



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?

Co-design workshop with CIID Research x VIRTEU

December 6th, 2018

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Designing Ethical Things: A Moral Algorithm?

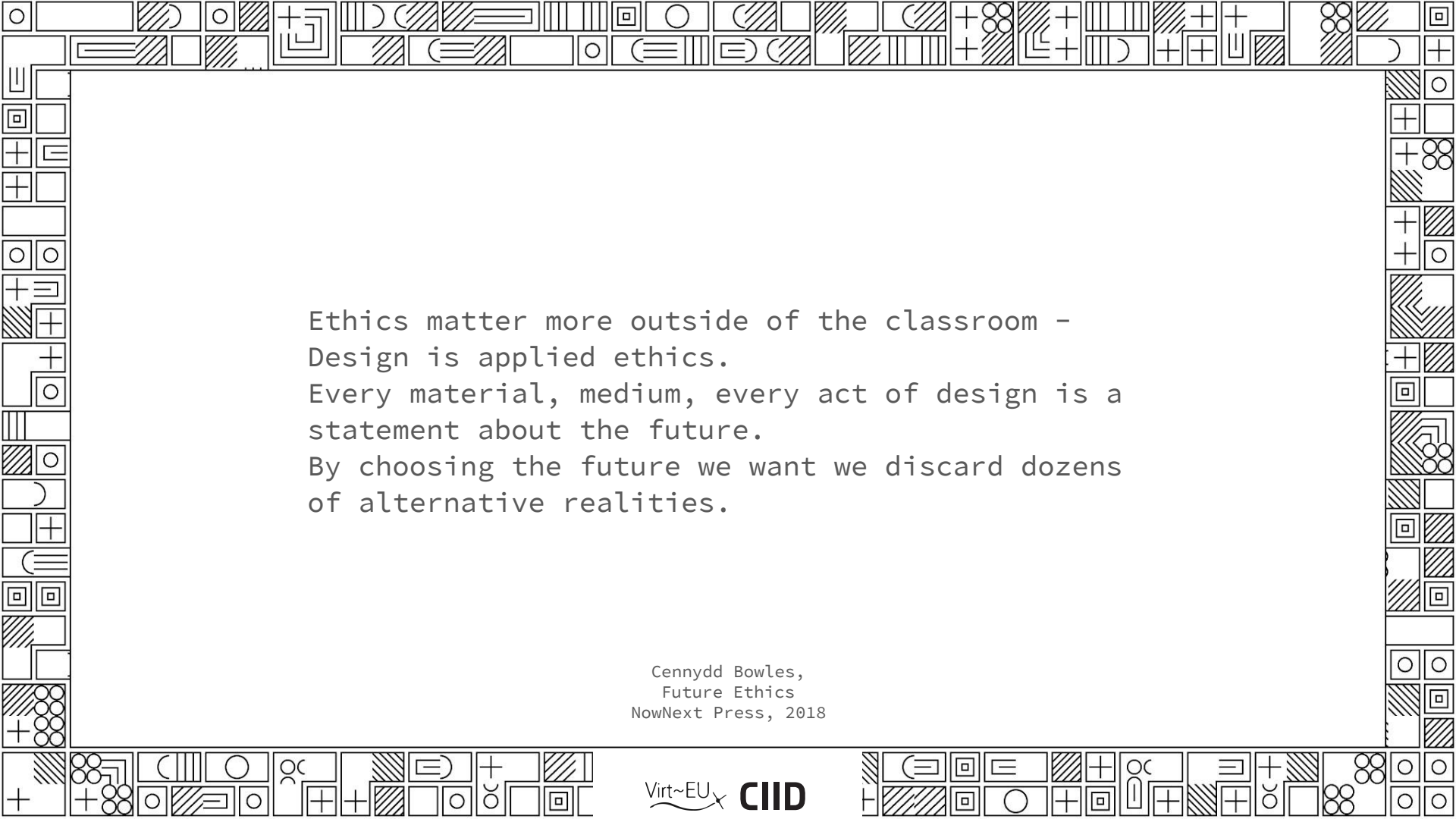
Co-design workshop with CIID Research x VIRTEU

December 6th, 2018

Designing Ethical Things: A Moral Algorithm?

Co-design workshop with CIID Research x VIRTEU

December 6th, 2018

A decorative border composed of various geometric shapes, lines, and patterns, including squares, circles, and rectangles, some filled with diagonal lines or dots, surrounding the central text area.

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

Designing Ethical Things: A Moral Algorithm?

