



Welcome!

Designing Ethical Things: A Moral Algorithm?

Co-design workshop
CIID Research x VIRTEU

ThingsCon
Rotterdam
December 6th, 2018



thank you for coming.

Agenda

ARRIVAL

Name tags, consent forms

OVERVIEW + INTRODUCTIONS

Internet of Things, Ethics

Our company + Values

--short break--

Our company's problem of the day
A Moral Algorithm?

Feedback and Brainstorm

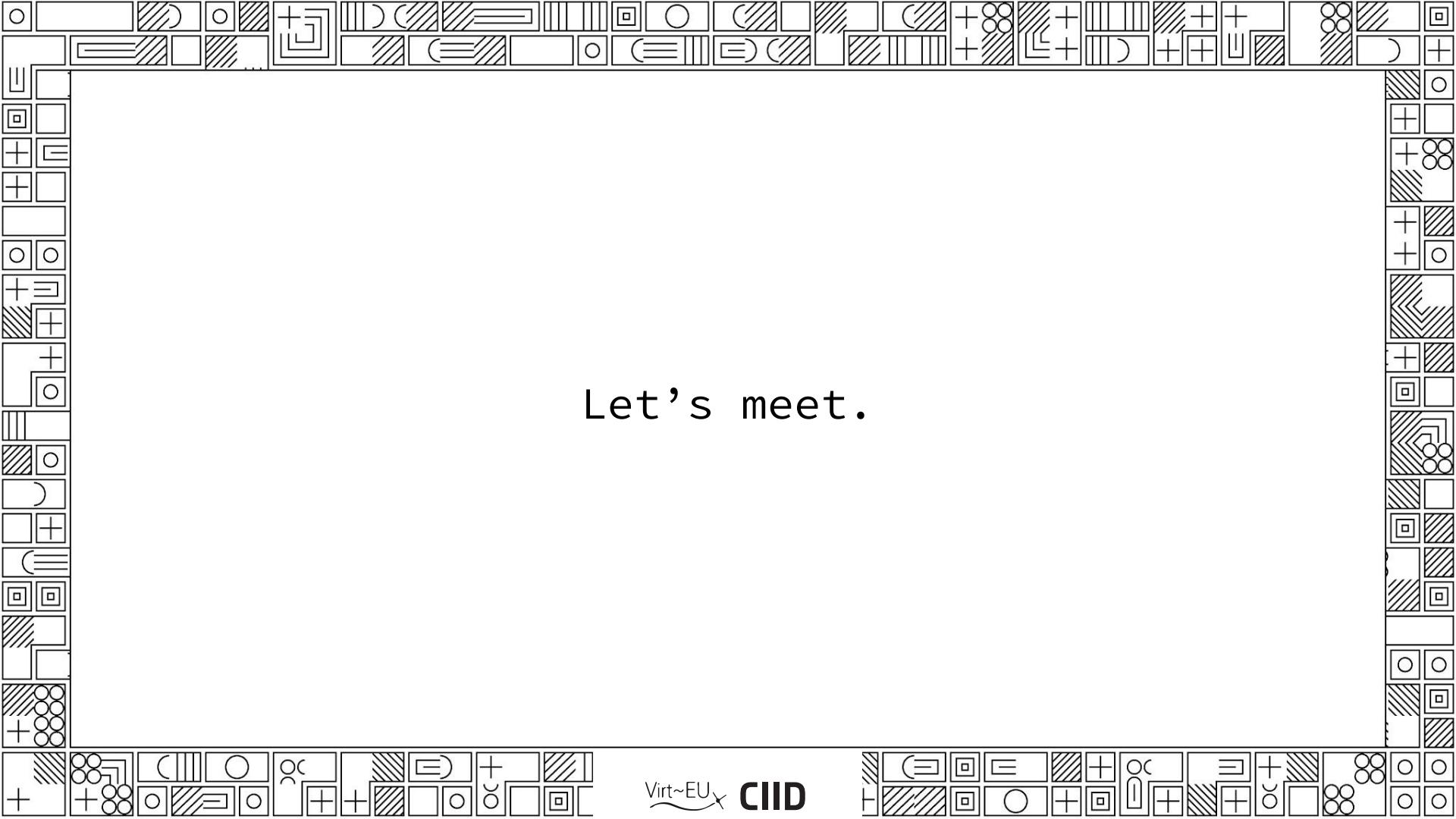
END

OVERVIEW + INTRODUCTIONS



WITH YOU:

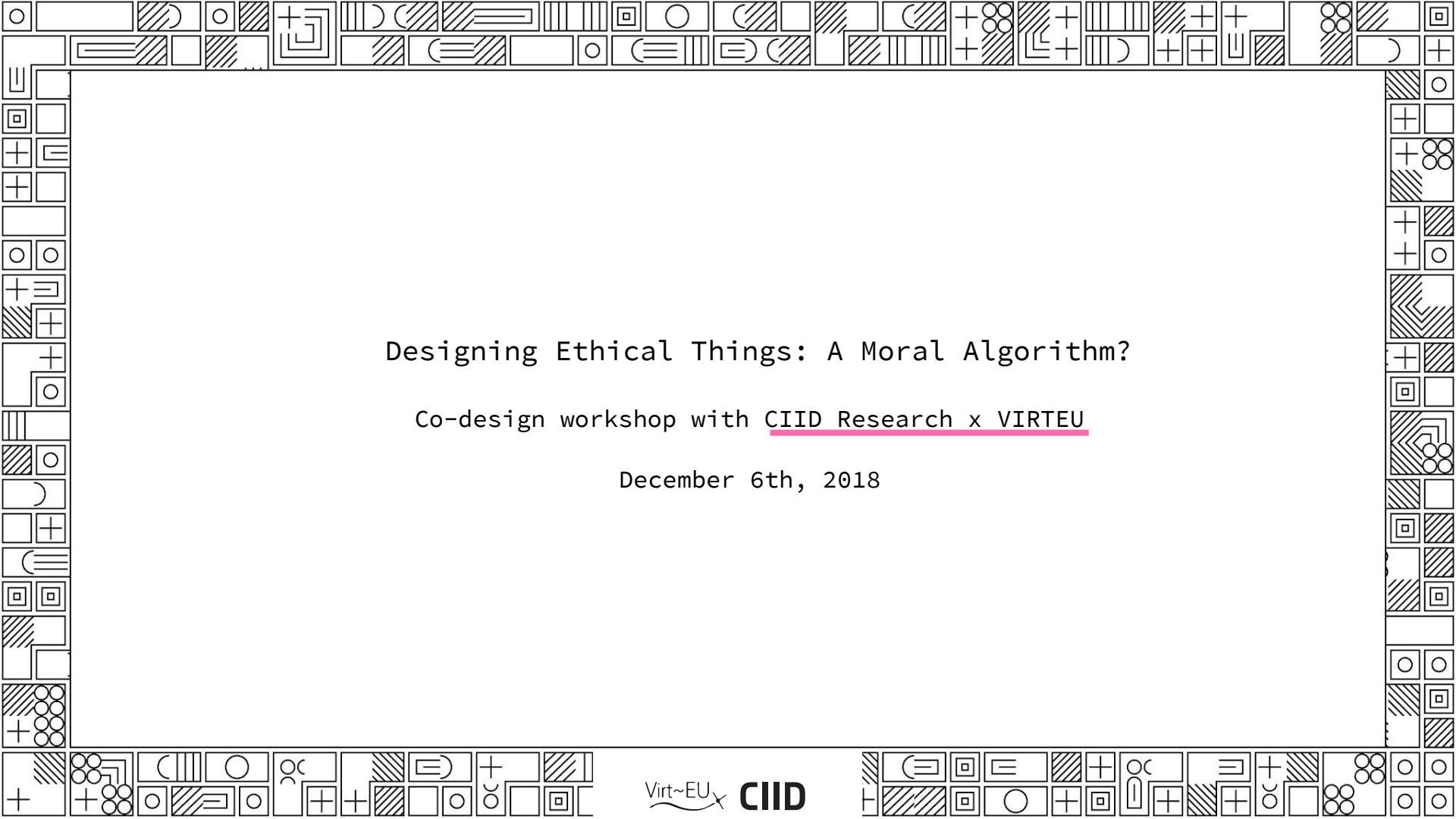
info + consent form
name tag



Let's meet.



