



# How cognitive biases and ranking can foster an ineffective architecture and design

Kenny Baas-Schwegler & Evelyn van Kelle

Xebia

# Engineering Flowchart

DOES IT MOVE?

NO

YES

SHOULD IT?

SHOULD IT?

NO

YES

NO

YES

NO  
PROBLEM!



NO  
PROBLEM!

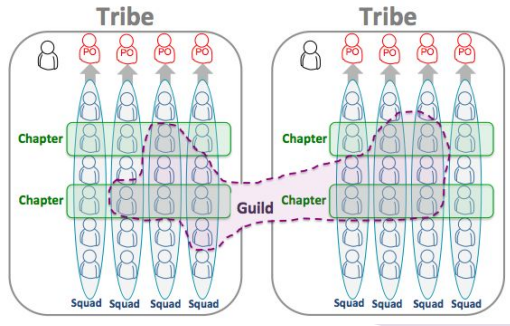
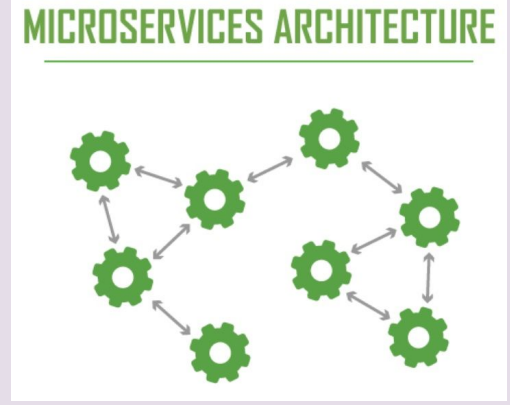
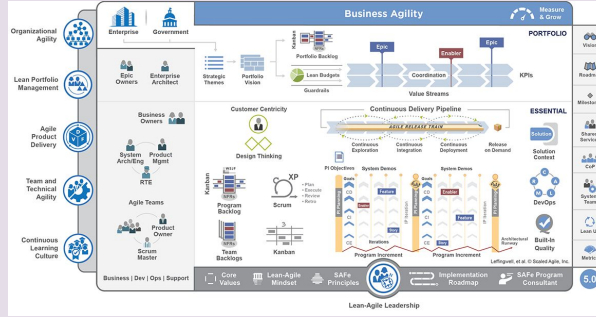
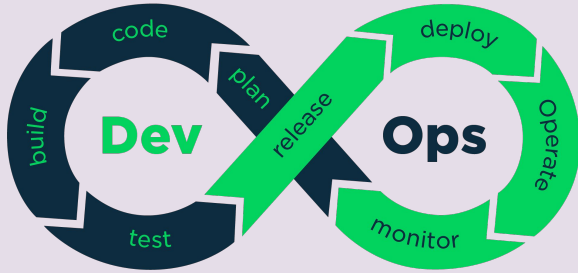




## Complexity:

When things go bad, endure and observe what you can change, and probe!

don't go chasing a happy to-be situation



**Matthew Skelton #BLM** @matthewpskelton · Oct 27  
TIL: a major UK group of companies decides - in 2020 - to adopt a cargo-cult Spotify Model \*and\* SAFe together.

What could possibly go wrong?



14 7 50

**Steve Smith** @SteveSmith\_Tech · Oct 27  
@kenny\_baas on line 1 📺



1 7

**Kenny Baas-Schwegler** @kenny\_baas

Replying to @SteveSmith\_Tech and @matthewpskelton  
you called?



We're dealing with complex  
adaptive socio-technical  
systems.

Those 3 aspects impact  
each other.

Balance is key



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# Open office space to improve communication



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Investments in technology are also  
investments in people,  
and these investments will make our  
technology process more sustainable

Nicole Forsgren

Xebia





If you design a monolith or part of a software landscape without boundaries or the wrong boundaries, you just architected an open office space for software teams.

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**Habitability makes a place livable, like home. And this is what we want in software — that developers feel at home, can place their hands on any item without having to think deeply about where it is.**



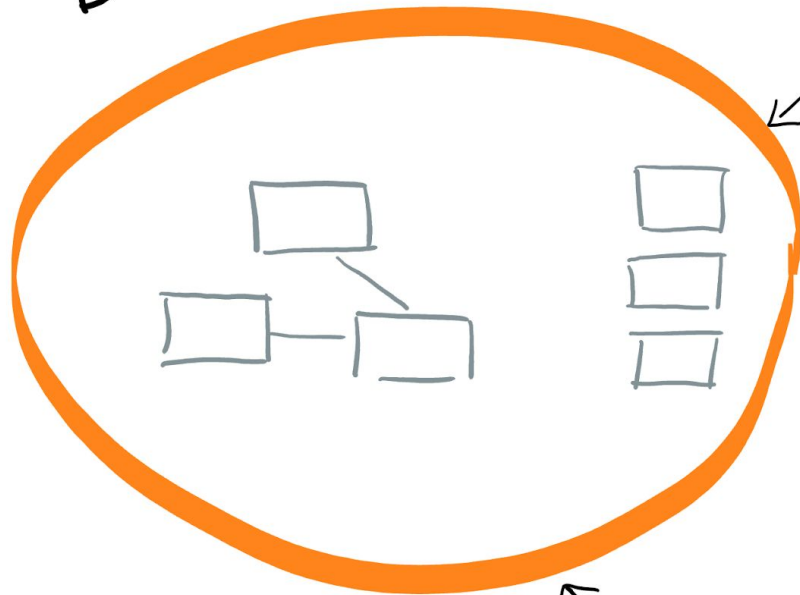
“**Architectural design** is system design.  
System design is **contextual design**  
— it is inherently about **boundaries**  
(what’s in, and what’s out, what spans, what  
moves between), and about **tradeoffs**.”