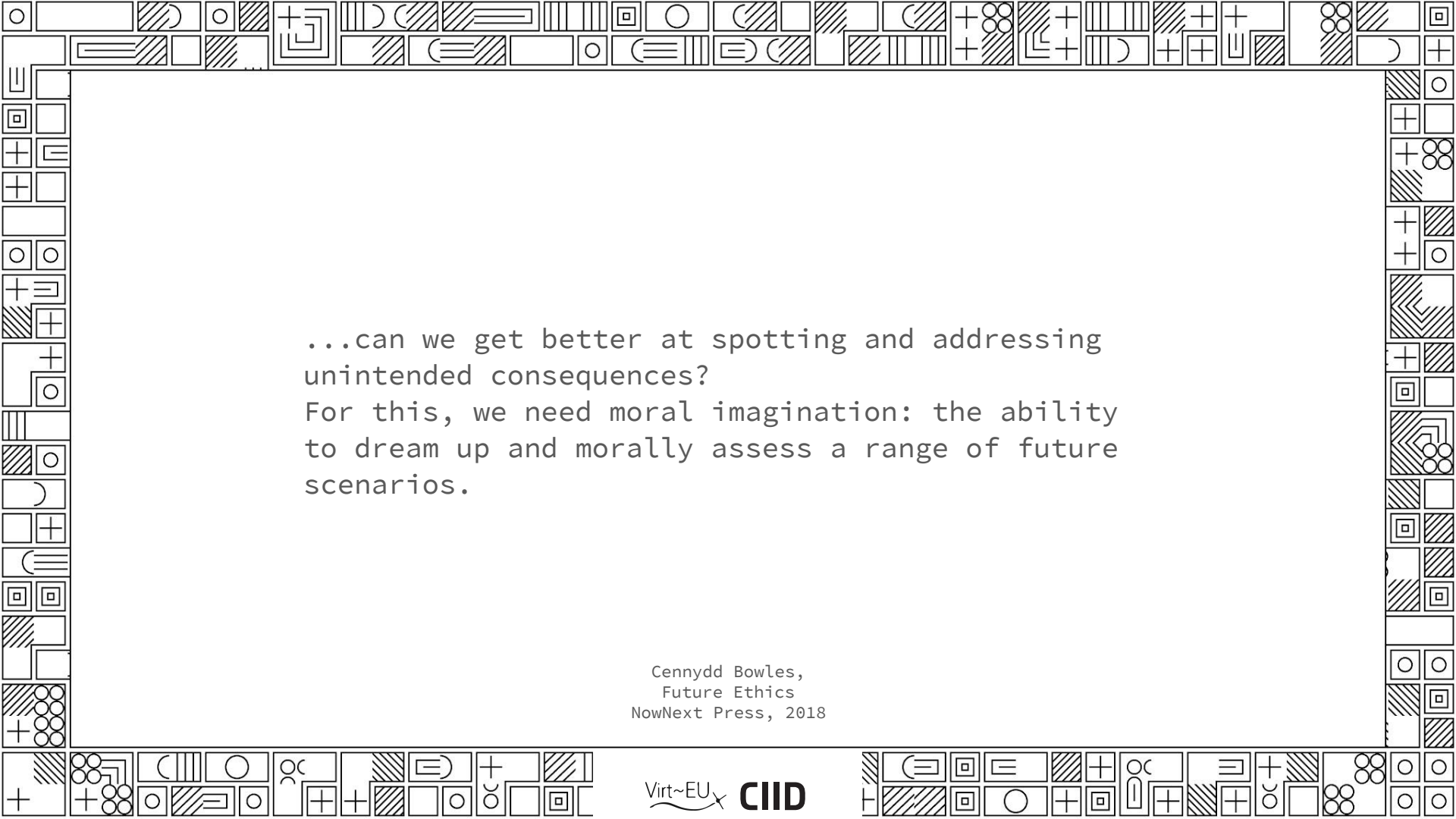
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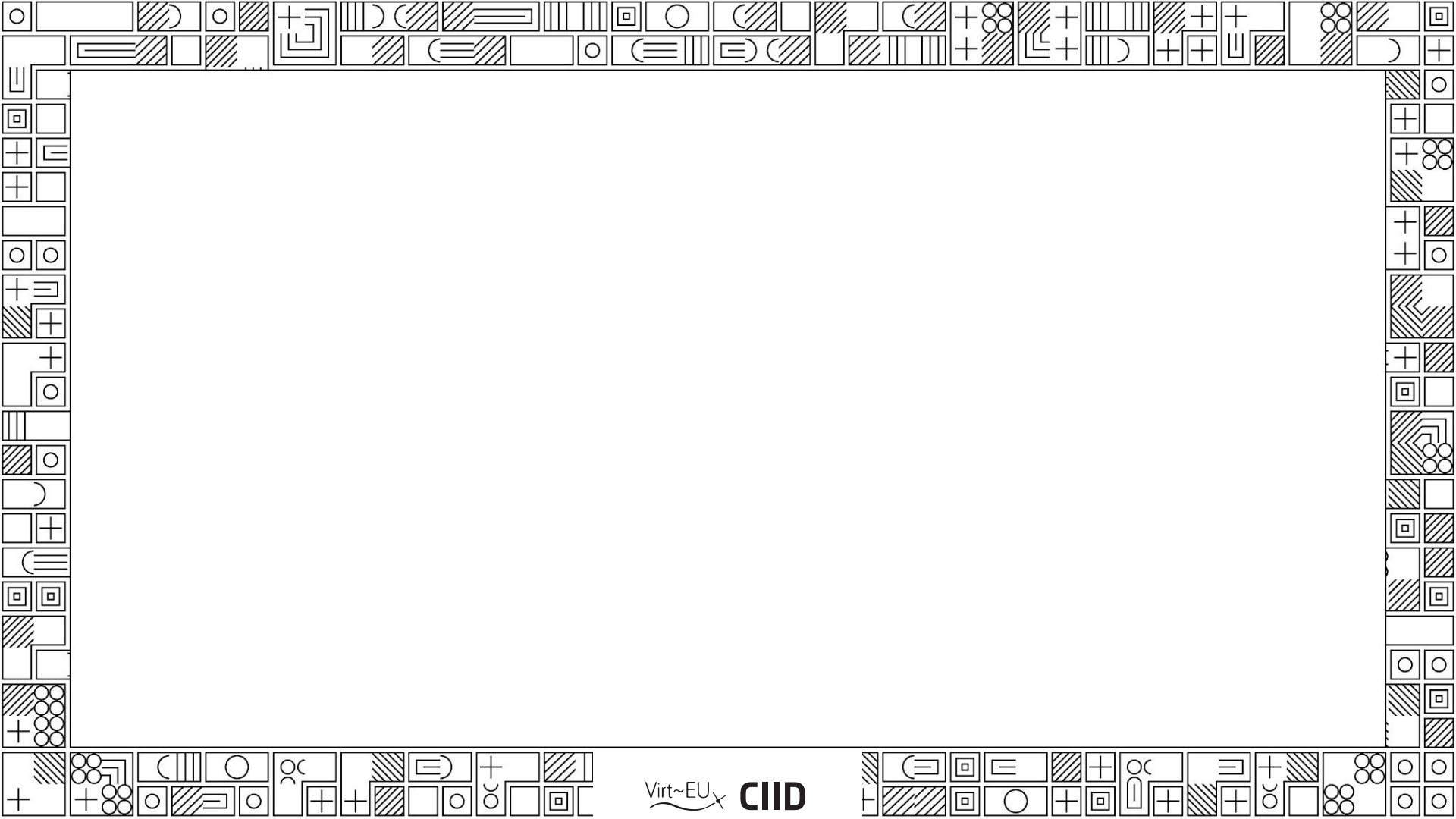
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December 6th, 2018

A decorative border composed of various geometric shapes and patterns, including squares, circles, lines, and hatching, surrounds the central text area.