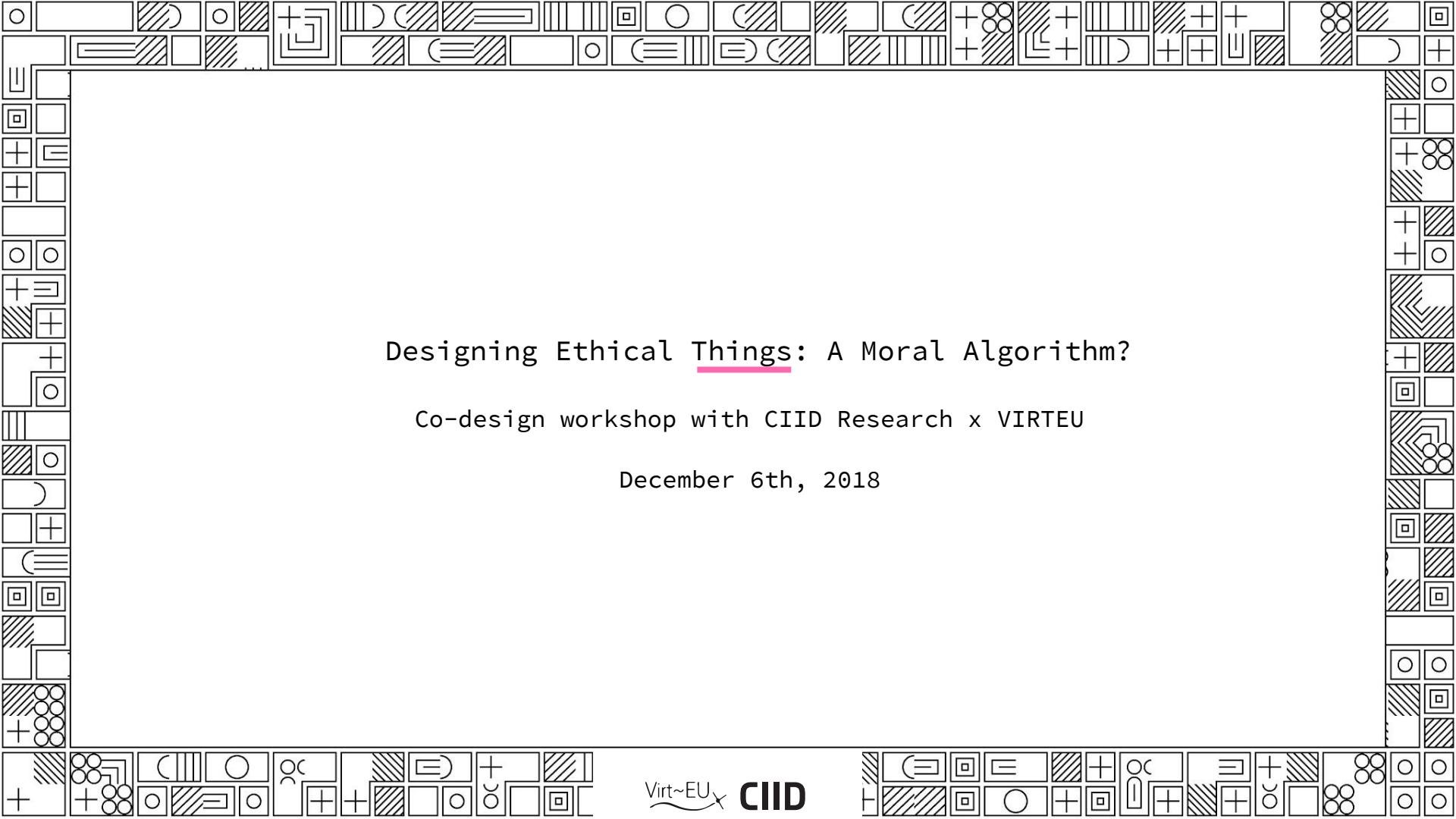
What's this all about?



Designing Ethical Things: A Moral Algorithm?

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December 6th, 2018



Designing Ethical Things: A Moral Algorithm?

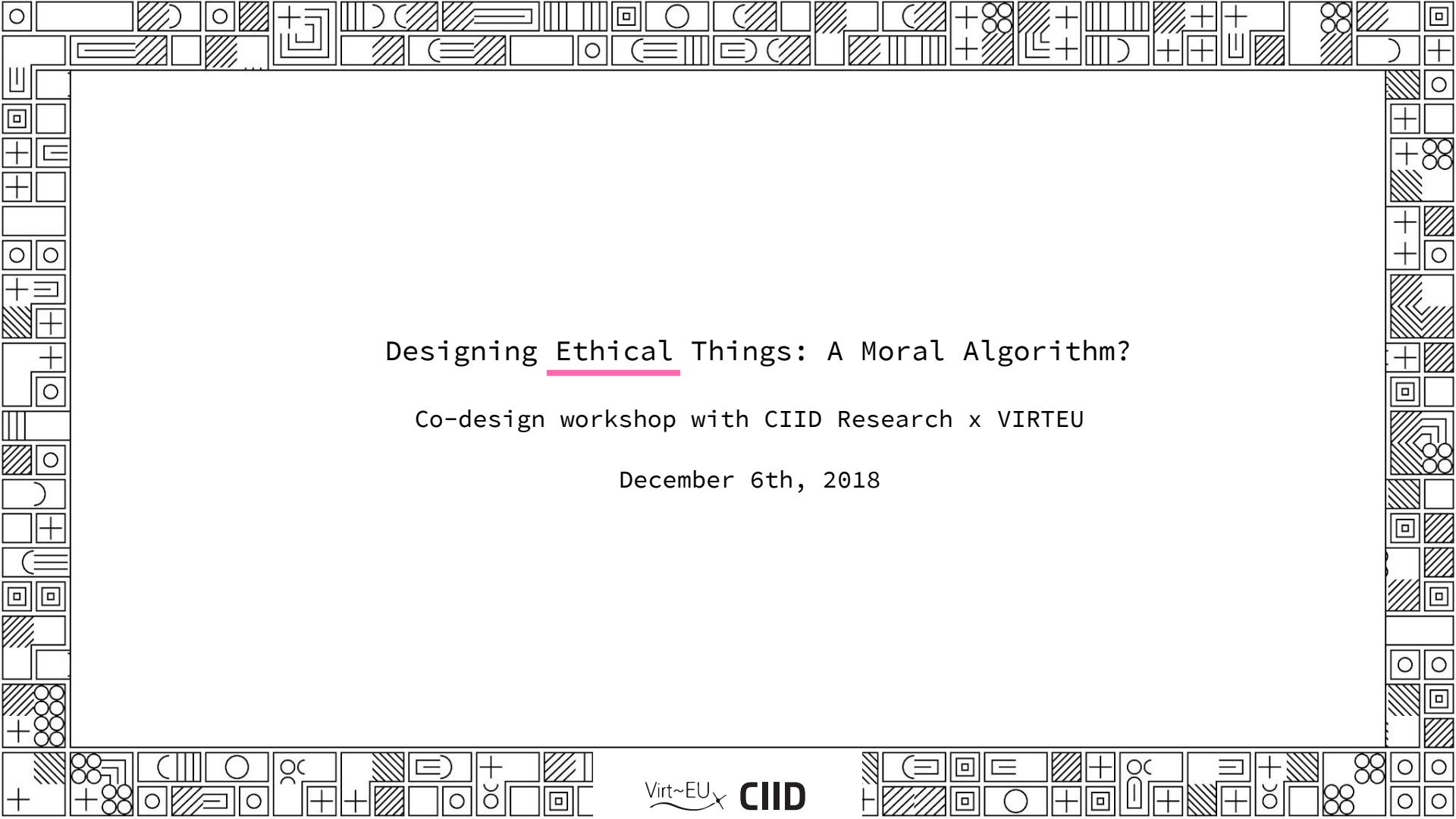
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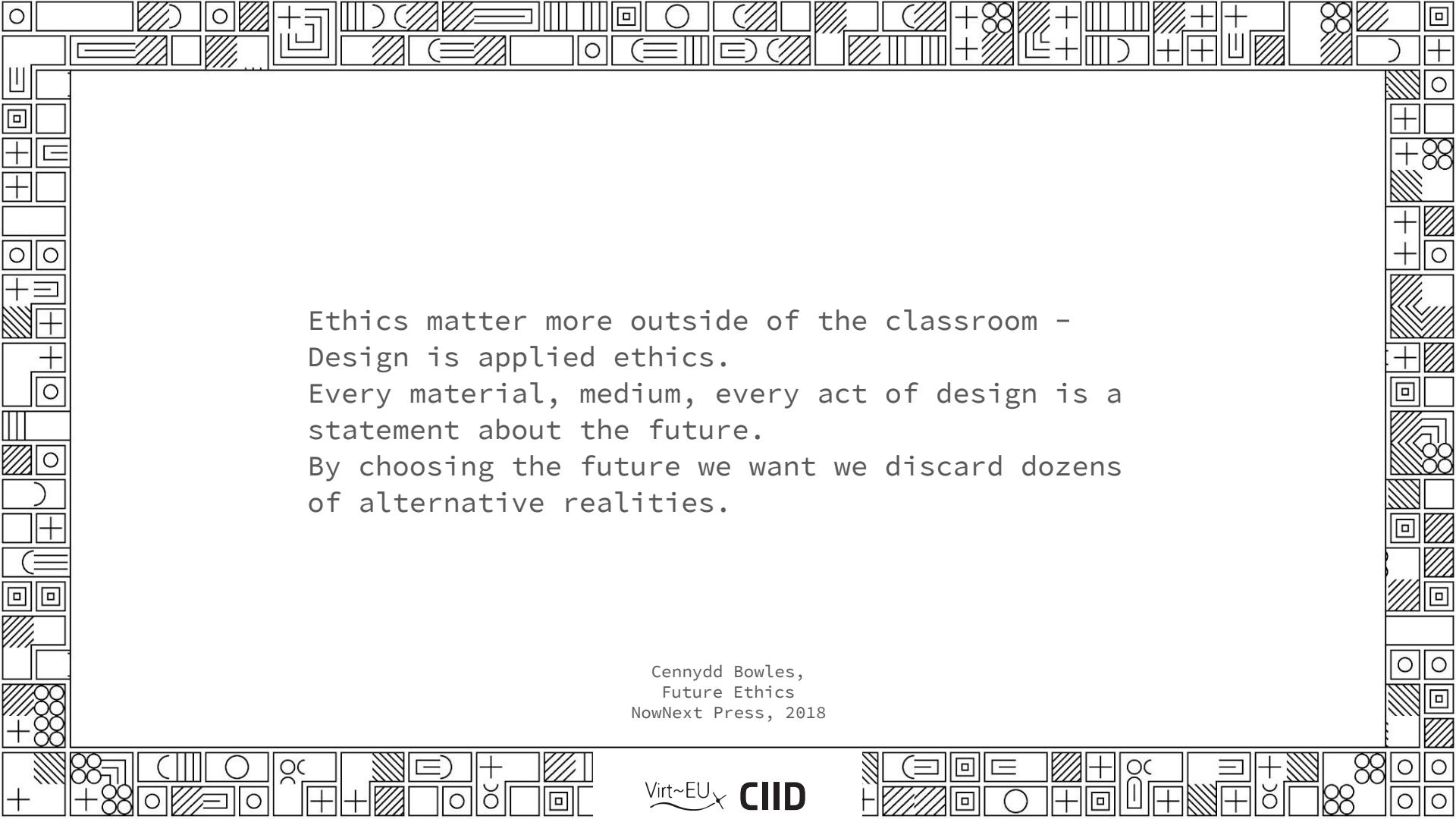
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Ethics matter more outside of the classroom –
Design is applied ethics.
Every material, medium, every act of design is a
statement about the future.
By choosing the future we want we discard dozens
of alternative realities.

