decimal point and I could go on and on and on forever.
But is it worth it? Is it worth it in terms of memory effort to calculate that increasing accuracy? Or is 3.14 good enough? Right. That is kind of the thing that the functions that they're describing here, like this benefit, this two dual component, like, yes, we want accuracy, but we also want it to be fast or want it to be we want to get the maximum benefit for the minimum resource expenditure.
17:18 So I like that they are describing accuracy as a function of the Costa, the effort that goes into it. Do you guys have any comments here?
Okay, why am I going into this? Okay, so Tyler and I got into this long talk about energy. And we got into I can't remember, I guess it's not maybe in this claim, but it was somewhere in the paper. Maybe I should look and try to pull it up. But we really got into discussing energy, like what is free energy? What is like kinetic and potential energy and what is free energy like in FEP? And we've gone to ActInf Livestream that dive way deeper into this. And I think it's live stream 17. That is the one I pointed you to, Tyler. Alex Kiefer does a great unpacking unraveling of free energy in that way.
But I think it's important here to point out maybe, Tyler, you can pull that quote out of the paper while I'm talking about this, but I think it's important to point out that information theoretic entropy is different than thermodynamic entropy in information theory.
18:34 And there are many times in the paper where the author specifically says, like, we're talking about information theoretic entropy. But then it seems like that the other kind of entropy is Hinton at. And so I kind of wanted to just like, draw a line between information theoretic entropy and the other kind of entropy, like the second law of thermodynamics entropy, thermodynamic entropy. And these two are distinct but not entirely unrelated.
So information theoretic entropy is defined as like in if you have a function x or some event x, the negative log of the probability of x is equal to the information. So here you can see like, the probability

versus the information is this graph on the left. So where there's a high probability of an event, there's like, low information. There's a high probability that I will take a breath in the next 30 seconds.
19:35 So me taking a breath in the next 30 seconds doesn't contain any information, but you guys can predict that I will talk about the FEP and free energy governance in the next minute if I start talking about my dead dog.
There's like low probability of that happening. And so there's maybe a much higher level of information, like, whoa, where did this come from? This is way out of left field. So there's more information in like, an unexpected claim. And so you can see like a probability distinctions versus entropy.
But that relates like the Shannon entropy. Where the entropy? If there's a high probability, it's low entropy, right? So I look at this in a coin flip. So if we know that the coin is always going to come out heads, there's not any entropy in that.
Like, say it's a two sided head coin, so it's always going to come out heads. There's no other option. The coin always flips heads. But where in a fair coin, it's 50 50, right?
20:35 So at the right end of the second graph, it's a probability of 0.5.5, like half of probability that it's heads and half of a probability that it's tails.
This has the highest entropy because it's random. Like we don't know what's going to come out. And so that is what is meant here by information theoretic entropy in contrast to thermodynamic entropy, where that is like what we think about when we think about physics and the Second law of thermodynamics entropy. We think entropy in the universe is always increasing. There's like a lot of disorder, the disorder in the Universe, like, if you clean your house and you go away for 20 years and you come back and your house is a mess, you're not going to be surprised at all, right?
But if your house is a mess and you go away for 20 years and you come back and your house is perfectly spotless, that would be weird, right? That's like you're scheduled for someone to come in and clean it. But the disorder in the universe is always increasing. And that is what it's meant by entropy in terms of the Second Law.
21:40 And we also think about this kind of entropy as energy.
This is where Tyler and I got into talking about energy. But entropy is the energy that is not available to do work. Right. In a system, there's like some amount of energy. I consume so many calories in a day, and this is like very simplified.
But of those calories, I say I consume 2000 calories in a day. I can use only like 1500 of them for work because some energy is always lost in heat in the conversion. In any energy conversion process, like converting energy to work, you will always lose some energy as heat. And so that is kind of another way to think about this, thermodynamic entropy. Tyler, were you able to find that quote where we talked about this, or now?