...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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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.

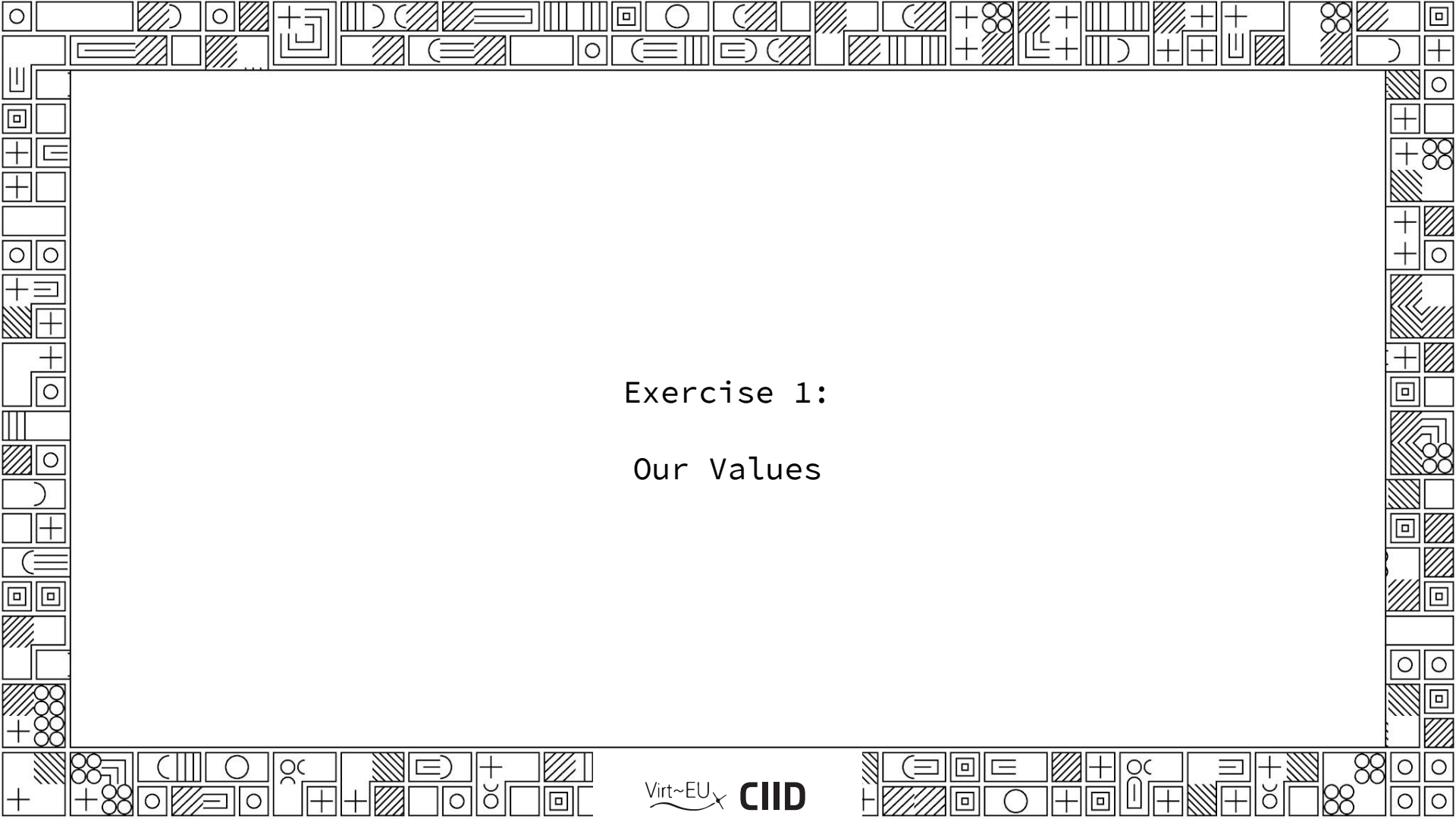
Friends of the Bear can record and send messages using the BearApp. Someone at home gets the message on their BearApp, approves it and delivers it wirelessly to the Bear. The Bear's heart will blink when it has a message.

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

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

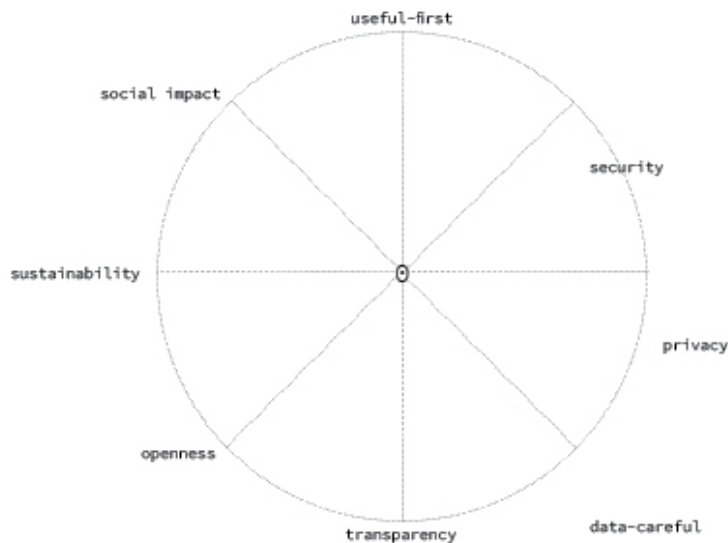
Social impact: help people, societies, communities thrive