Cennydd Bowles,
Future Ethics
NowNext Press, 2018

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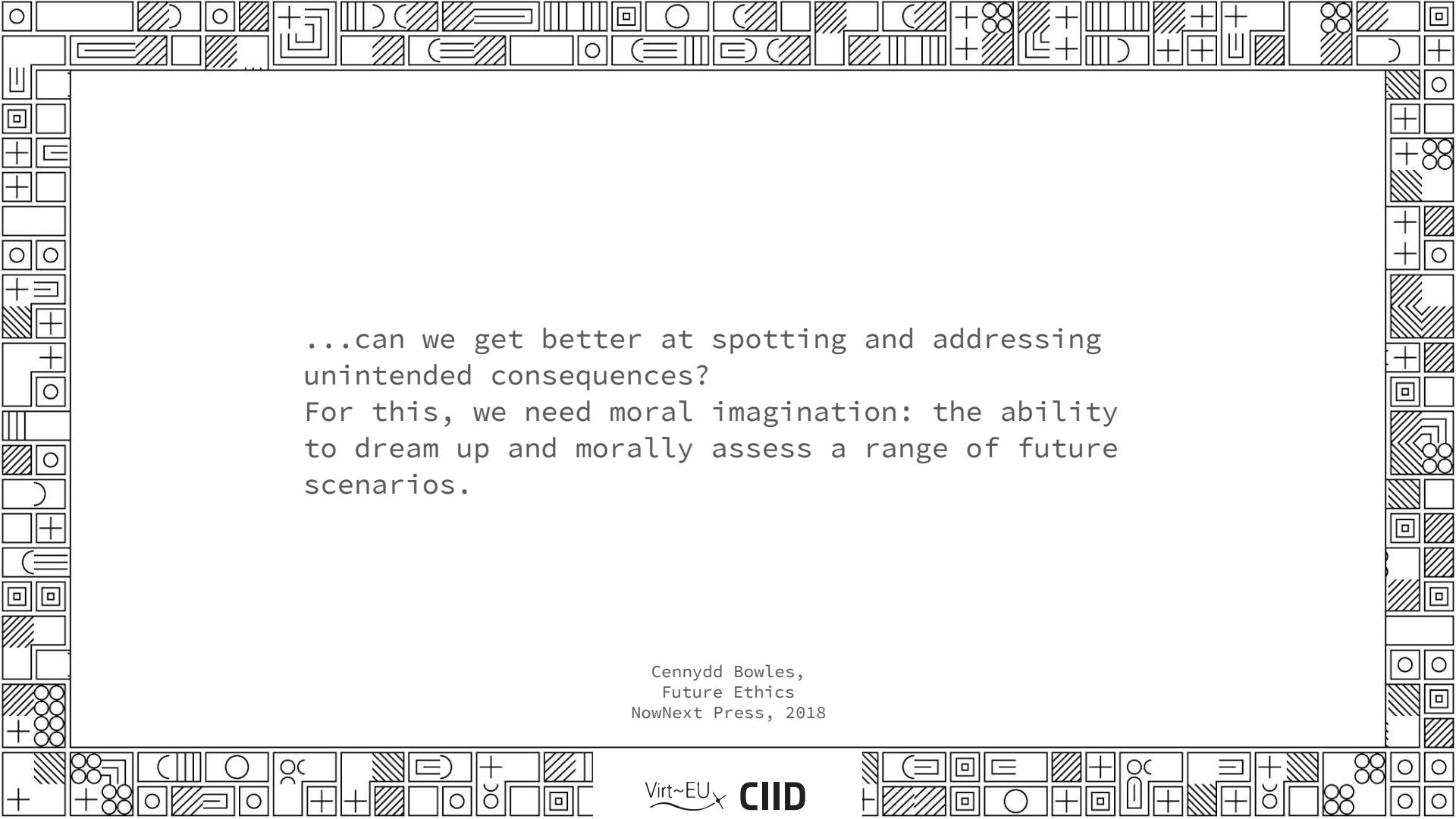
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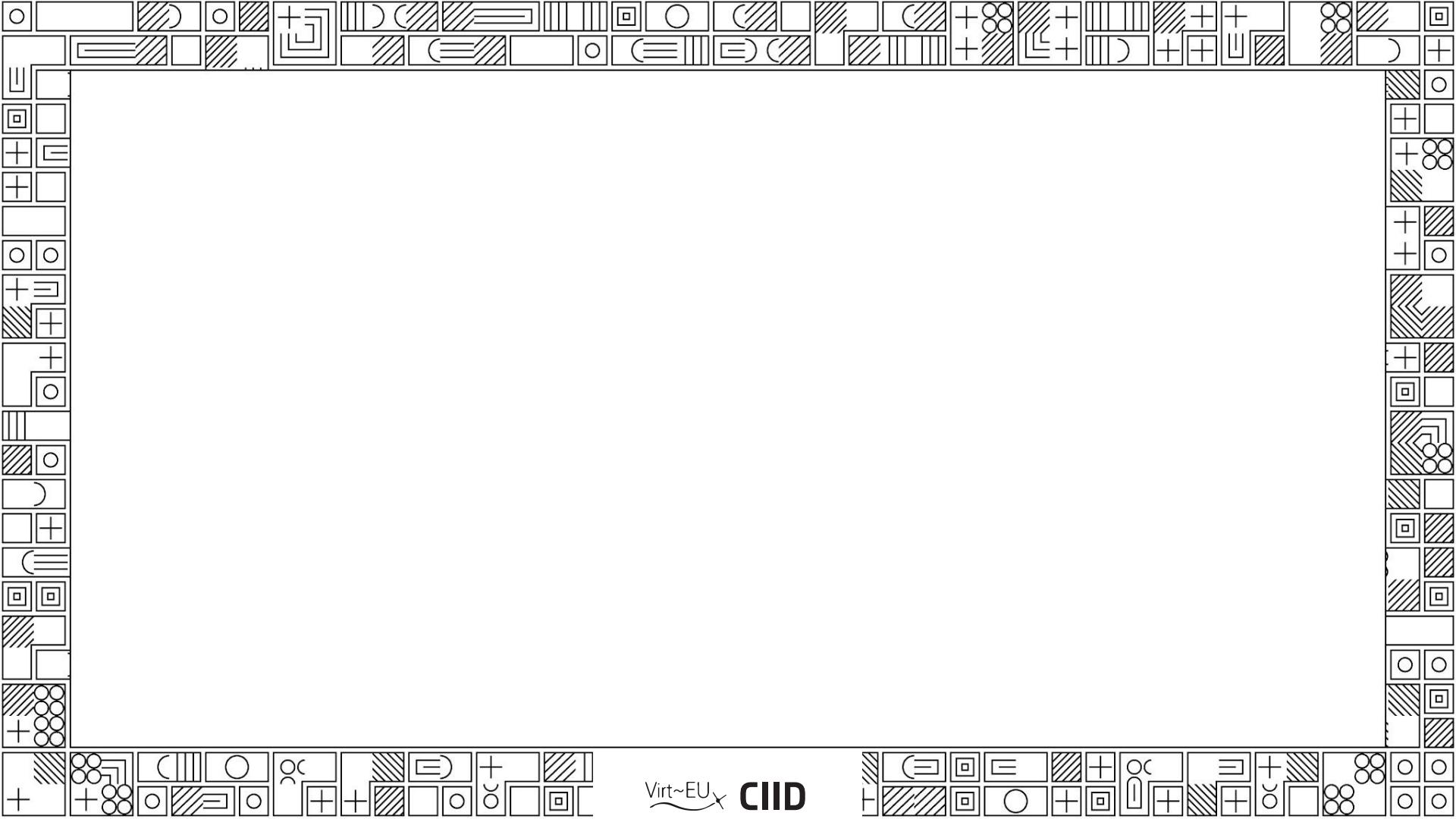
December 6th, 2018



...can we get better at spotting and addressing unintended consequences?

For this, we need moral imagination: the ability to dream up and morally assess a range of future scenarios.

Cennydd Bowles,
Future Ethics
NowNext Press, 2018



GROUND RULES

1. There are no stupid questions
2. I probably don't know the answer
3. All thoughts, additions, suggestions are useful for us. Please put them on post-its: we will gather and share feedback at the end
4. You are each here for a reason - you know it - so share, wonder and open up
5. If you need to go to the bathroom, get water, take a call for work, go for it and no worries!
6. THIS IS A PROTOTYPE

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END

A hammer intends to strike, a vice intends to hold fast, a lever intends to lift. They are what it is made for.

But sometimes a tool may have other uses that you don't know.

Sometimes in doing what you intend, you also do what the knife intends, without knowing.

Can you see the sharpest edge of that knife?