22:26 Tyler:
Yeah, the quote is fairly subtle and that he goes right between information theory and thermodynamic theory kind of seamlessly, and he doesn't make it clear that these are like two very different things, that there's a potential tenuous connection between. So he says, FEP hence has no purpose of its own. It powers the process of active active inference lab dedicated to minimizing the information theoretical maximum difference between the top down predictions and action generated bottom up stimuli in pursuit of minimizing errors of present entropy. Variational free energy and thermodynamic free energy are inversely related. If variational free energy is high, then thermodynamic entropy will be high, and thermodynamic free energy, the energy available for doing productive work will be low.
So I think what he did there was a subtle he just goes between informational and thermodynamic free energy kind of interchangeably, and they were like, wait a minute, there's actually a difference between these two concepts, and the connection between them is something that the community doesn't have a great handle on.

23:28 Ant this point.

23:30 Bleu:
Very cool. Daniel, do you have any comments there on that?

23:35 Daniel:
It's a pretty complex and developing area how the informational entropy is related to the actual physics and biology. It's kind of like the connection between Friston free energy and Gibbs free energy. How does reducing divergences on informational spaces translate to the amount of available energy? And there are situations where survival could be secured one way or the other. There just isn't, at this point, a general answer to how they're connected.

24:09 Bleu:
So when Tyler asked me how they're connected, what is the relationship? My answer is Maxwell's Demon is the connection really between thermodynamic and informational free energy? And there's actually, I think, a 2018 or 2019 paper that quantifies this relationship between thermodynamic and informational entropy at the quantum level. So I don't know if that applies to all scales, but it's at least cool that and I don't remember the paper offhand, but if you search it, maxwell Semen quantum information, you'll find it, and it's pretty recent. So it's neat that people are thinking about concrete and direct ways to transform and translate information theoretic and thermodynamic entropy.
And so we just kind of wanted to unpack that because in that claim, it was like, whoa, there's a lot of things happening here that it might be more useful for the audience to have a deeper understanding of what is known and what is unknown. And how deep does this rabbit hole really go?
25:10 So it gets pretty hairy. Okay, cool. All right, so back to reality, but back to things that we can concretely talk about.
So, the reward signal, so characteristic of reinforcement learning, is removed and replaced with one sole purpose surprise minimization. Effectively, the agent is empowered to minimize surprise by way of a generative model of the partially observable world only perceiving itself and the world via outcomes. And so just for people who might not be familiar with reinforcement learning hold on just a second. Sorry.
Getting over a sickness sometimes. I didn't want to cough up to the microphone. All right, so in reinforcement learning, there's, like, a couple required components. So you have a policy which maps the state of the environment to an action, and that's, like, for an agent, right? So we're always talking about agent here.
So an agent has a policy.
26:10 Like, if the environment is in this state, I will take this action, and policies can change and update. And then there's a reward signal, which is given at each step. So we're talking about, like, a time step type of thing. Second one, I take this action.
My reward is two carats, right? So say my policy is to turn right unless I see immediate danger on my left. So I turn right, and I turn right, and I get two carats. I turn left, and I can't turn left because there's a media danger over there. It's against my policy, whatever.
So the reward signal is the number of carrots that I received right there at that first step. And then there's a value function which actually tracks the reward over time. And the objective in reinforcement learning is not to maximize the reward signal at each instance, but it's to maximize the value function over time. And so in a circumstance where I turn right to get two carats, but I could have gone down and then right and gotten 50 carats.
27:16 So maybe I should have gone down and right.
And so this is kind of how an agent will learn in a reinforcement learning environment to maximize the value as opposed to just maximizing incrementally the reward. So after every action the agent takes, the

environment sends a single number. That's the reward. The reward that the agent receives depends on the agent's action and the state. And so the agent's only goal is to maximize the total reward, which is the value function over the long term.
Any comments here?
All right, so precision tyler, do you want to read the quote at the top of this?

27:55 Tyler:
Sure. So the Beijing brand has optimized not its expectations. It also has to optimize precision. This means that one has to predict how much precision is affordance to various sources of sensory evidence relative to prior beliefs.

28:09 Bleu:
Thank you. And so this is like a definition from Wikipedia talking about like classifier systems and precision and recall in a classifier system, which is like a predictive system, or it can be Bayesian classification. So there are retrieved items. So we're going to say of this field of images, the ones in the circle are cats. Right.
So we're identifying these circles, the data points within the larger circle as all these things that the classifier says, these are all cats. The precision is of all of the things that the classifier says are cats, how many are actually cats? So it's the true positives that are in the system. And then the recall is like how many total how many relevant items are returned. So that's the precision here that's referenced by Frustrated.
Do you want to read this one toothbrush, Tyler?