—Ruth Malan



# BOUNDED CONTEXT



UNIT OF  
CONSISTENT  
LANGUAGE

A MODEL FOR A  
SPECIFIC PURPOSE



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“If the *architecture of the system*  
and the *architecture of the organization* are at  
odds,  
the architecture of the organization *wins*”



—Ruth Malan

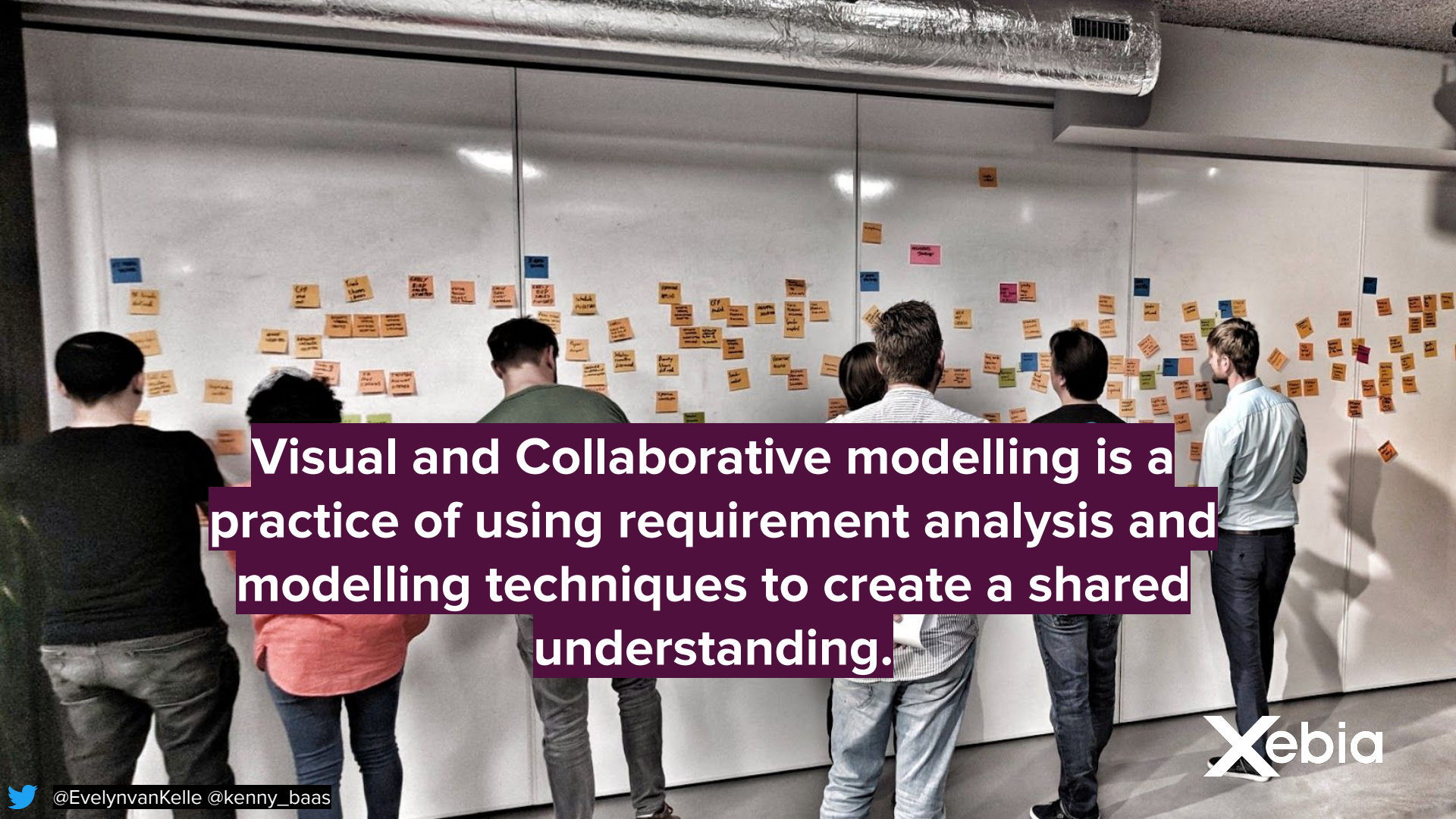


# Creating a shared sense of reality

TURN  
TO CLEAR  
VISION


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A group of six people are gathered around a large whiteboard in a meeting room. The whiteboard is covered with numerous colorful sticky notes (yellow, orange, blue, pink) and some diagrams, indicating a collaborative brainstorming or modeling session. The people are seen from behind, looking at the board. The room has a modern feel with a silver duct on the ceiling.

**Visual and Collaborative modelling is a practice of using requirement analysis and modelling techniques to create a shared understanding.**

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~~technical architect~~  
Socio-technical architect  
(A role, not a function!)  
(and of course owned by a person or group)

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## Ensuring flow in meetings

How to make sure everyone said what has to be said?

How can we create and include new insights?

Who decides on the architecture?

How to get everyone on board on the decision?

Who to invite?

How to deal with issues that keep cycling back?

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Photo by Mike Lewis HeadSmart Media on Unsplash



## Ensuring flow in meetings

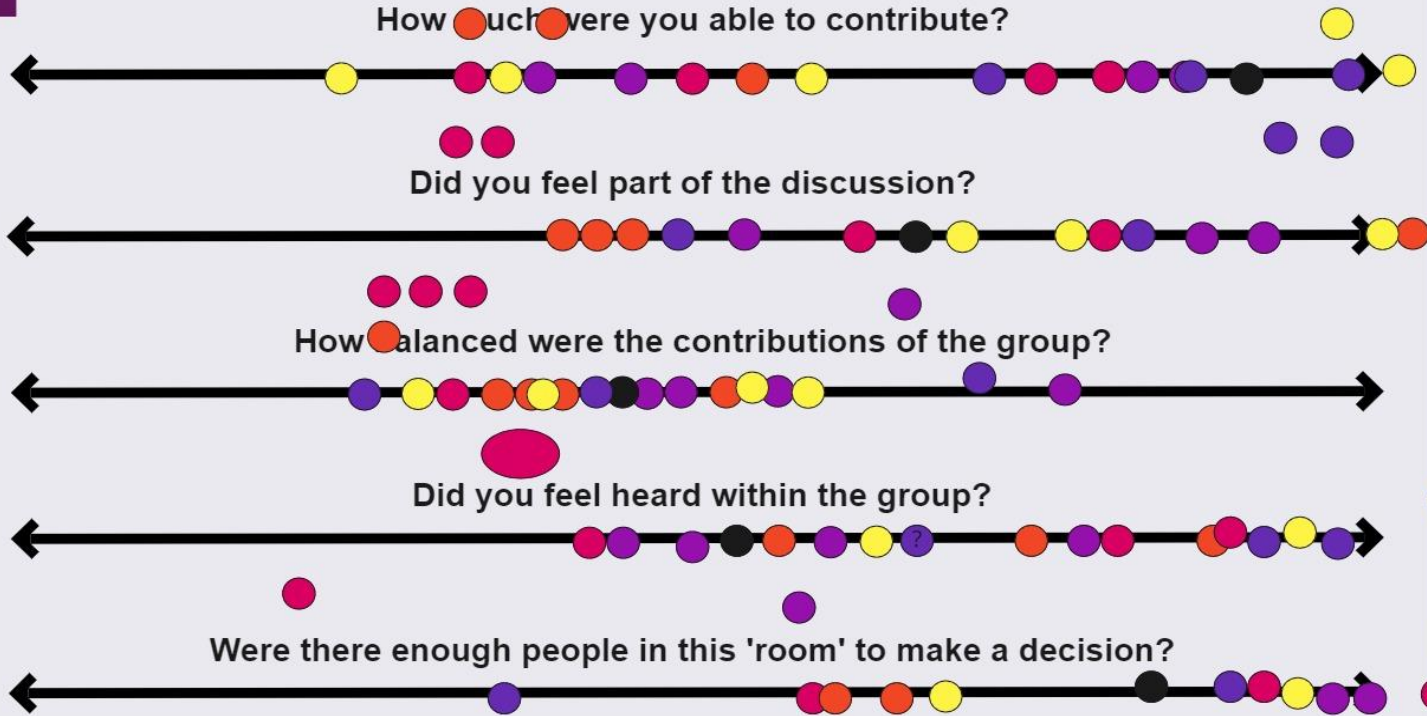
How to make sure everyone said what has to be said?