The Amber Spyglass: His Dark Materials
by Philip Pullman

THE COMPANY



The Product

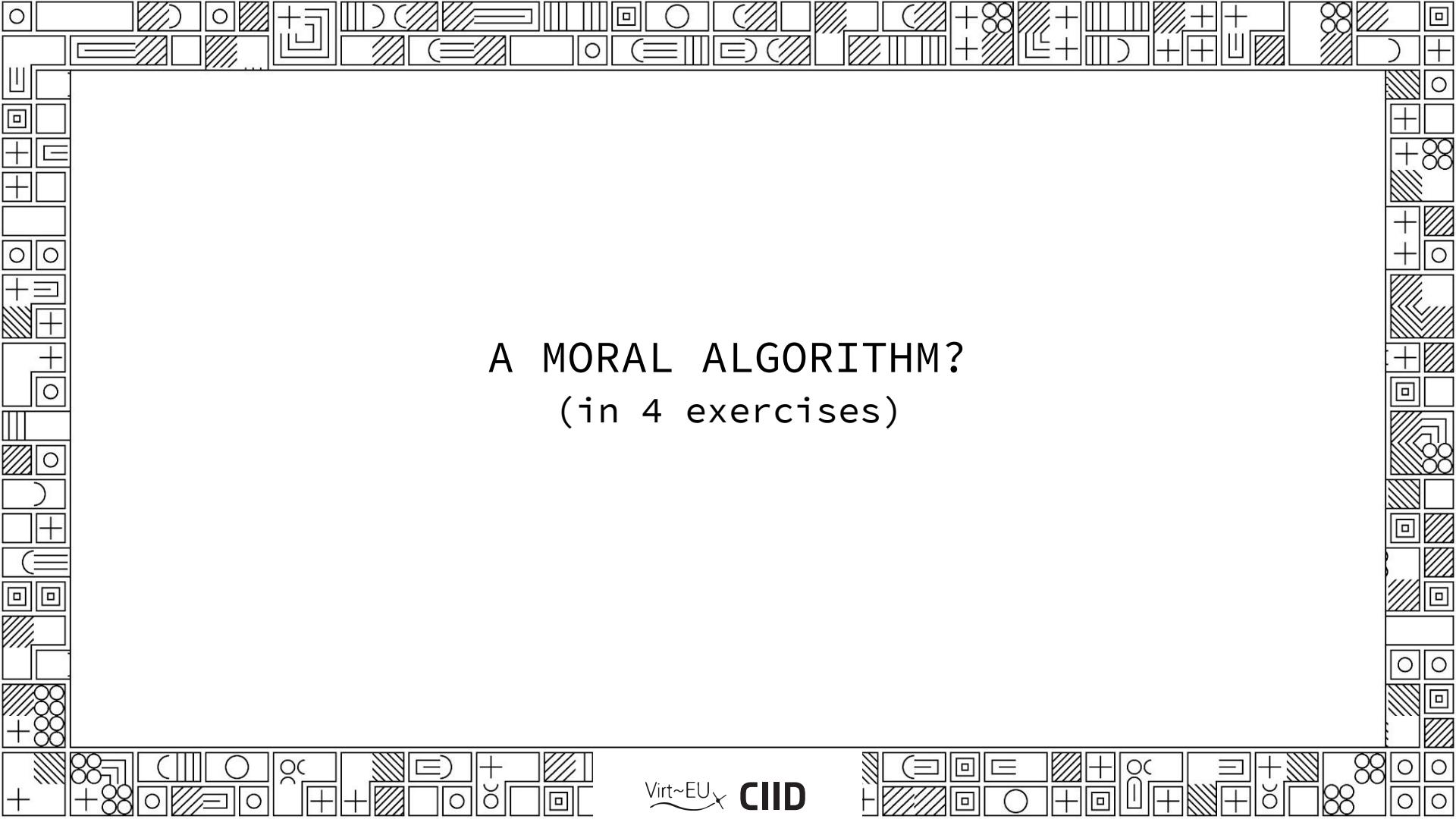
Bear & Co.



Bear & Co, "A message you can hug." It's a special Bear that allows family and friends who are far away from each other to exchange heartfelt voice messages no matter where they are.

Friends of the Bear can record and send messages using the BearApp. Someone at home gets the message on their BearApp, approves it and delivers it wirelessly to the Bear. The Bear's heart will blink when it has a message.

Squeeze the Bear's paw to play the message. Record a message by squeezing the Bear's paw again. The message can be delivered to a BearFriend anywhere in the world! The Bear is friendly and happy in anyone's home - from elderly to the teenagers.



A MORAL ALGORITHM?

(in 4 exercises)

Exercise 1:
Our Values

Exercise 1

Main Goal

Our Values

Take a look at the list below and make sure you understand each value we stand for at Bear & Co.

Useful-first: design useful things for people's lives

Security: keep everything and everyone as secure as possible

Privacy: build and promote a culture of privacy

Data-careful: be deliberate about the data we collect

Transparency: be clear about the 3rd parties associated with the product

Openness and empowerment: users can be masters of their domain

Sustainability: design things as if they will be on earth forever

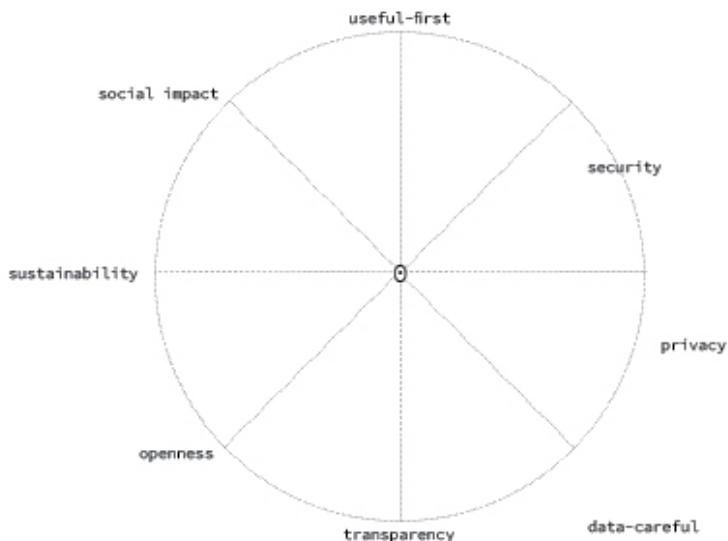
Social impact: help people, societies, communities thrive

STEP 1.

Mark how important each value is to you. The closer to the edge, the more important. The closer to the center, the less important.

STEP 2.

Connect your marks to create the shape of your priorities.



KEY

Center of Ring: The Least Important
Edge of Ring: The Most Important

Exercise 1

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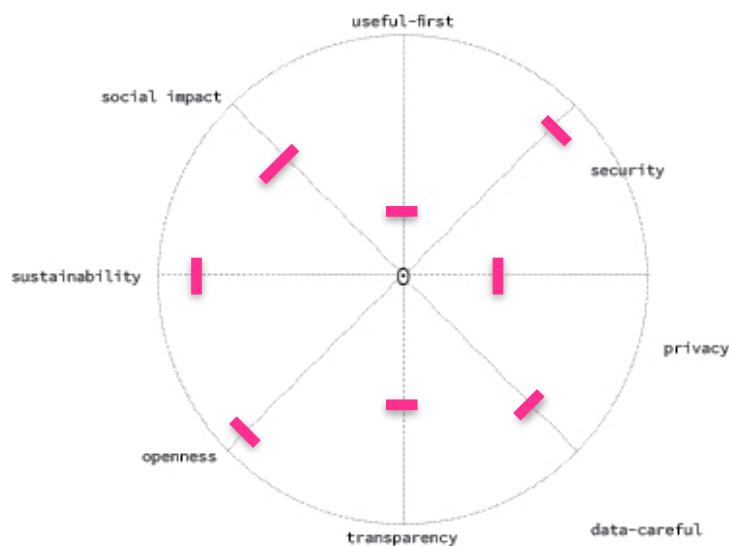
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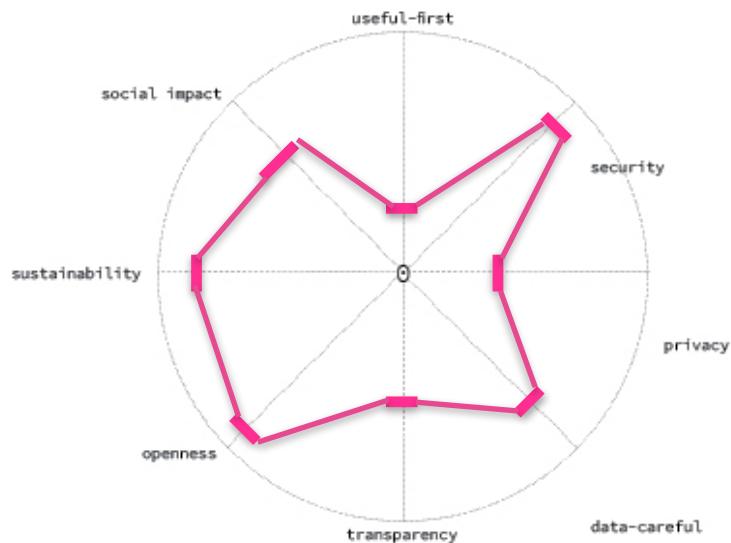
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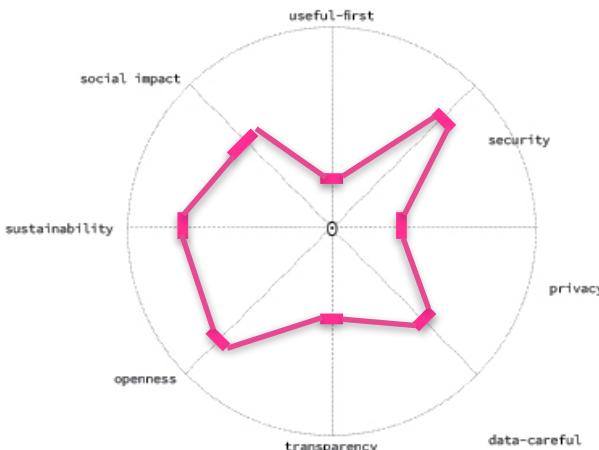
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Multiplier Card

A MORAL ALGORITHM?