29:09 Tyler:
Sure.

29:10 Bleu:
All right.

29:10 Tyler:
So when dynamics change, sailings should be prevented from potentially increasing free energy. In the context of corporate governance, 1 may think of pattern recognition as a one form of salience.
The more senior and experienced board members are, the more likely and they feel comfortable with mental shortcuts such as pattern recognition built through prior experience.

29:31 Bleu:
When I search for salience, I just randomly search for pictures of salience to make this pretty red apple picture appear here. But when I searched salience and I looked at images, a lot of them were like stakeholder salience. And so I couldn't even start to try to unpack this. Like it was some corporate definition of salience and some corporate model of salience that I don't know if Bijan is referring here to more indirectly, or Tyler, if you know anything about the stakeholders salience model, but maybe we could ask Bijan if he is referencing that or if he's just talking about salience the way that we talk about it. As in things that we attune our attention to because they're relevant for the task at hand.
Or like things that stick out or things that are memorable or relevant.

30:20 Tyler:
Right, yeah, I don't think there's like a corporate governance, like, technical definition force. It I think it's just like you have limited attention. There are things that the portal is more likely to focus on and they have to constrain their attention on limited information.

30:33 Bleu:
Yeah, but I was intrigued by the fact that there is like a corporate salience model.
Like oh, it's beyond talking about corporate salience. What's that? Because it's just something that I've never heard of before.

30:45 Daniel:
Well, it's something we've seen with many active coherence ontology terms, that there's a broad everyday qualitative sense, like salience is something that you pay attention to. And then there's also a more technical, usually Bayesian sense such as salience is actually referring to the precision in terms of a variance estimator that we place on incoming sensory data.
Whereas low attention means that data points coming in are not salient. They're not used to update the model. High attention is coming together with high attention to incoming data that does update the prior a lot into the posterior. And so which patterns are salient is itself learnt. And we can think about that as the regime of attention with all the strengths and weaknesses, the expertise and heuristics bring along with.

31:45 Bleu:
Yeah, and I think they go on to say, I think gen impacts that more in the book about salience and pattern recognition.
Okay, so single and double loop learning. Tyler, do you want to take that?

32:05 Tyler:
Single loop learning occurs when errors are detected and corrected without altering the governing values of the master program. Double loop learning occurs when Northern Dalton and error is necessary to alter the governing values of the master programs. Most governance models are at best, single loop, rule based learning systems that struggle to activate double loop learning.

32:28 Bleu:
Thank you. And I found this little loop, this loop diagram, which is like actions and consequences. Actions and consequences. And that's like the single loop. But this double loop learning goes into understanding governing variables.
And this is kind of like, I think about some kind of meta analysis where you can zoomed out more in the double loop learning.

32:55 Daniel:
Yeah, with our favorite example of the temperature in the room, if the single loop is just the knob that we're controlling on the heater or the air conditioning, the double loop would be taking a step back and thinking, well, could we also open or close a window? And so if we only stay within the single loop, maybe our heater or cooler has limited capacity. And so there's times where the environmental challenges are going to take us outside of the range of what can be learned or accommodated with a single loop. And it's those times, especially when opening up into a double loop space or like a hyper prior space is what is actually required to get the generative model operating in a way that's survivable.

33:45 Bleu:
I would never open the window with the heater on, but boy, I changed the weather shipping on my back door this year and it. Made such a difference. So that's a more realistic like a governing variable like you have a leaky house or poor insulation or something like that.
All right, deliberate ignorance. So that is choosing not to know. So Bijan talks about this and says the