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

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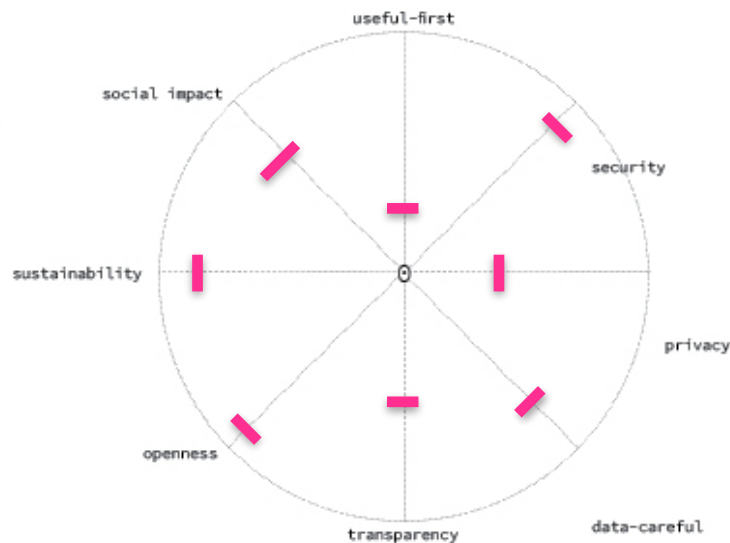
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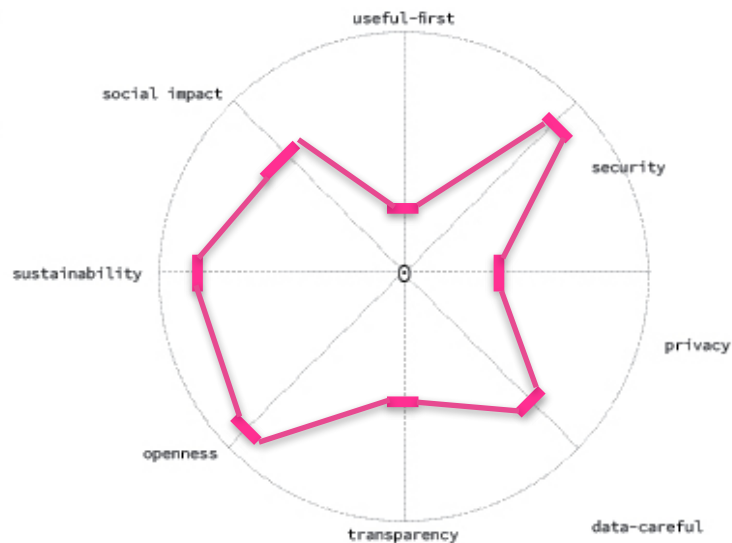
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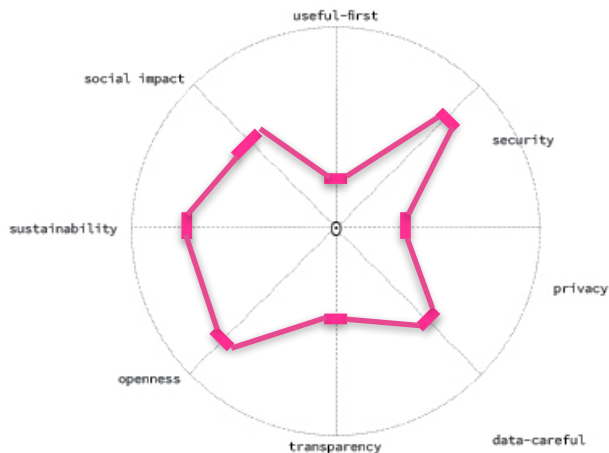
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Multiplier Card

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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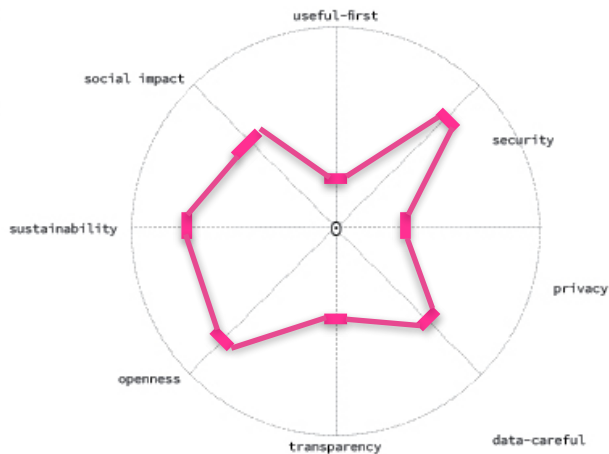
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Useful-first 0, 2

Security 0, 8

Privacy 0, 3

Data-careful 0, 6

Transparency 0, 4
8

Openness 0, 8

Sustainability 0, 7

Social impact 0, 6

SHORT BREAK!

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THE PROBLEM

An Annelie \$10.44

People, groups & messages

Chats 1 Calls Contacts Notifications 1

RECENT CHATS + Chat

Peter Otto Kuhberg 18.55
no problem 1

raphael katz Thu
Call ended - 5m 34s

Monika Seyfried 20/11/2018
Call ended - 55m 41s

funda.ustek 12/11/2018
hey fundu, 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...