Fuzzy to cold numbers

Write a number for how important each value is, based off the ring below.
From 0-1 (e.g. 0.4 or 0.9)

Useful-first 0,_____

Security 0,_____

Privacy 0,_____

Data-careful 0,_____

Transparency 0,_____

Openness 0,_____

Sustainability 0,_____

Social impact 0,_____

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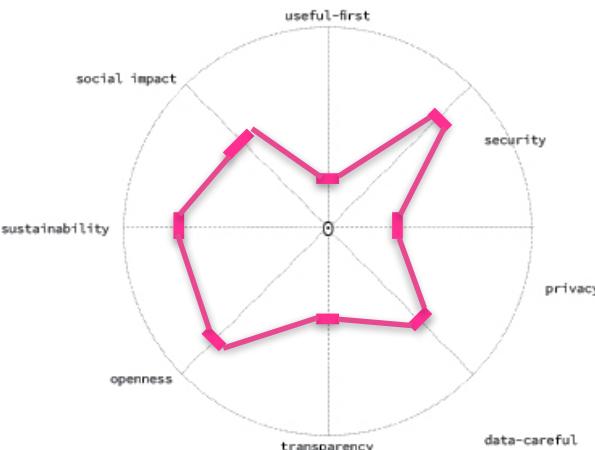
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Fuzzy to cold numbers

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Useful-first 0, 2

Security 0, 8

Privacy 0, 3

Data-careful 0, 6

Transparency 0, 4

Openness 0, 8

Sustainability 0, 7

Social impact 0, 6

SHORT BREAK!

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END

THE PROBLEM

Skype [1]

Annelie \$10.44

Chats Calls Contacts Notifications

RECENT CHATS

- Peter Otto Kuhberg 18.55
no problem
- raphael katz Thu
Call ended - 5m 34s
- Monika Seyfried 20/11/2018
Call ended - 55m 41s
- funda.ustek 12/11/2018
hey funda, any chance yo...
- Javier Ruiz, Ed Johnson... 08/11/2018
Call ended - 1h 29m 56s
- Javier Ruiz 08/11/2018
ok
- Areti Galani 07/11/2018
Should we call you?
- Alison Powell 25/10/2018
Call ended - 16m 34s
- Mohamed, Petra Nieck... 19/10/2018
Call ended - 1h 50m 10s
- Mohamed 19/10/2018
i made a new group with ...
- Petra Nieckchen 19/10/2018
Hi Petra, it's Annelie from...
- Suzannah Eshkolay 18/10/2018

Monika Seyfried

Last seen days ago | Gallery | Find



15.58

skeleton.pdf
1,1 MB

File

Download



16.30

AI for Earth: Helping save the planet with data science - Asia

<https://news.microsoft.com>

16.31
Call ended 55m 41s



Type a message here



Happy or Sad Bears?

Description

The Bear is up and running and the BearApp is solid. We're now adding a new feature to the app where app holders can track the emotional progression of the voice messages. Super exciting new step for Bear & Co. to push into the field of tracking emotional wellness and providing as much

usefulness to our customers as possible. We're deciding whether to do the machine learning on the chip in the Bear itself, or in the cloud. What do you all think?

Option A

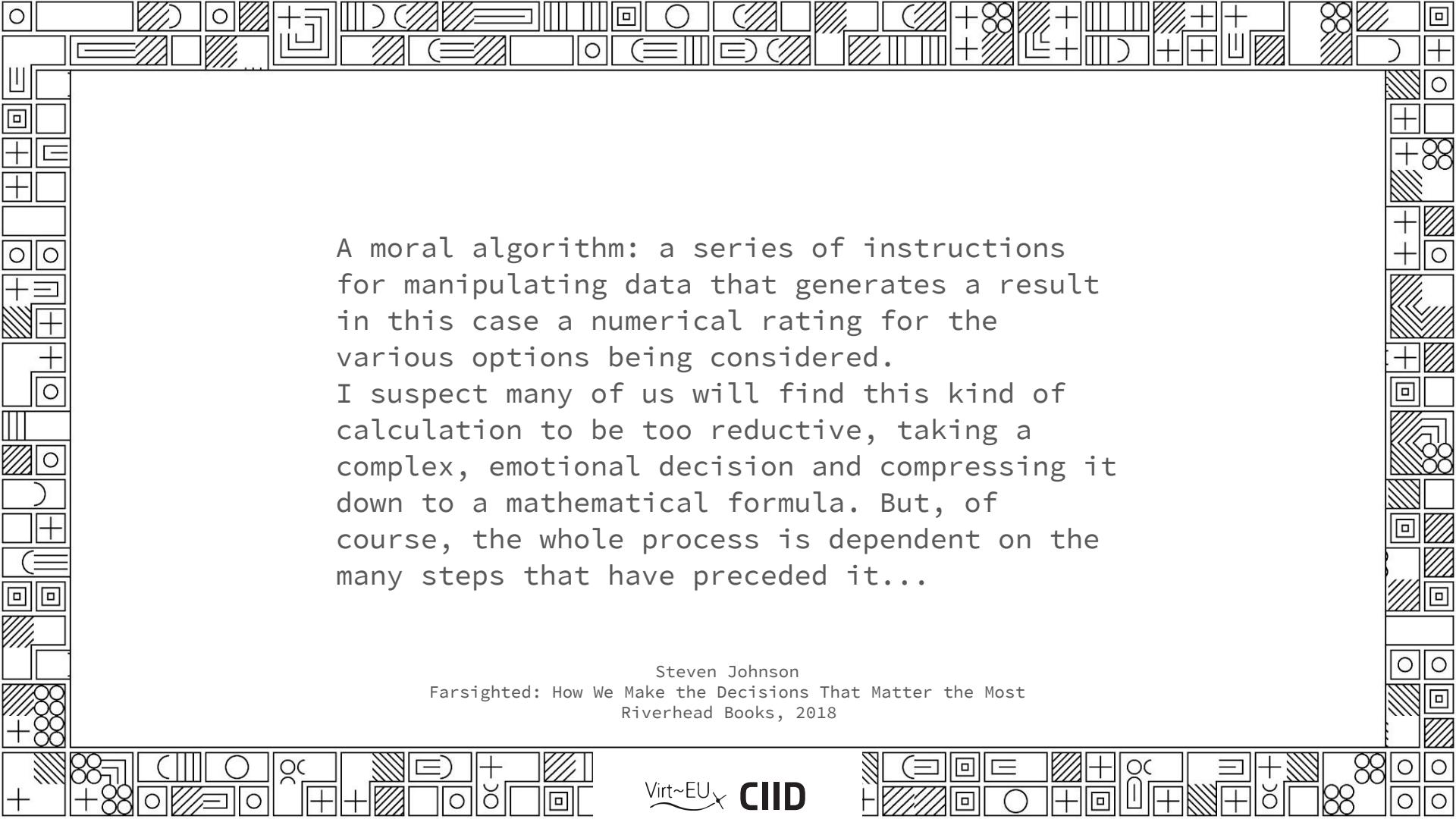
Let's implement the A.I. feature. People are going to love tracking how their communication progresses.

Option B

No way. People can figure out how each other are feeling by just being in better touch.

Discussion Points

Would implementing machine learning make Bear more or less sustainable? Are there under-represented audiences who might be able to communicate better if they had the support of the emotional tracker? Would people be fearful that they were being monitored?

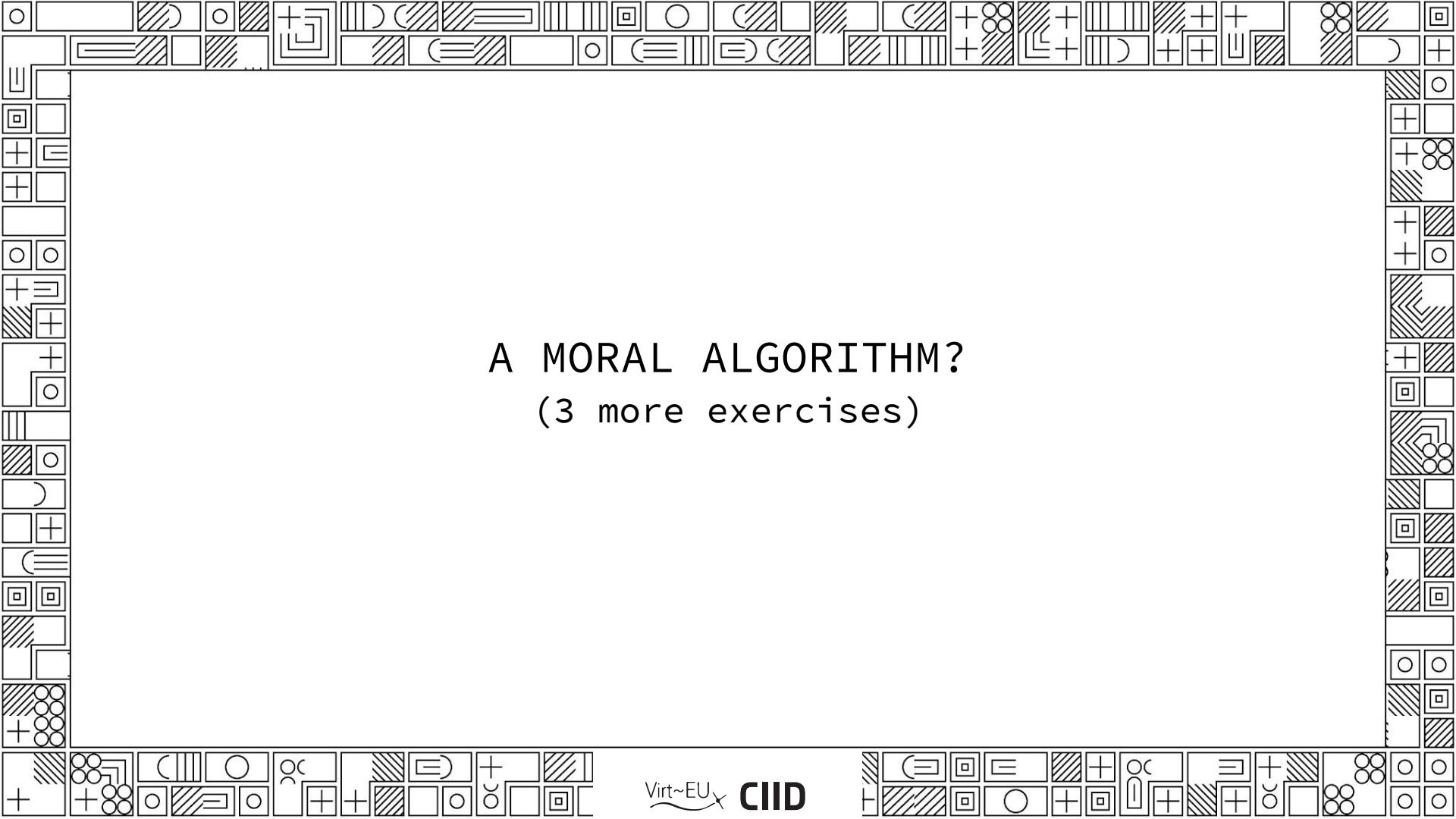


A moral algorithm: a series of instructions for manipulating data that generates a result in this case a numerical rating for the various options being considered.