more senior and experienced board members are the more likely that they feel comfortable with mental shortcuts such as pattern recognition built through prior experience. That's what I was going to say earlier about this. Again, I thought it was this next slide but when they talked about here pattern recognition as one form of salient but in this deliberate ignorance it says it is a form of prior based heuristic or too often simply deliberate ignorance.
However, in a discontinuously non repeat game environment, pattern recognition without maintaining sensitivity for small but nonetheless transformative variations put survival at risk.
34:52 Therefore we need a process and a measure of errors that optimizes survival. Hence action, centric free energy, minimization powering, inactive AI. And so I thought about this like okay, we're talking about corporate strategies. So in pattern recognition that's super useful force something like a game of chess.
Chess has like these are the pieces, these are the rules. There's only so many ways that a piece can move and yes, super complicated. But over time a master chess player can start to recognize patterns in the game or like certain sequences of moves that result in success. And so if you know those sequences of moves that result in success, that's pattern recognition. But in a non repeat game like where the rules are always changing and the pieces can move in a different way like imagine now we're playing 4D chess where we could go also like XY but we can also move in the z direction, jump over pieces and so forth.
Like if you add an extra dimension, those prior patterns that you knew for XY chess now doesn't happen, right?
36:01 They don't even apply or aren't even relevant here. So failing to update your prior pattern cognition is going to not lead to successful strategies.

36:11 Tyler:
Just to make this a little bit more concept. A very common example of this that I've emergence is that sometimes when you're doing business strategy and the business is still running and you might have customer service claims incoming while you're doing this core business strategy, generally you want to ignore all these customer service claims because that's just like noise and you don't want to pay attention to it.
It's going to overwhelm you though occasionally you'll sometimes hear some very unusual customer experience claims that kind of implies something much bigger and much more serious is going on. System will be within the organization and you need to have this like spidey sense and this is where there's often used in business settings like the Spidey sense of knowing like oh wait, something bigger is going on. I need to switch gears into being super micro rather than being macro. So I think it's a good example of when you have to kind of switch your model of how the organization is working really dynamically and go from deliberate ignorance to choosing what information will be selling to you.

37:13 Bleu:
Conor okay, and then sophistication which I thought this was relevant, I can't remember the quote that said this again. Bijan actually started to unpack this in figure four. And he said we alluded to. Sophistication back in chapter one. And this also applies to this like double loop learning. Sophisticated inference is where you have many tangential steps that can unfold. And this also applies to the principle of least action, which we're talking about, which is like a decision tree search. Like if you're standing here at step one, you can go which is like the top level here. You can go to any of these four points. You one u, two u, three, you four.
So if you're here at the very beginning step and then each one of these points have their own branch choices that you can make. And then each one of those choices have their own choices. And so this is the sophisticated inference which is unpacked in this paper, sophisticated inference.
38:15 And then we've done on different live streams here before. Also, we didn't do this paper, but we

did deep effective inference.
I think that was maybe also 1713. I can't remember, but a long time ago it was like a 2020 early Livestream with Dayan. Smith so in this sophisticated model, it's unfolding temporarily through time. And this applies to both like the trajectory when we're talking about least action trajectories and also to double loop learning where you're looking at like maybe governing variables over time. So he starts to unpack that here in this chapter.
Goes a little bit more into it than in chapter one. All right, so now we're on the fourth part of this claim. We made it all the way to them. Active inference should provide the basis to set free the collaborative human machine artificial intelligence potential so integral to the multi intelligence firm. And note those two separate like AI abbreviations.
39:20 So Bijan makes a claim social Fields are not as real time as electrically charged and chemically powered, neural responsiveness. But the underlying logic and principles nonetheless determines firm performance and survival. All living self organizing systems, as is true for organizations, strive to reduce entropy in pursuit of minimizing surprise. But organizations other than living systems are too often trapped in what anger is 1995 termed skilled incompetence, meaning that organizations are programmed to deal with error and threat in ways that are counterproductive to their own intentions, not least because organizations struggle with unlearning and deliberately suppress subtlety. Maybe refers back to that deliberate ignorance that we talked about earlier.
Do you want to talk here, Tyler, about organizational becoming?