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

Image Contact Location Video +

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

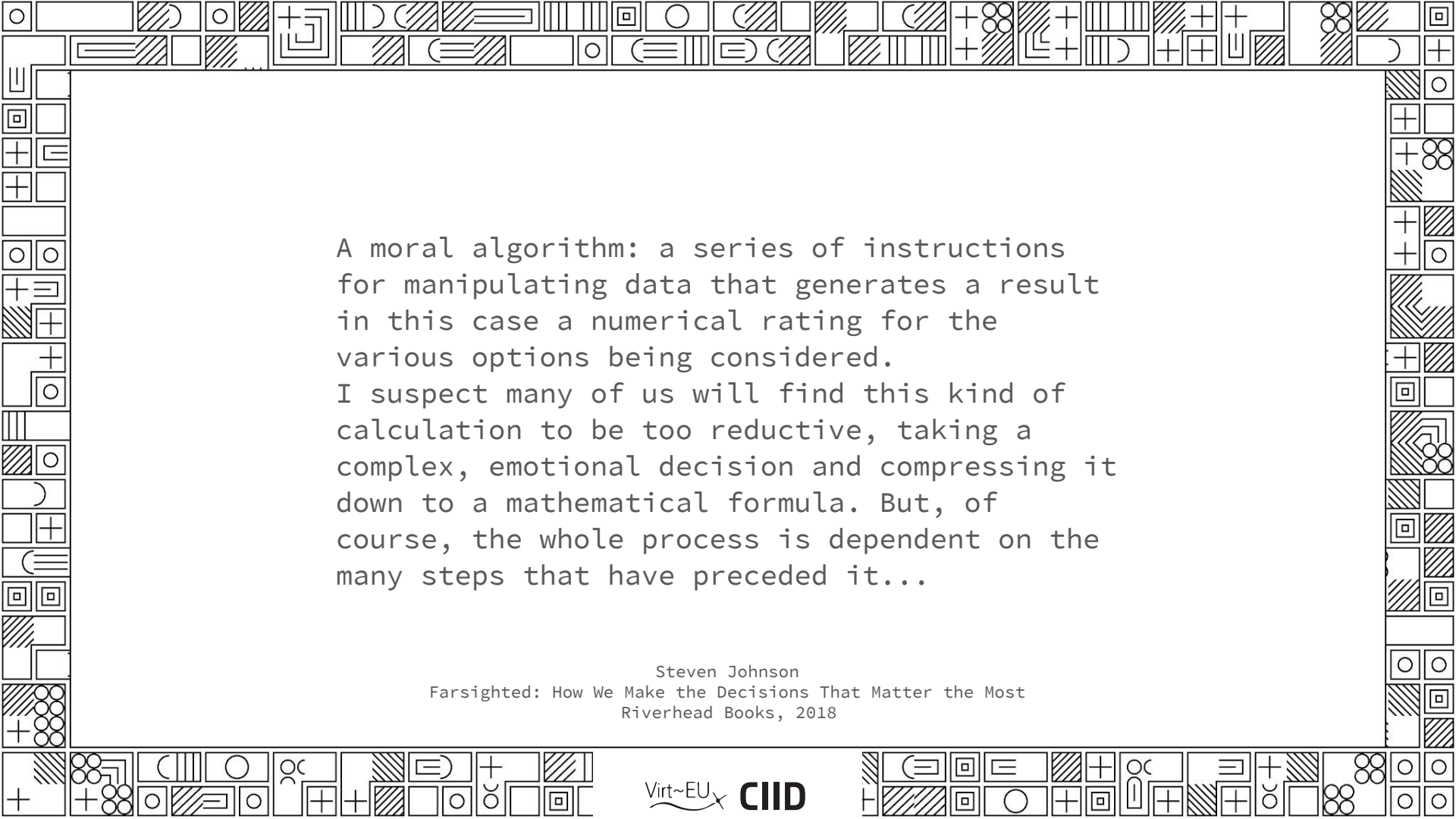
Let's implement the A.I. feature. People are going to love tracking how their communication progresses.