I suspect many of us will find this kind of calculation to be too reductive, taking a complex, emotional decision and compressing it down to a mathematical formula. But, of course, the whole process is dependent on the many steps that have preceded it...

Steven Johnson

Farsighted: How We Make the Decisions That Matter the Most
Riverhead Books, 2018



A MORAL ALGORITHM?

(3 more exercises)

Exercise 2:

If everyone in the world...

Main Goal

If everyone in the world...

If everyone in the world had your product, and you chose this option, what are the good, weird and bad things that could happen?

STEP 1.
Write the option you are considering.
Start with discussing a scenario for how this could go well...

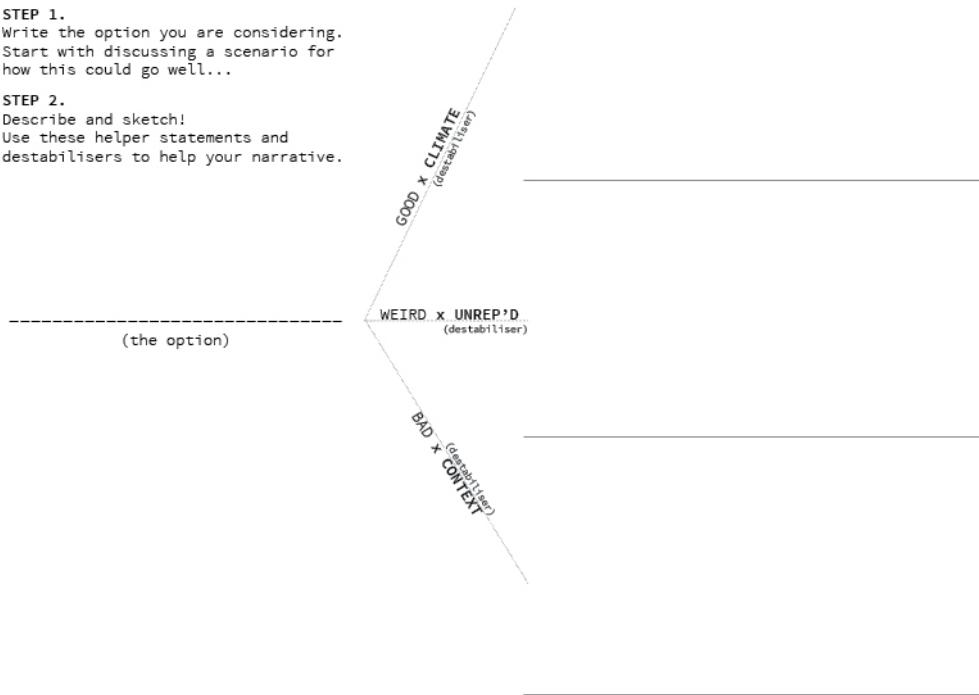
STEP 2.
Describe and sketch!
Use these helper statements and destabilisers to help your narrative.

Describe the scenario _____

Key Actions

Engage your moral imagination and discover unexpected outcomes of taking this option

Sketch a moment in the scenario



Destabilising Factors

climate

- Natural disasters
- Electricity outages
- Increased pressure to be as sustainable as possible
- -----

Destabilising Factors

Under-rep'd

- Who do you least expect to use your product?
- To whom do you NOT plan to market your product?
- -----

Destabilising Factors

Context

- Where do you least expect your product to find a home?
- What situations - cultural, social, political - might occur around your product?
- -----

Destabilising Factors

Technology

- Artificial intelligence
- Face recognition
- Speech recognition
- Blockchain
- -----

Main Goal

If everyone in the world...

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STEP 1.
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implement a.i.
(the option)



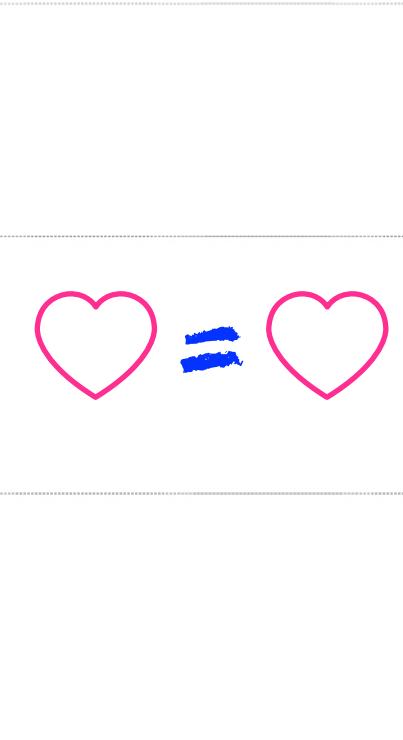
Describe the scenario

In a world where all bears have A.I. and children use bears to send love, an A.I. owned by Bear & Co. will become the sole definition of what it means to express family love. As the A.I. learns about more and more families, it starts to suggest sentences for the children and parents to say to each other based on their location's most typical sexuality. However...

Key Actions

Engage your moral imagination and discover unexpected outcomes of taking this option

Sketch a moment in the scenario



Main Goal

Key Actions

If everyone in the world...

Engage your moral imagination and discover unexpected outcomes of taking this option

If everyone in the world had your product, and you chose what are the good, weird things that could happen?

STEP 1.
Write the option you are Start with discussing a how this could go well.

STEP 2.
Describe and sketch! Use these helper statements destabilisers to help you!

implement
(the option)

Rating Card	Describe the scenario		Sketches - imagine the scenario
	Option A rating	Option B rating	
Useful-first			
Security			
Privacy			
Data-careful			
Transparency			
Openness			
Sustainability			
Social impact			



Main Goal

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implement
(the option)

Rating Card	Describe the scenario		Sketches - imagine the scenario
	Option A rating	Option B rating	
Useful-first	20	80	
Security	30	90	
Privacy	30		
Data-careful	30		
Transparency	40		
Openness	40		
Sustainability	50		
Social impact	40		



Exercise 3:

Algorithmic Feelings

Main Goal

Algorithmic Feelings

STEP 1.

Check back to your multiplier card. Write the cold numbers in the "multiplier" column.

STEP 2.

Check back to your rating card. Write the ratings you came up with for in their respective columns - Option A, rating column and Option B, rating column.

STEP 3.

Now multiply the multiplier with each rating, for each column, to create the respective weighted ratings.

STEP 4.

Add each weighted rate to sum the column.

STEP 5.

The column with the most points is the option is in best alignment with your values and priorities.

STEP 6.

Take your pulse:
How do you feel about this?

STEP 7.

Look back at your multipliers and ratings. Highlight the highest + lowest.
What would need to change in order for the other option to be better aligned? Or do you need to create another option altogether?

Key Actions

Translate your understanding of these options from rich insights to cold numbers

		values	multiplier	rating	weighted rating	Option A	Option B
Useful-first :							
Security :							
Privacy :							
Data-careful :							
Transparency :							
Openness :							
Sustainability :							
Social impact :							
						SUM	SUM

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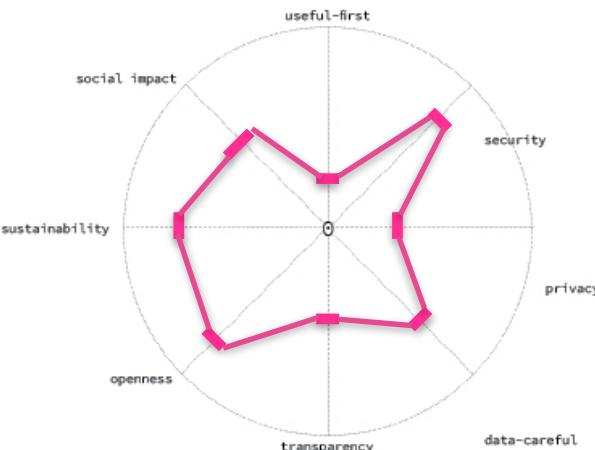
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		Option A	Option B
values	multiplier	rating	weighted rating
Useful-first :	0,2		
Security :	0,8		
Privacy :	0,3		
Data-careful :	0,6		
Transparency :	0,4		
Openness :	0,8		
Sustainability :	0,7		
Social impact :	0,6		
		SUM	SUM

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		Option A	Option B
values	multiplier	rating	weighted rating
Useful-first :	0,2		
Security :	0,8		
Privacy :	0,3		
Data-careful :	0,6		
Transparency :	0,4		
Openness :	0,8		
Sustainability :	0,7		
Social impact :	0,6		
		SUM	SUM

Rating Card		A MORAL ALGORITHM?	
		Option A rating	Option B rating
STEP 3. Based on what you imagined in your scenarios, rate each option based on how well it fits your values on a scale from 0 - 100. You have 100 points in total to spread.			
Useful-first		20	80
Security		30	90
Privacy		30	70
Data-careful		30	70
Transparency		40	60
Openness		40	30
Sustainability		50	30
Social impact		40	30

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Security :	0,8		30			90
Privacy :	0,3		30			70
Data-careful :	0,6		30			70
Transparency :	0,4		40			60
Openness :	0,8		40			30
Sustainability :	0,7		50			30
Social impact :	0,6		40			30
				SUM		SUM

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	values	multiplier	Option A		Option B	
			rating	weighted rating	rating	weighted rating
Useful-first :	0,2		20	4	80	16
Security :	0,8		30	24	90	72
Privacy :	0,3		30	9	70	21
Data-careful :	0,6		30	18	70	42
Transparency :	0,4		40	16	60	24
Openness :	0,8		40	32	30	24
Sustainability :	0,7		50	35	30	21
Social impact :	0,6		40	24	30	18
			SUM		SUM	

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What would need to change in order for the other option to be better aligned? Or do you need to create another option altogether?