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@EvelynvanKelle @kenny\_baas



from: Decision-making practices for evolving and sustaining software architecture by Rebecca Wirfs-Brock and Ken Power

# Ranking



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# Ranking

*Once upon a time, there were a tall white guy and a woman in IT...*

## Explicit ranking

- Your position in the org chart, your job title, your job description, level of power, etc.

## Implicit ranking

- Your gender, your skin colour, the level of charisma, how you communicate/treat others, the level of informal power you have, etc.





# Symbolic violence



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“A Pair programming or mob session where one of the participants is hitting oneself is not a co-creation, it is submission..”

— Romeu Moura



# How to deal with the impact of ranking?



<https://twitter.com/manwhohasitall/status/1321550806869450752?s=20>

Play a little mind  
game called  
'Turn it around'!

# So what?

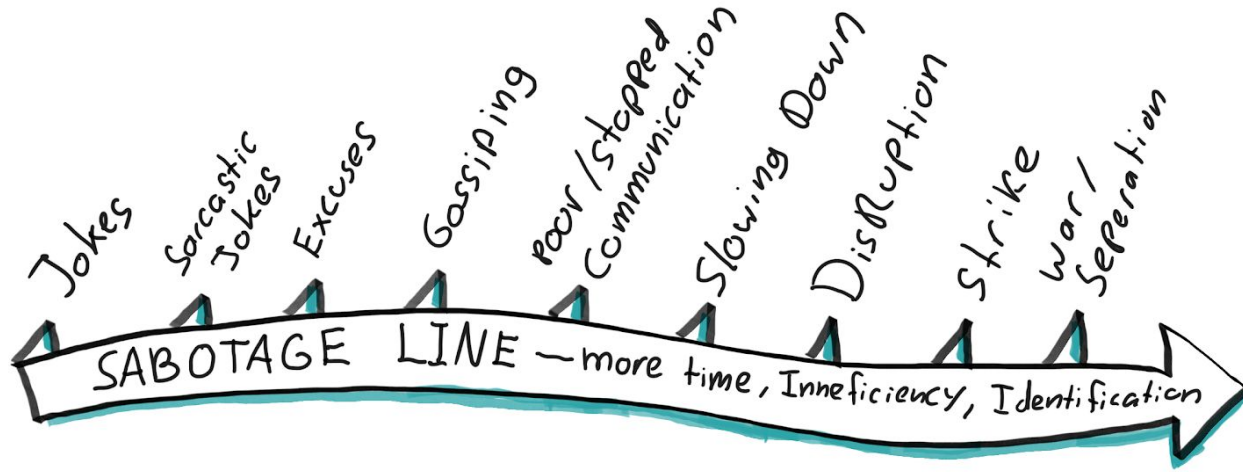


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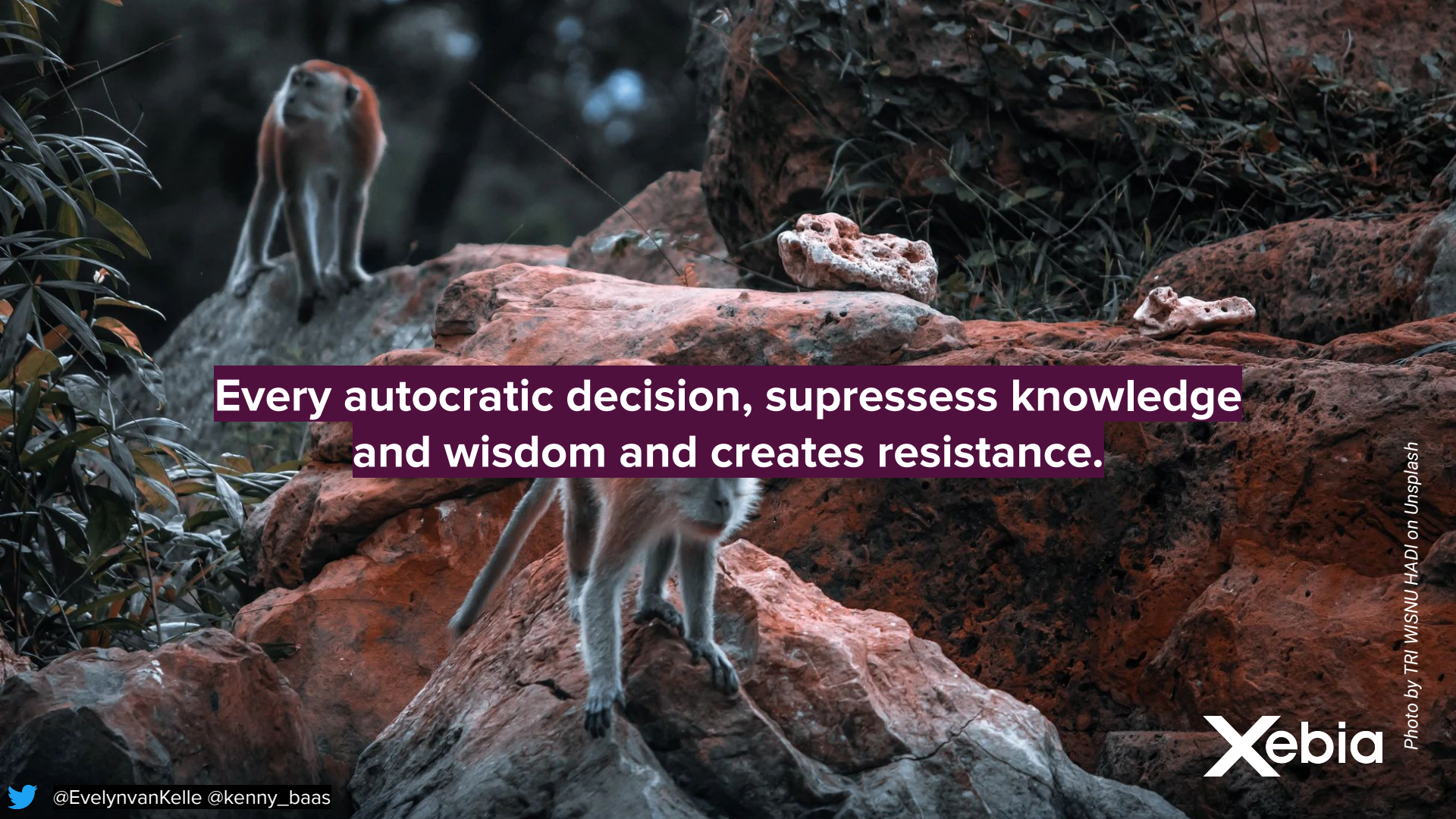
# Shadow IT