Option B

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

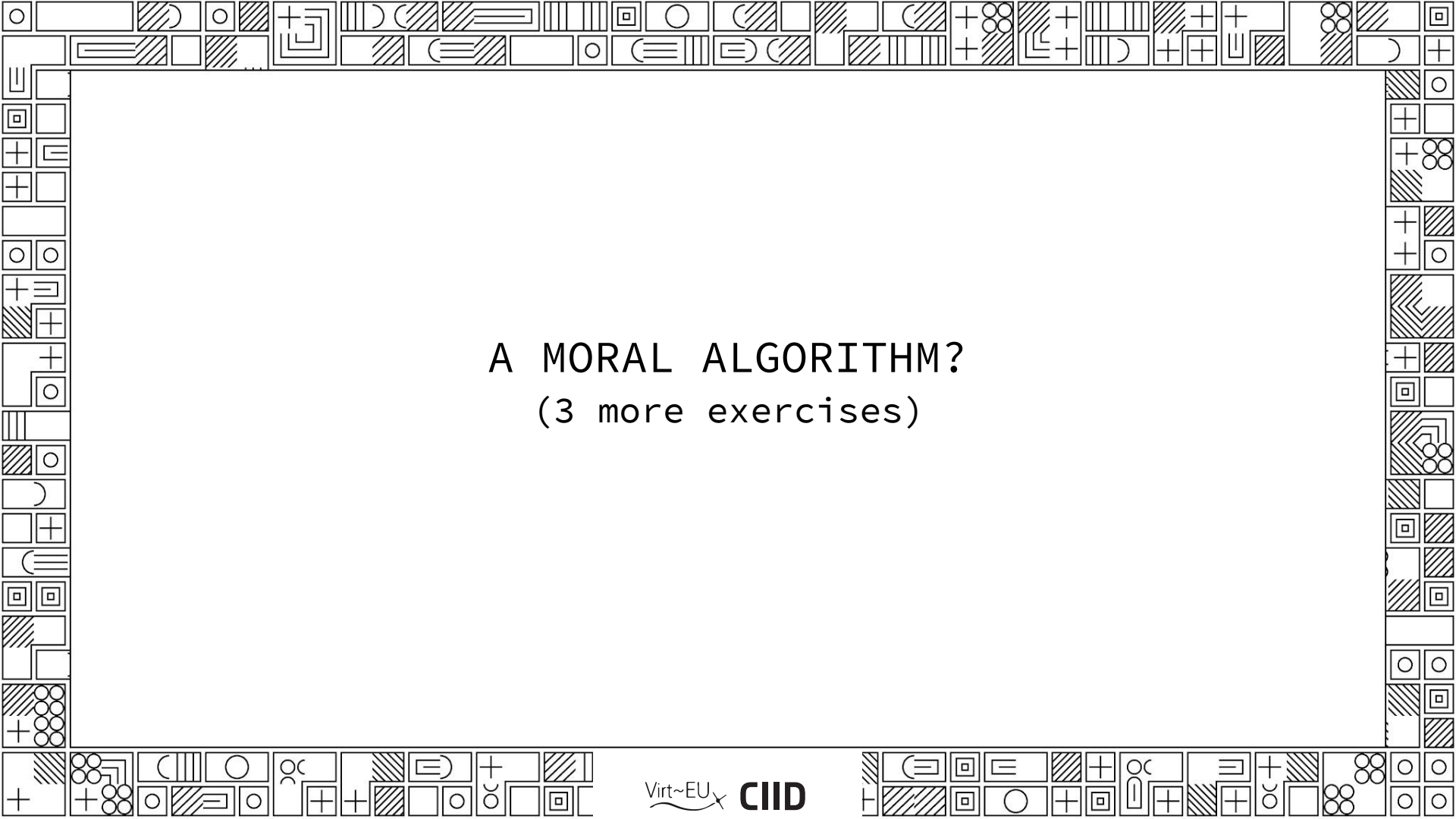
Discussion Points

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 decorative border composed of various geometric shapes and symbols, including squares, circles, triangles, and lines, arranged in a repeating pattern around the central text.

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

Key Actions

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

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

Sketch a moment in the scenario

<p>-----</p> <p>(the option)</p>	<p>GOOD x CLIMATE (destabiliser)</p> <p>WEIRD x UNREP'D (destabiliser)</p> <p>BAD x CONTEXT (destabiliser)</p>	_____	<div style="border: 1px dashed gray; height: 600px; width: 100%;"></div>

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

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implement a.i.

(the option)

GOOD x CLIMATE
(destabiliser)

WEIRD x UNREP'D
(destabiliser)
sexuality

BAD x CONTEXT
(destabiliser)

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...

Sketch a moment in the scenario



Main Goal

Key Actions

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

If everyone in the world...

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

Describe the scenario

Sketch the scenario

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

Rating Card

A MORAL ALGORITHM?

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.

Option A
rating

Option B
rating

Useful-first

Security

Privacy

Data-careful

Transparency

Openness

Sustainability

Social impact

implemen

(the option)



Main Goal

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Option B
rating

Useful-first

20

80

Security

30

90

Privacy

30

Data-careful

30

Transparency

40

Openness

40

Sustainability

50

Social impact

40

implemen

(the option)





Exercise 3:

Algorithmic Feelings

Main Goal

Key Actions

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

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?

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

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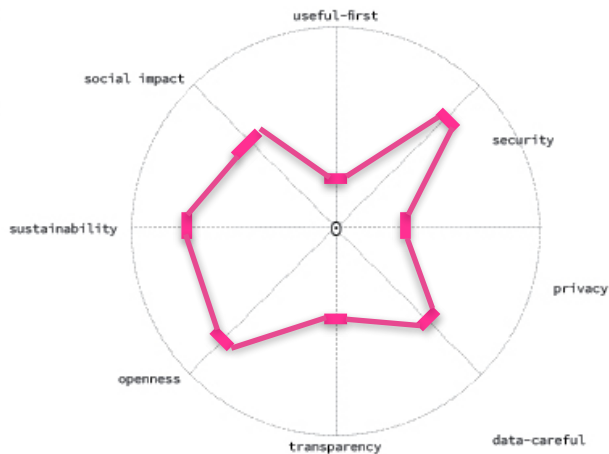
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Useful-first :	0,2				
Security :	0,8				
Privacy :	0,3				
Data-careful :	0,6				
Transparency :	0,4				
Openness :	0,8				
Sustainability :	0,7				
Social impact :	0,6				
		SUM		SUM	

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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				
		SUM		SUM	

Rating Card	A MORAL ALGORITHM?		
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.	Option A rating	Option B rating	
	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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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	
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		SUM		SUM	

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How do you feel about this?

STEP 7.

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ratings. Highlight the highest +
lowest.
What would need to change in order
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aligned? Or do you need to create
another option altogether?

		Option A		Option B	
values	multiplier	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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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

Key Actions

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

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?