40:12 Tyler:
Yeah, sure. So just on that last slide, I got a couple of thoughts on that one part that was interesting. About this was like explicitly connecting free energy to the firm, which I guess that's the whole point of this book. But I think that's actually quite a large claim to say that firms also exhibit free energy.
So I just want to point that out. But then also I think a really important aspect of free Energy governance is the DAG between stimuli and action and action stimuli where that is a lot larger in an organizational space rather than something kind of like a neuron, for example. And that makes, I think a lot harder to operationalize and really understand free energy in like a firm context as well. So the next slide that goes into organizational becoming, this is a term he doesn't really define explicitly throughout the book, but he does mention it quite a number of times, so I think it's worth calling out. So he says strategic renewal is as organizational becoming categorical imperative of being in the game.
41:16 And so again, he doesn't explicitly define this, but I think what he's implying is this idea of becoming as like this, like deeper philosophical term that goes back thousands of years where the organization isn't a static thing or it's not something that becomes something into an end state, but rather it is like a dynamic process. And it is always a dynamic process.
Bleu Daniel, do you have anything you want to add to this?

41:42 Daniel:
You have the Heraclitus River quote, which is a statement of the dynamic nature of becoming. And then in contrast we have being. And so people often talk about being and becoming as a noun centric and a verb centric way to describe something is something is that's like being or is it becoming? Which is more of a process based focus.
So he refers to it as the site of organizational becoming, not some sort of ready made tool that's going to be, but rather a process that will be applied, or is already being applied as a distributed site of becoming.

42:37 Bleu:
Cool. Do you want to read this one too? Tyler sure.

42:40 Tyler:
So FPP is not supposed to be craving the powers assistant to exploit uncertainty and complexity in pursuit performance and survival by way of curiosity driven epidemic foraging and exploration. Correspondingly, Free Energy Governance is a next generation learning system designed for a discontinuous world.
Eachaining the firm from dominant top down logics empowering continuous strategic renewal through purpose directed generative inferential and cross hierarchical prediction error minimization.

43:15 Bleu:
I wonder here if organizational becoming and strategic renewal, I wonder if those are maybe being used interchangeably. We've talked about strategic renewal or maybe strategic renewal is like a fundamental like an organizational becoming or organizational becoming includes strategic renewal and other things. I don't know. That's a good question for Bijan, who we will get to ask lots of questions of next week. Do you have any additional concepts here, Daniel or tyler okay, Free Energy Governance, I'll let you take this one.

43:54 Tyler:
So free Energy Governance effectively transposes the active coherence framework to the firm and adopts FEP as a first order principle underlying a new logic organizing built around three core dimension so structure, hierarchy, cognition, environmental enactment, capabilities, sensing and sense making. The framework is centered around crosshair will generative process of sensing and sense making to institutionalize continuum strategic renewal as a matter of active inference in pursuit of firm outperformance and survival.

44:29 Bleu:
Nice. So here we are at the end of the Free Energy Principle chapter, the end of the first section on the FEP in the Free Energy Governance textbook. Looking forward to having a good discussion with the author next week. Do you guys have any final thoughts on this section or chapter or anything? Overall.

44:55 Daniel:
I think a question to unpack is going to be how does a descriptive theory of everything in Free Energy Principle help us make normative or even adaptive decisions for ourselves and for our organizations? Every single information architecture or strategy that a given group implements will be describable in terms of the particular partitioning into internal, external, and blanket states. They're all going to be describable in terms of Bayesian optimal inference, given some generative models and encoding stream of data. So how do we take something that is kind of like the number line, it just is, and it is neutral and then proactively apply it up to and including the last mile? Do people need to actually know about information entropy to be part of a system that's designed with these strategies in mind, or is there going to be some other way to communicate and apply it?
45:57 So how we actually move it to the space of proactive decisionmaking today and what that looks like in different sectors and for different organizations is really exciting.

46:16 Bleu:
Awesome. Well, I'm also looking forward to reading the next sections of the book and kind of going beyond the background section into what's next, what is the implication? And looking forward to Bijan's comments next week. Tyler, any comments are good.

46:35 Tyler:
All good for me.

Looking forward to next week.

46:38 Bleu:
Yeah, me too. So if anybody has questions, please go ahead and submit them. You're welcome to email them to us or submit them here in the comments, but do it before the 11th, which is why our meeting with Bijan will be and if you want to participate on the live stream and have read the chapters in the book and watch the live streams or one or the other, get in touch. Okay?
Thanks, guys. Thanks.