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Deep Democracy the lewis method





**Every autocratic decision, suppresses knowledge and wisdom and creates resistance.**

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Photo by TRI WISNU HADI on Unsplash

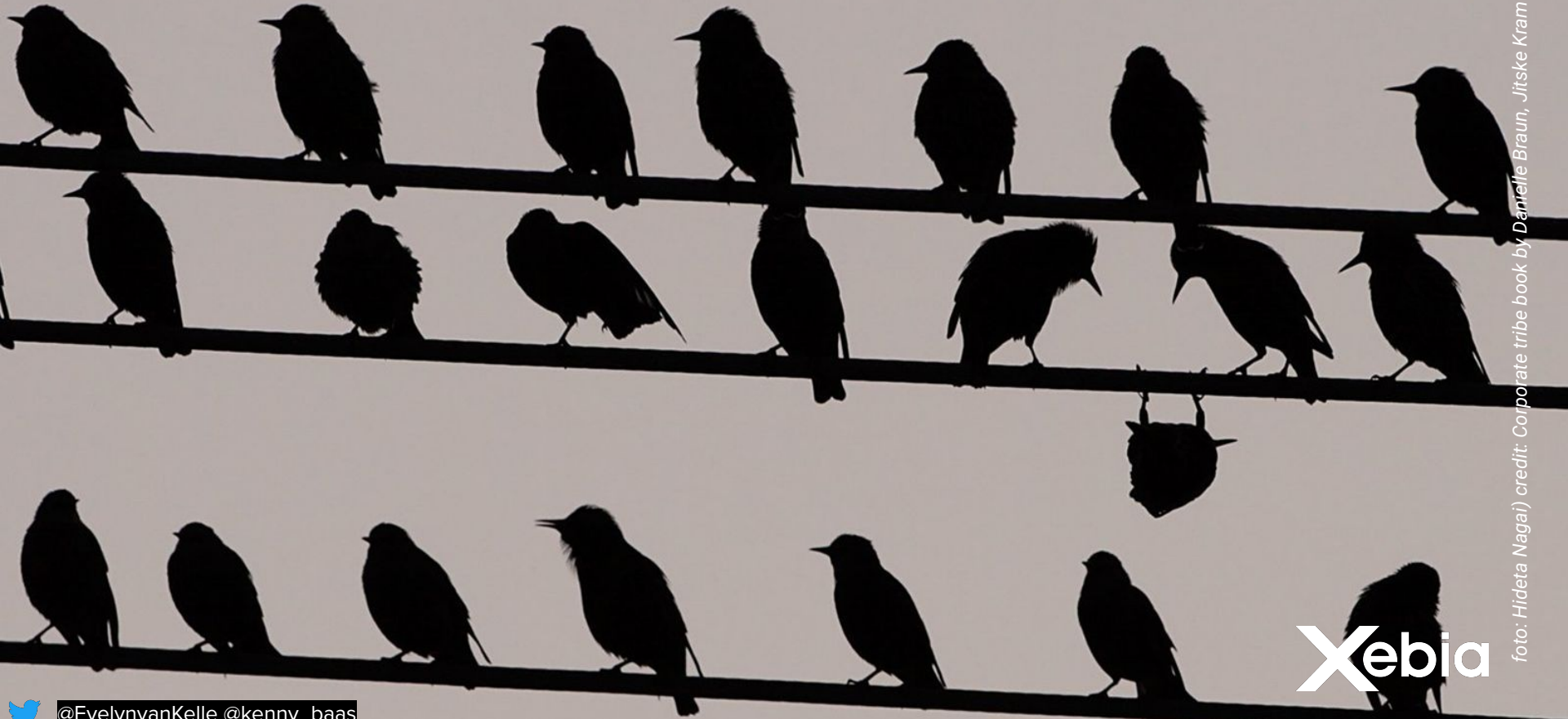


foto: Hideta Nagai) credit: Corporate tribe book by Danielle Braun, Jitske Kramer

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The image features a light gray background with several horizontal black lines representing branches. Numerous black silhouettes of birds are perched on these branches. The birds are in various poses, some facing left, some right, and one is hanging upside down from a branch. A purple rectangular box with white text is centered in the upper portion of the image.

“And those who were seen dancing were thought to be insane by those who could not hear the music”

foto: Hideta Nagai) credit: Corporate tribe book by Danielle Braun, Jitske Kramer

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 @EvelynvanKelle @kenny\_baas

A large, mature tree with a thick, textured trunk. A wooden sculpture of a hand is attached to the trunk, holding a white rectangular sign. The background shows a paved area, a white van, and a park bench. The scene is brightly lit, suggesting a sunny day.

How to make sure everyone said what has  
to be said?

Own, play and share your rank

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Photo by Neil Thomas on Unsplash



## Ensuring flow in meetings

How can we create and include new insights?

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# Cognitive bias

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# Functional Fixedness

*Getting stuck in what you know*

- A mental block against using something in a new way that is required to solve a problem
- What we know hinders us to take on new perspectives



# Anchoring Effect

*We think relatively, rather than objectively*

- 
- Relying too heavily on the first piece of information you receive (the anchor).
  - We adjust our decisions based on this anchor. “This shouldn’t take more than 2 weeks, right?”



*This is why stickies are so effective...*

# False consensus effect

*"This is the best model in the world, right?"*

- 
- Overestimating the extent in which others share your beliefs, opinions or enthusiasm.
  - Always check your assumptions.





How can  
we create  
and include  
new  
insights?