		Option A		Option B	
values	multiplier	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
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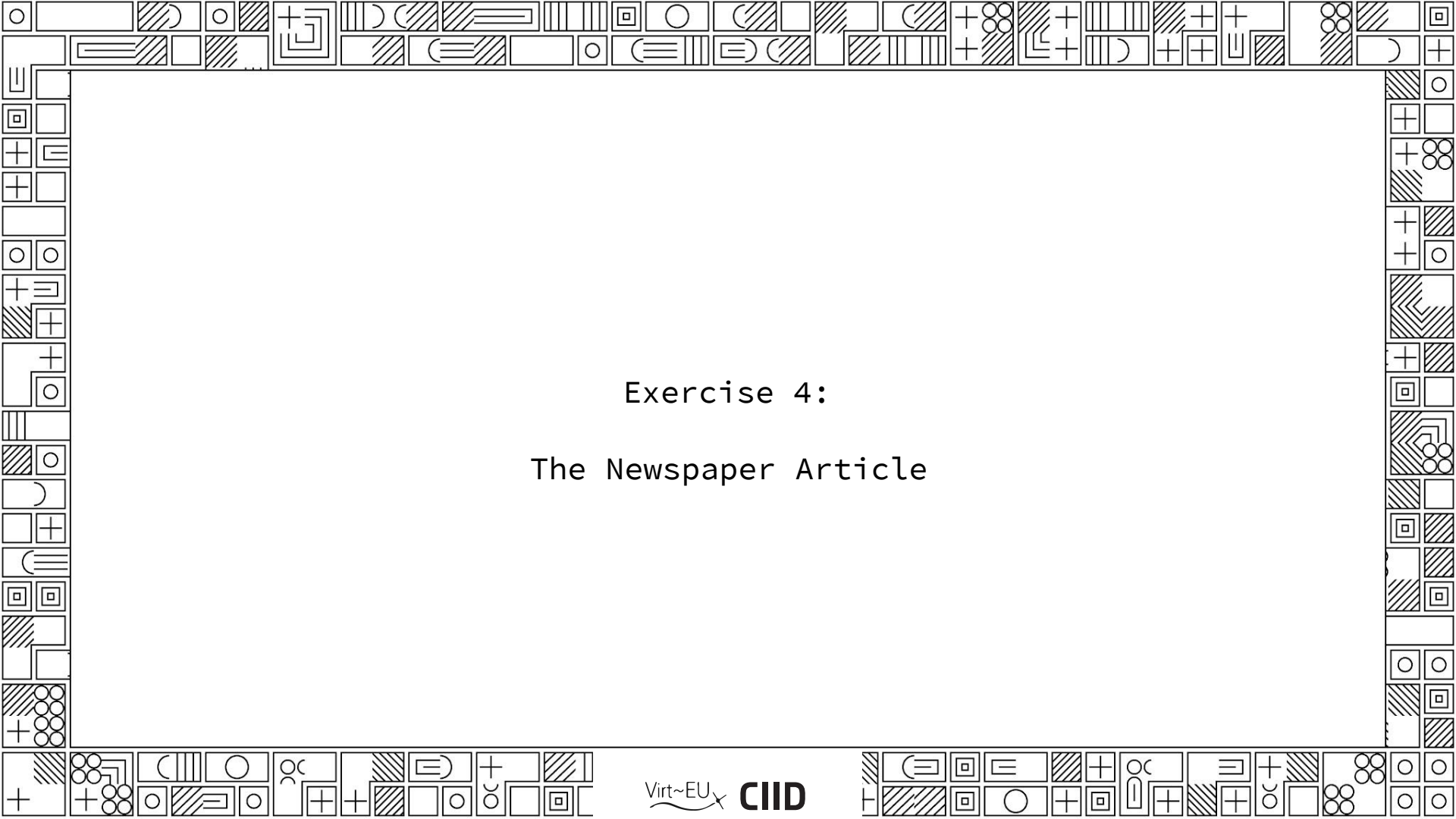
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		SUM 162		SUM 238	



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 sbs 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 _____ 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 sbs 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

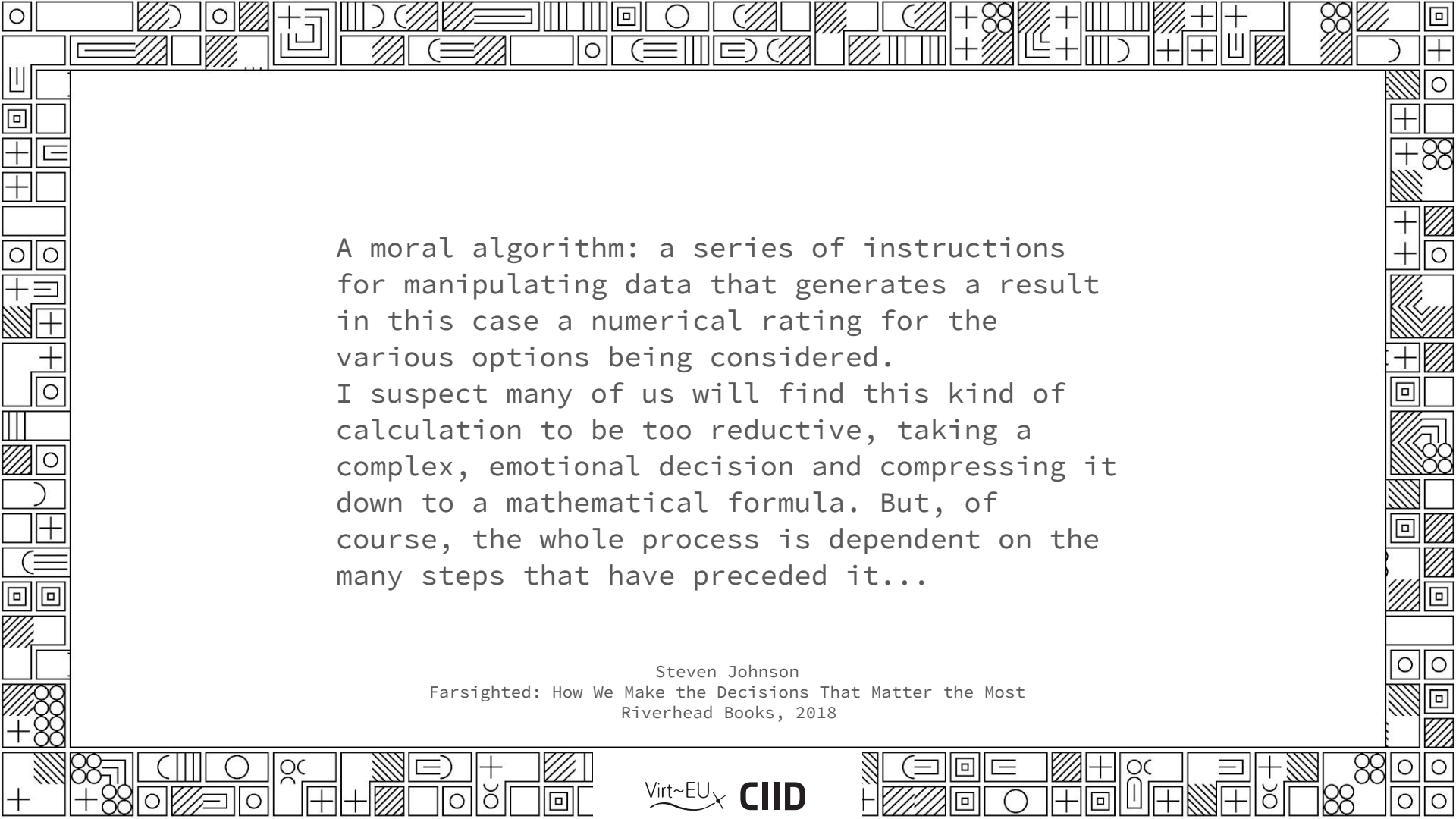
—short break—

Our company's problem of the day

A Moral Algorithm?