Key Actions

Translate your understanding of these options from rich insights to cold numbers

	values	multiplier	Option A		Option B	
			rating	weighted rating	rating	weighted rating
Useful-first :	0,2		20	4	80	16
Security :	0,8		30	24	90	72
Privacy :	0,3		30	9	70	21
Data-careful :	0,6		30	18	70	42
Transparency :	0,4		40	16	60	24
Openness :	0,8		40	32	30	24
Sustainability :	0,7		50	35	30	21
Social impact :	0,6		40	24	30	18
			SUM	162	SUM	238

Main Goal

Algorithmic Feelings

STEP 1.

Check back to your multiplier card. Write the cold numbers in the "multiplier" column.

STEP 2.

Check back to your rating card. Write the ratings you came up with for in their respective columns - Option A, rating column and Option B, rating column.

STEP 3.

Now multiply the multiplier with each rating, for each column, to create the respective weighted ratings.

STEP 4.

Add each weighted rate to sum the column.

STEP 5.

The column with the most points is the option is in best alignment with your values and priorities.

STEP 6.

Take your pulse:
How do you feel about this?

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			SUM 162		SUM 18	

Exercise 4:
The Newspaper Article

THE DAILY

December 6th, 2018
Rotterdam, NE

Bear & Co. _____?

It all started with a great idea. A cuddly, fuzzy stuffed animal that anyone could use to send voice messages to each other. Then things got a little complicated.

An insider at the Bear & Co. team in Rotterdam told us that they were considering some difficult decisions as they worked on the cuddly Bear. They had to choose

—
—

Apparently, they explored both options by using a special foresight tool - similar to "Moral Imagination". Our source told us that the team imagined that everyone in the world had the Bear, and they got _____ when they considered the _____ outcomes.

Some of their scenarios even showed futures where

They literally weighed their options and tried to create some sort of a balancing act between their values and the decision at hand. It was _____ work and a _____ experience for the team. All of the energy and focus on this decision ended up in a _____ choice where the team decided to

----- . The decision
----- their values of

Over here in The Daily newsroom, we're _____ by their commitment to figuring out the _____ situation. Watch this space, we'll be keeping an eye on Bear & Co. and all of their _____ friends!

Get six of our favorite The Daily stories every day by signing up for our newsletter!

THE DAILY

December 6th, 2018
Rotterdam, NE

Bear & Co. _____?

It all started with a great idea. A cuddly, fuzzy stuffed animal that anyone could use to send voice messages to each other. Then things got a little complicated.

An insider at the Bear & Co. team in Rotterdam told us that they were considering some difficult decisions as they worked on the cuddly Bear. They had to choose _____

'whether to do this or that' _____
_____.

Apparently, they explored both options by using a special foresight tool - similar to "Moral Imagination". Our source told us that the team imagined that everyone in the world had the Bear, and they got worried when they considered the weird outcomes.

Some of their scenarios even showed futures where _____ children's perception of love became manipulated by bear _____

_____.

They literally weighed their options and tried to create some sort of a balancing act between their values and the decision at hand. It was fun work and a mind-bending experience for the team. All of the energy and focus on the easy decision ended up in a choice where the team decided to not use a.i.

_____. The decision questioned their values of social impact, which became a much more controversial thing than they realised

Over here in The Daily newsroom, we're impressed by their commitment to figuring out the sticky situation. Watch this space, we'll be keeping an eye on Bear & Co. and all of their kind-hearted friends!

Get six of our favorite The Daily stories every day by signing up for our newsletter!



Share your newspaper articles

Agenda

ARRIVAL

Name tags, consent forms

OVERVIEW + INTRODUCTIONS

Internet of Things, Ethics

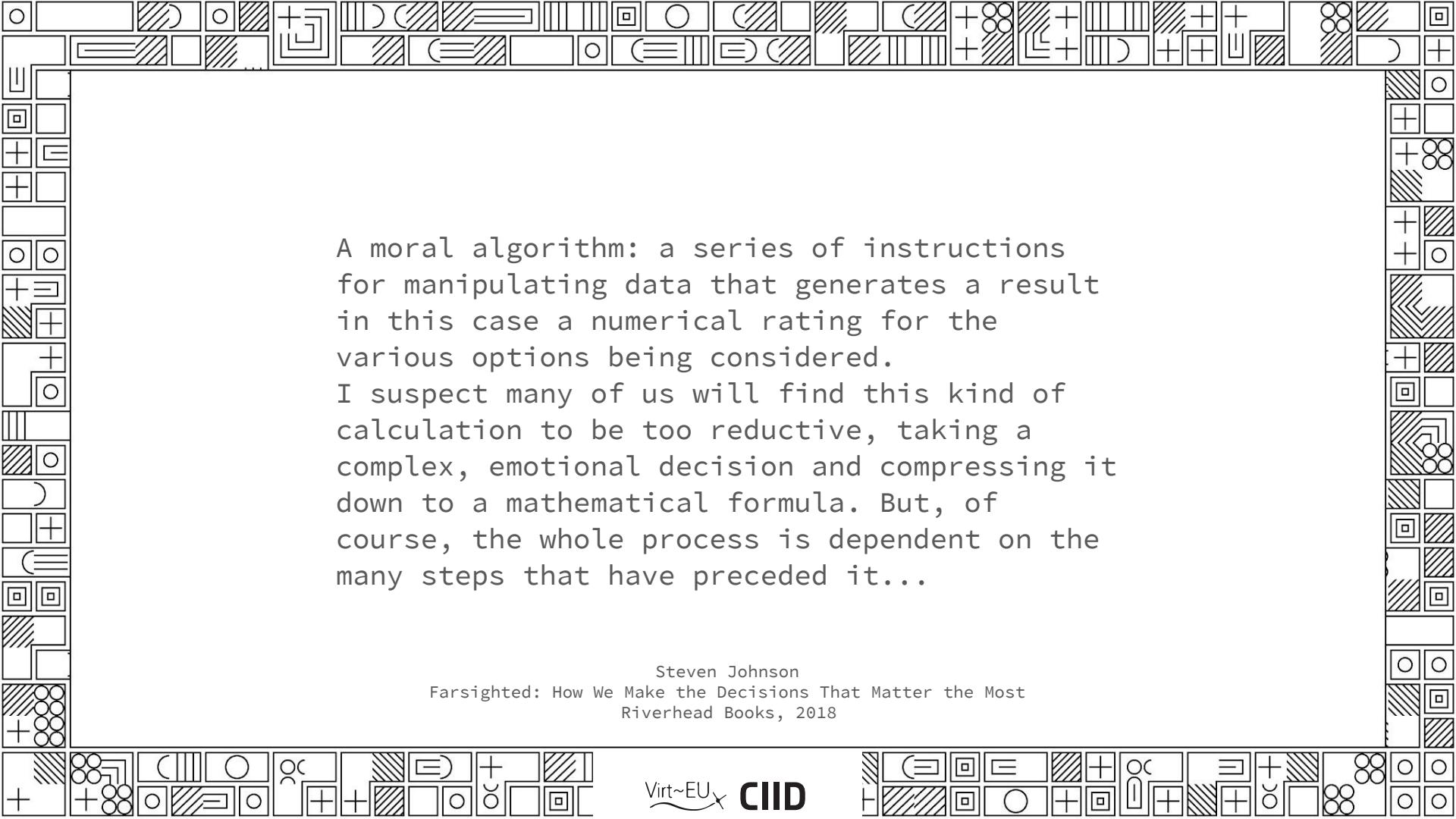
Our company + Values

--short break--

Our company's problem of the day
A Moral Algorithm?

Feedback and Brainstorm

END



A moral algorithm: a series of instructions for manipulating data that generates a result in this case a numerical rating for the various options being considered.

I suspect many of us will find this kind of calculation to be too reductive, taking a complex, emotional decision and compressing it down to a mathematical formula. But, of course, the whole process is dependent on the many steps that have preceded it...

Steven Johnson

Farsighted: How We Make the Decisions That Matter the Most
Riverhead Books, 2018

FEEDBACK + BRAINSTORM



A MORAL ALGORITHM?

in 4 exercises

Exercise 1
Main Goal
Our Values

Take a look at the list below and make sure you understand each value we stand for at Bear & Co.

Useful-West: design useful things for people and the planet
Security: keep everything and everyone as secure as possible
Privacy: build and promote a culture of privacy
Data-careful: be deliberate about the data we collect and how we use it
Transparency: be clear about the 3rd parties involved in our products and services
Openness and empowerment: users can be masters of their domain
Sustainability: consider the things as if they will be on earth forever
Social Impact: help people, societies, communities thrive

STEP 1. Rank the values from most important to you to least important. The closer to the center, the more important it is.
STEP 2. Use the points to create the shape of your priorities.

MULTIPLIER CARD A MORAL ALGORITHM

Fuzzy to cold numbers

Write a number for how important each value is, based off the rating below. From 0-1 (e.g. 0.4 or 0.6).

Value	Rating	Weighted Rating
useful-first	—	—
Security	—	—
Privacy	—	—
Data-careful	—	—
Transparency	—	—
Openness	—	—
Sustainability	—	—
Social Impact	—	—

VALUES

Exercise 2
Main Goal
If everyone in the world...

If everyone in the world had your product and service, what would that be like? What are the good, weird and bad things about that?

STEP 1. Write the option you are considering. Start with discussing a scenario for how things could go...

STEP 2. Sketch the scenario. Use these helper statements and descriptions to help your narrative.

Gloss + Complexity
HCDR x IMPACT (desirability)

In a world where all bears have A.I.

IF EVERYONE IN THE WORLD...

Exercise 3
Main Goal
Algorithmic Feelings

STEP 1. Check back to your multiplier card. Write the numbers in the "multiplier" column.