- Embrace the Harry's in your team/organization to counter functional fixedness
- Model it wrong. Just to see what it brings you
- Drop your anchor consciously
- Leave room for individual contribution to counter the anchoring effect
- Identify & check assumptions
  - And make them explicit to counter the false consensus effect
- Consider the possibility that your model is not the best...





## Ensuring flow in meetings

Who decides on the architecture?

How to get everyone on board on the decision?

Who to invite?

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# TOILET PAPER:

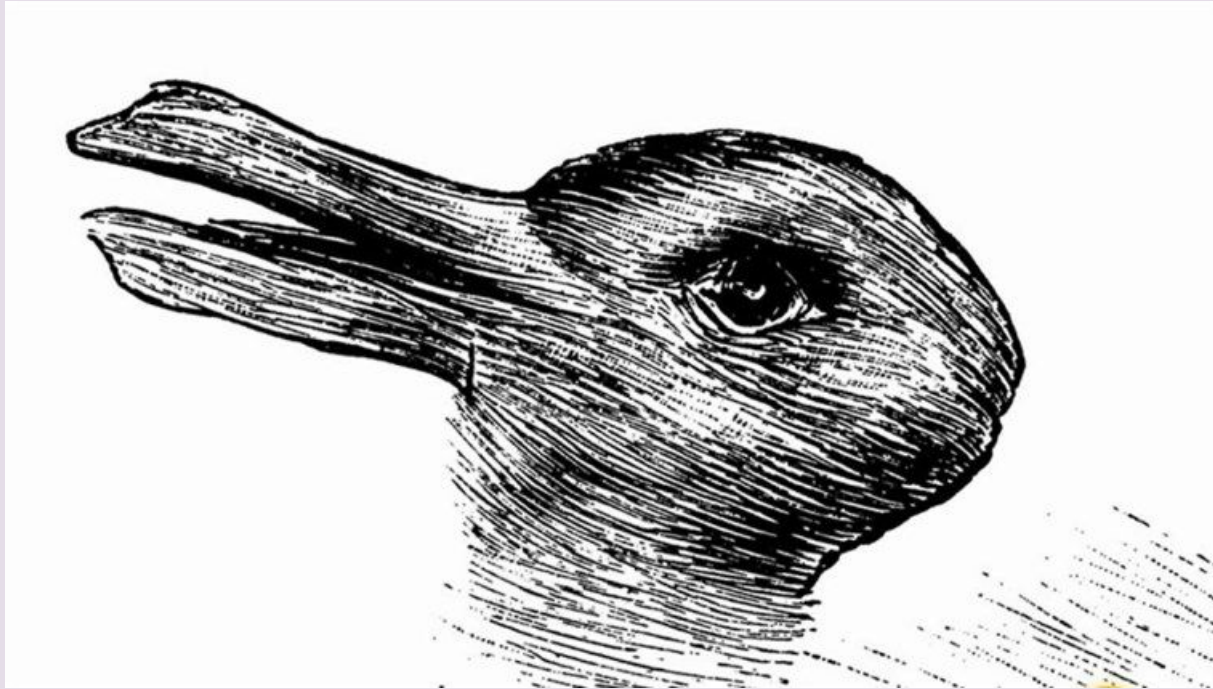
UNDER OR OVER?



<https://www.today.com/home/toilet-paper-over-or-under-debate-resolved-1891-patent-t9776>

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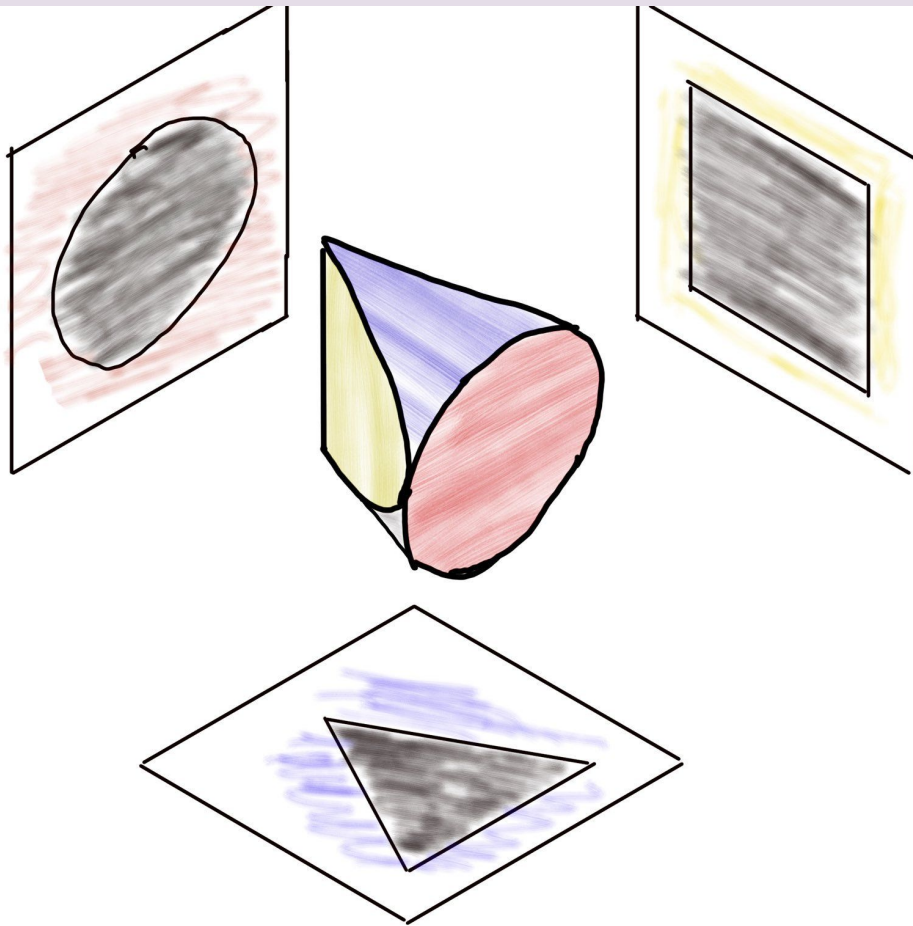
# Accurate vs Completeness



# Accurate vs Completeness




<u>Discussion</u>	<u>Dialogue</u>
Actions, thinking fast	Insights, thinking slow
Convince, take a stand	Understanding, listen
Think against other (yes, but..)	Think together with others (Yes, and...)
Answer are central	The questions are central
Attack and defence	Investigate and check
Opinions and arguments	Principles, values and norms
Judgement	postpone judgment
Finding solutions	find the underlying reason
Risk: false consensus, powerplay	Risk: responsible abstraction, woolly



<https://twitter.com/RonJeffries/status/1128329696012378114>



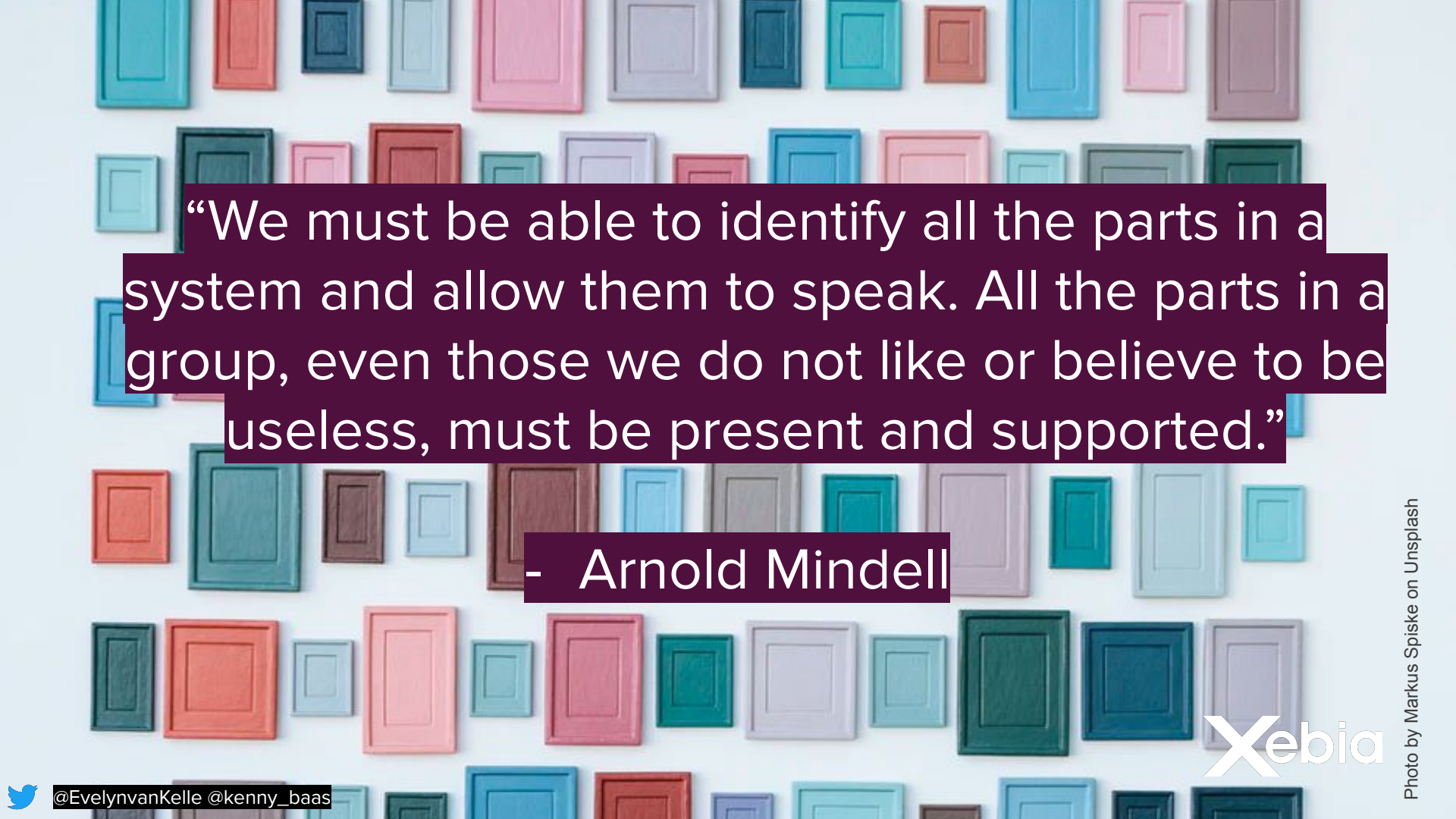


**“Peace is not the absence of conflict.  
Conflict are the status quo, it is how you manage  
them is what makes peace.”**

**- Bart Brandsma**

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Photo by Tamara Gak on Unsplash




“We must be able to identify all the parts in a system and allow them to speak. All the parts in a group, even those we do not like or believe to be useless, must be present and supported.”

- Arnold Mindell

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Photo by Markus Spiske on Unsplash