STEP 2. Check back to your rating card. Write the ratings you came up with for Option A, Option B, Option C, Option D, Rating column and Option E, Rating column.

STEP 3. Now multiply the multiplier with each rating. This will allow you to create the respective weighted ratings.

STEP 4. Add each weighted rate to sum the columns.

STEP 5. The column with the most points is the option to be developed with your values and priorities.

STEP 6. Take your pulse: How do you feel about this?

STEP 7. Look at your multipliers and ratings. Highlight the highest & lowest values. Ask yourself: what needs to change? For the others, do you feel better aligned? Or do you need to create another option altogether?

Key Actions
Translate your understanding of these options from rich insights to cold numbers

	values	multiplier	Option A	Option B
useful-first :	—	—	rating	weighted rating
Security :	—	—	—	—
Privacy :	—	—	—	—
Data-careful :	—	—	—	—
Transparency :	—	—	—	—
Openness :	—	—	—	—
Sustainability :	—	—	—	—
Social Impact :	—	—	—	—
			SUM	

ALGORITHMIC FEELINGS

Exercise 4
Main Goal
The Daily A MORAL ALGORITHM

December 4th, 2018
Kersten, NC

Bear & Co. _____?

It all started with a great idea: A cuddly, fuzzy stuffed animal that anyone could use to send secret messages to each other. Then things got a little complicated.

An insulation at the Bear & Co. team in Kersten told us that they were considering some difficult decisions as they worked on the cuddly bear. They had to choose _____.

They literally weighed their options and tried to create some sort of a balancing act between their values and the decision at hand. It was _____ work and _____ effort for the team. All of the energy and focus on the decision ended up in a _____ choice where the team decided _____.

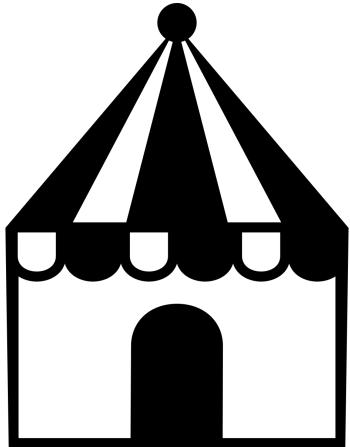
Apparently, they explored both options by using a special forecasting tool - similar to Moritz's. The team _____ told us that the team imagined that everyone in the world had the bear, and they got _____ when they considered the _____ outcomes.

Some of their scenarios even showed futures where _____ children's _____.

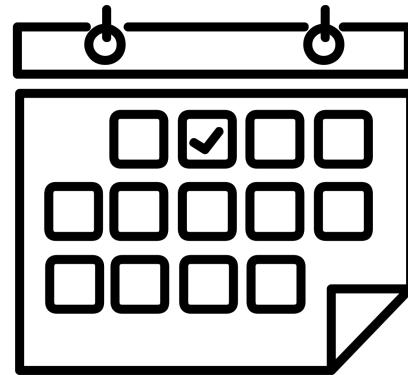
Over here in The Daily newspaper, we're _____ by their commitment to figuring out the right decision. Watch this space, we'll be keeping an eye on Bear & Co. and all of their _____ friends!

On top of our favorite bear stories every day by signing up for our newsletter!

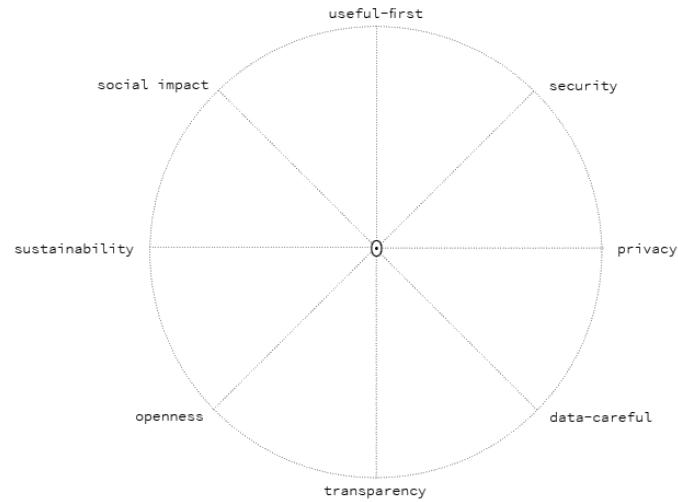
THE NEWSPAPER



How might we package this experience in different ways?



When and where might this be useful in the work of IOT design + development?



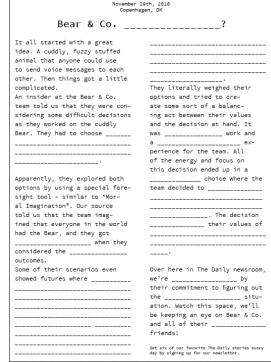
VALUES

<p>If everyone in the world had your product, and you chose this option, what are the good, weird and bad things that could happen?</p> <p>STEP 1. Check out the destabilising factors to trigger your stories. Note any that you use.</p> <p>STEP 2. Describe and sketch!</p> <p>(the option)</p>	<p>Describe the scenario</p> <hr/> <hr/> <hr/>	<p>Sketch a moment in the scenario</p> <hr/> <hr/> <hr/>
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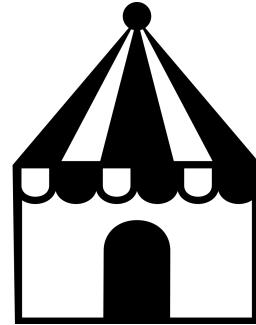
IF EVERYONE IN THE WORLD...

values	multiplier	Option A		Option B	
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Transparency :					
Openness :					
Sustainability :					
Social impact :					
		SUM		SUM	

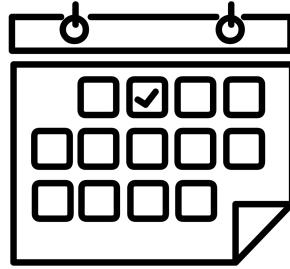
ALGORITHMIC FEELINGS



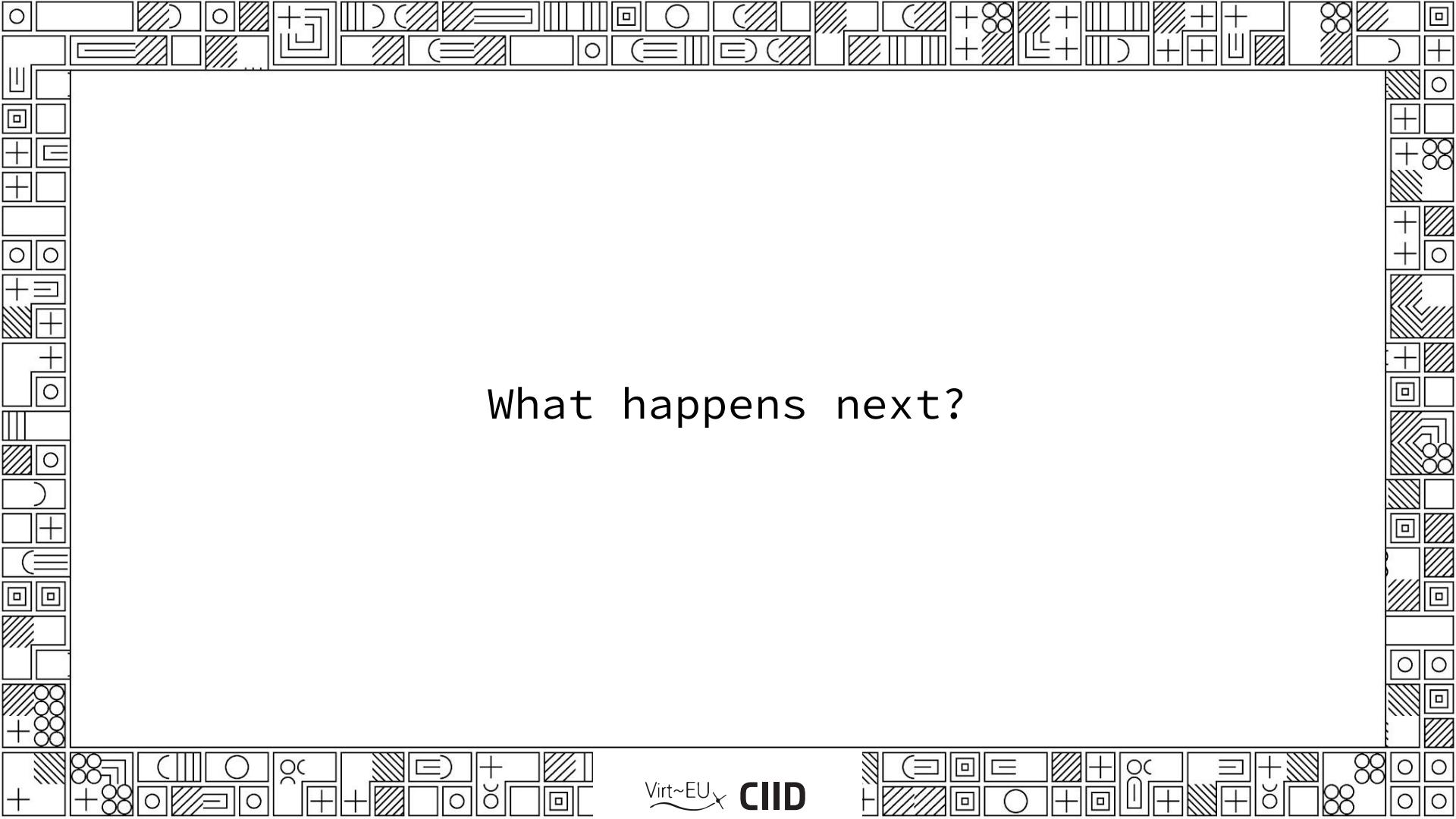
THE NEWSPAPER



How might we package this
experience in different ways?



When and where might this be
useful in the work of IoT design
+ development?



What happens next?

a.berner@ciid.dk