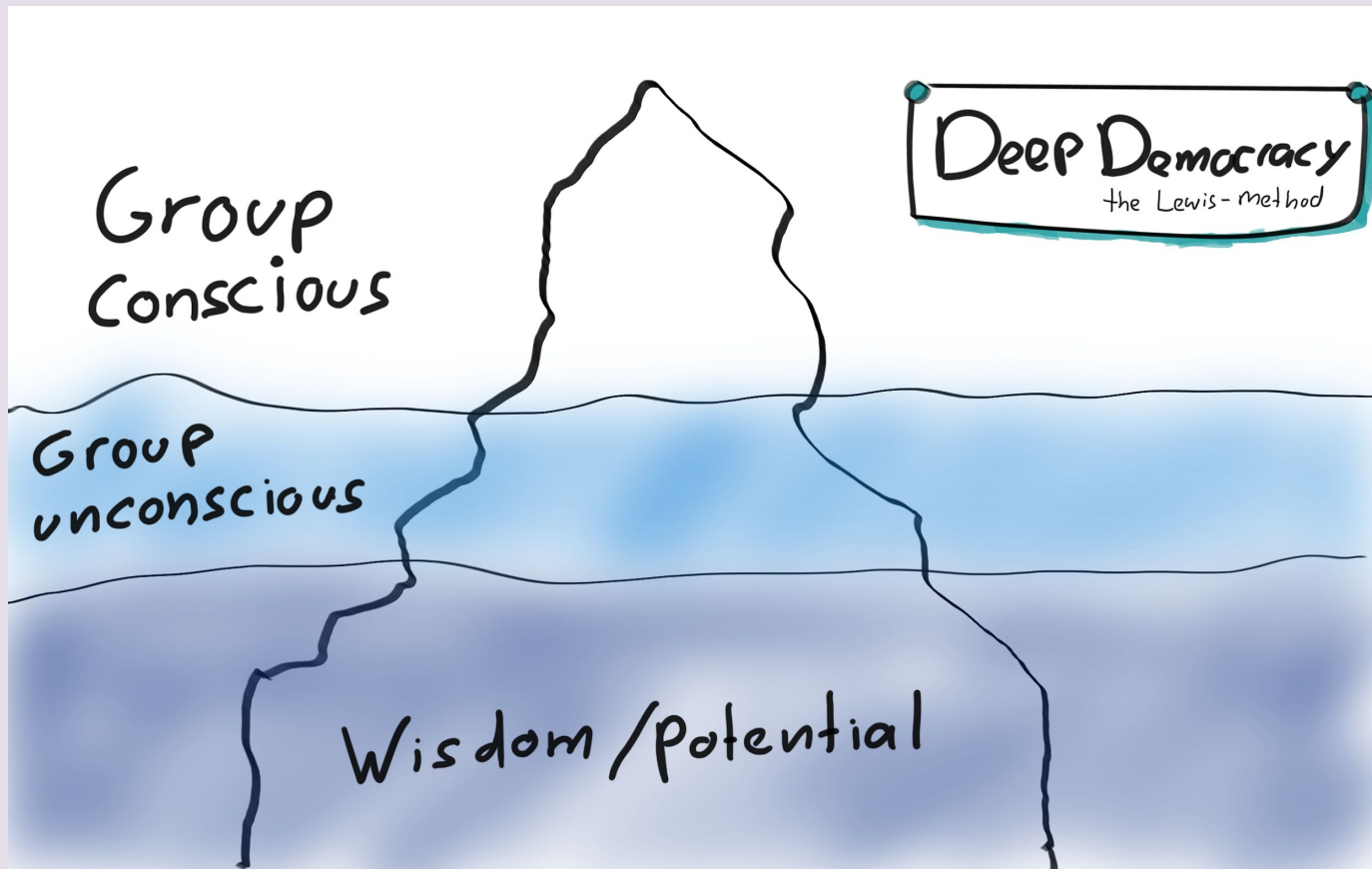


Who to invite is about thinking  
in *perceptions* instead of *people*.  
Invite *especially* people  
with *annoying* perceptions.

# Meetings as campfires



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credit: human dimensions



# Deep Democracy the lewis method steps

1. Gain all views
2. Make it safe to to say alternative views
3. Spread the why  
----- VOTE -----
4. Ask: What would it take for you to go along?



# How much space do you give?

1. Idea: You have an idea, but nothing is certain
2. Suggestion: You have a clear intention, but other insights are more than welcome
3. Proposal: You have a concretely worked out proposal. Only serious objections can influence the decision
4. Command: Decision is made, what does it take for you to go along?





**Who decides on the architecture?**

**How to get everyone on board on the decision?**

**Who to invite?**

**Use the Deep Democracy the Lewis method steps.**

**Be clear on how much power people have on decision making.**

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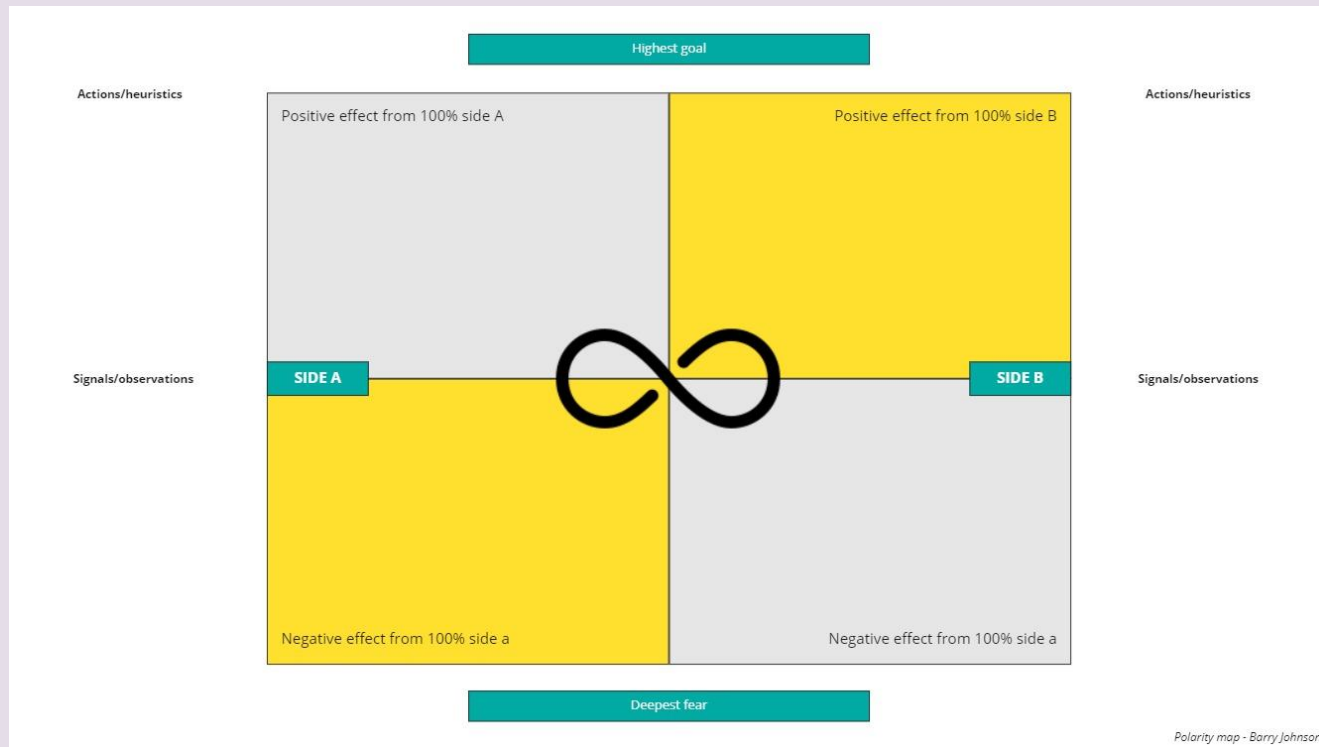
## Ensuring flow in meetings

How to deal with issues that keep cycling back?

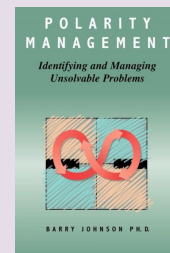
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# Polarity mapping

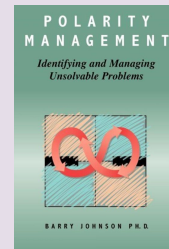
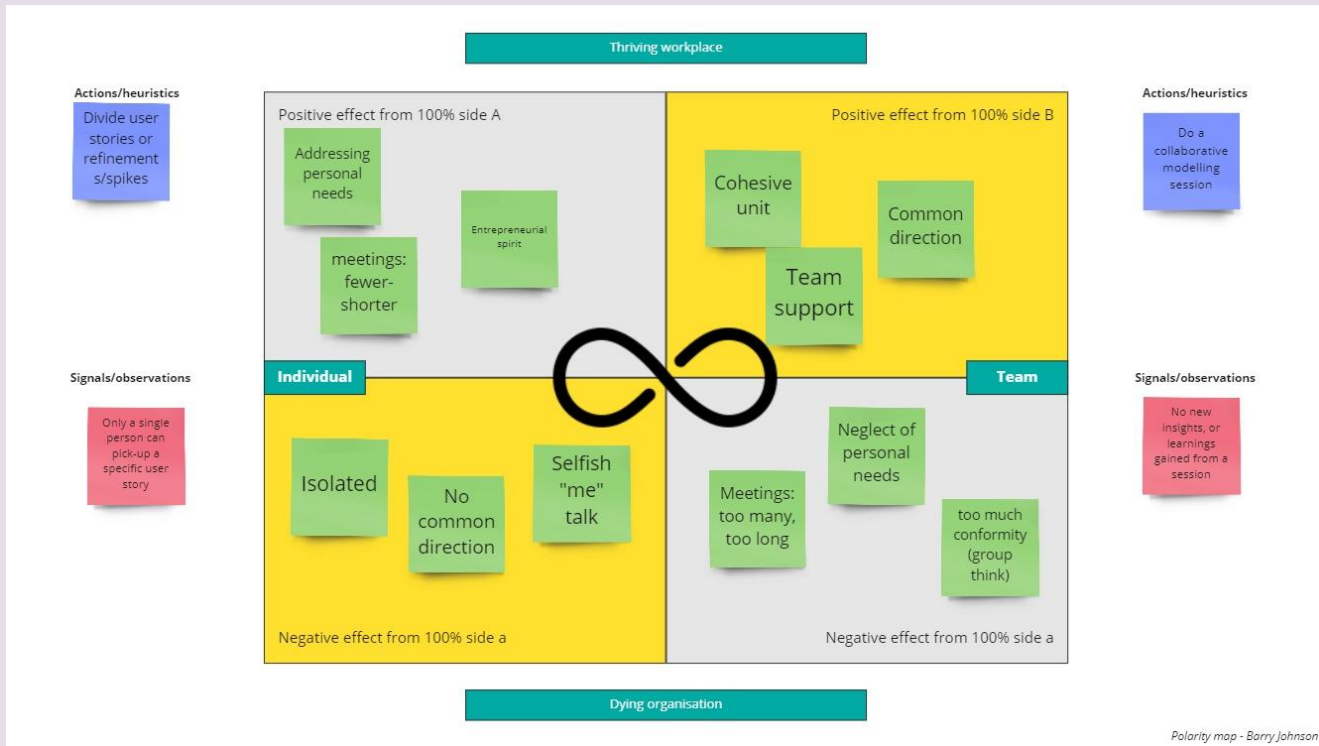


Polarity map - Barry Johnson





# Polarity mapping





## Ensuring flow in meetings

Create awareness of people their ranks in the group

Own, play and share your rank

Be aware and make explicit the biases at play

Use Deep Democracy the lewis method in your decision making

Start managing polarities with the group  
by using polarity mapping

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Leave the judging to cats.

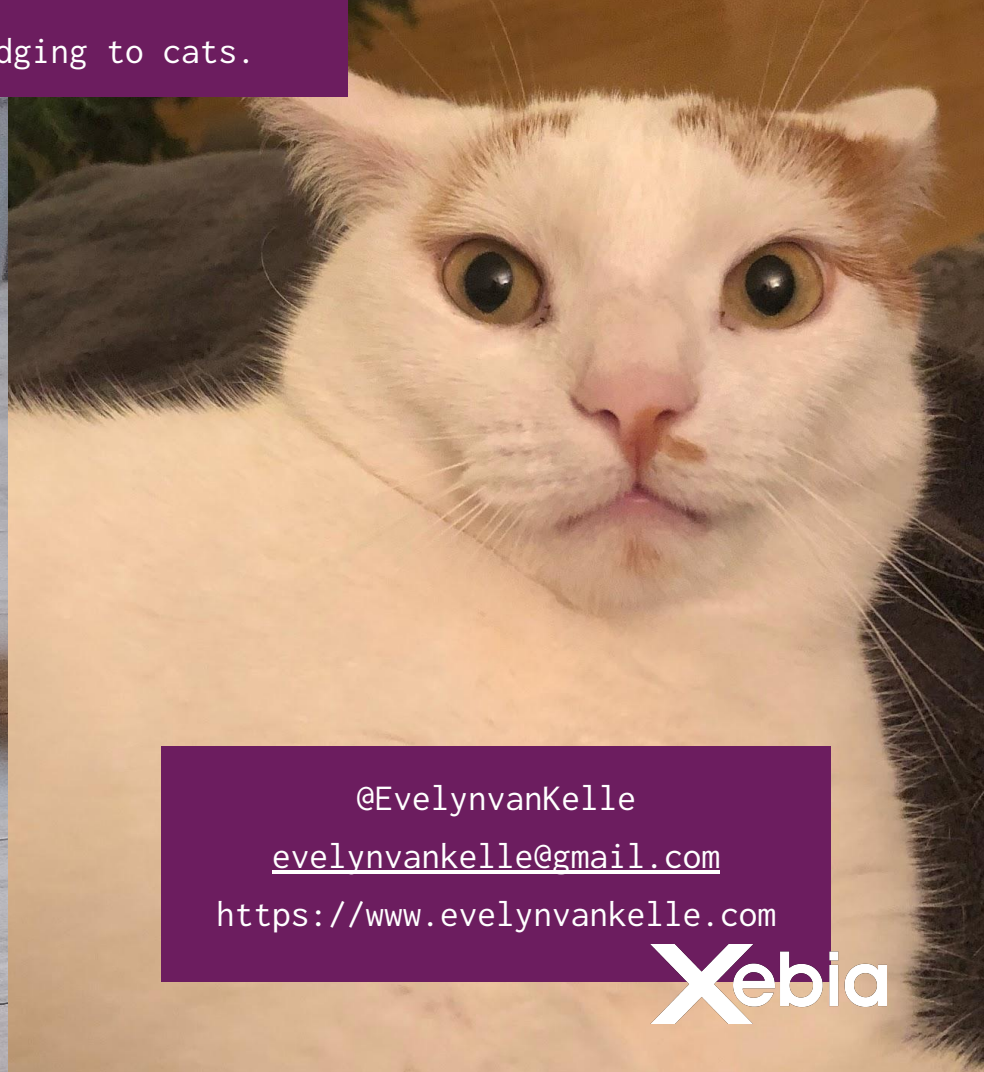


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<https://speakerdeck.com/baasie>



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