Feedback and Brainstorm

END

A decorative border composed of various geometric shapes and symbols, including squares, circles, triangles, and lines, arranged in a repeating pattern around the central text.

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-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 kind and parties associated with the product
Openness and empowerment: users can be masters of their domain
Sustainability: design things so 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 center, the less important, the closer to the outer ring, the more 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

Multiplier Card
A MORAL ALGORITHM!
Fuzzy to cold numbers

Write a number for how important each value is, based off the ring below. From 0-5 (e.g. 0.5 or 4.5)

Useful-first: _____
Security: _____
Privacy: _____
Data-careful: _____
Transparency: _____
Sustainability: _____
Social Impact: _____

VALUES

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

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

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

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

STEP 2: Describe and identify the three biggest elements and details to help your narrative.

Describe the scenario
In a world where all bears have A.I.

Sketch a moment to the scenario
Two pink hearts.

GOOD ACTIONS
A
(the option)

NEED A LARGER SCENARIO

NOT A CHOICE

IF EVERYONE IN THE WORLD..

Exercise 3
Main Goal
Algorithmic Feelings

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

STEP 1: Check back to your multiplier card. Write the cold numbers to the "Multiplier" column.

STEP 2: Check back to your rating card. Write the ratings you came up with for their respective values.

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 to the option is in best alignment with your values and priorities.

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

STEP 7: Openness as 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?

	values	Multiplier	rating	weighted rating	rating	weighted rating
Useful-first	1					
Security	1					
Privacy	1					
Data-careful	1					
Transparency	1					
Openness	1					
Sustainability	1					
Social Impact	1					
				SUR		

ALGORITHMIC FEELINGS

Exercise 4
A MORAL ALGORITHM!
THEME

Bear & Co. ?

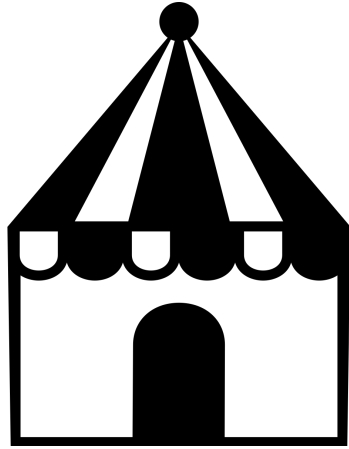
It all started with a great idea. A cuddly, fuzzy stuffed animal, that anyone could use to send voice messages to each other. Then things got a little complicated.

An insider at the Bear & Co. team in Houten told us that they were considering some difficult decisions as they spread on the cuddly Bear. They had to choose work and performance for the team. All of the energy and focus on the decision ended up in a choice where the team decided to The decision their values of social impact, children's

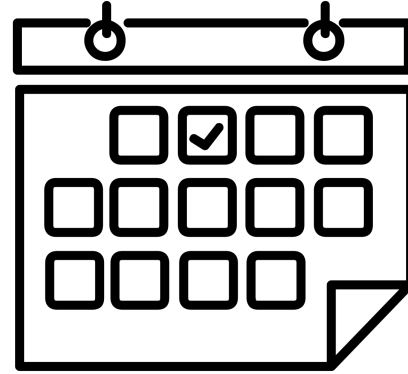
Over here in The Daily messroom, we're by their commitment to figuring out the situation. Watch this space, we'll be keeping an eye on Bear & Co. and all of their friends!

One of our friends from the nearby school says they're trying to be an inventor!

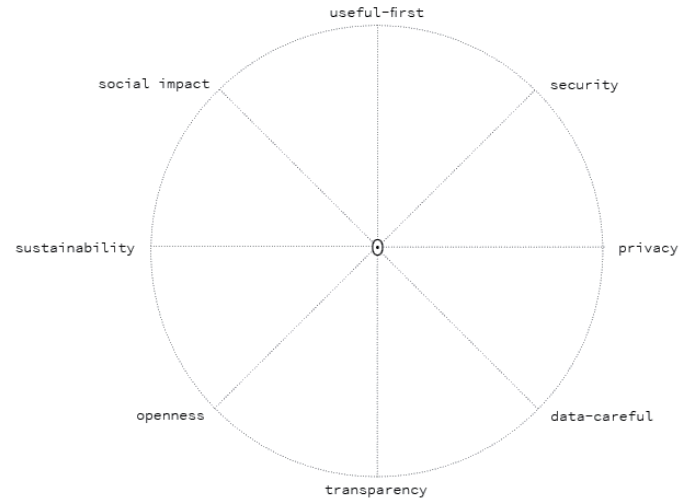
THE NEWSPAPER



How might we package this experience in different ways?



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



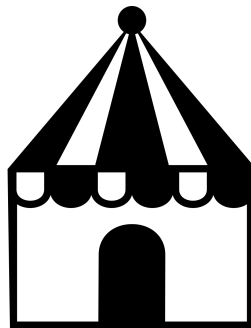
VALUES

<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>Describe the scenario</p>	<p>Sketch a moment in the scenario</p>
<p>-----</p> <p>(the option)</p> <p>GOOD x (benefit)</p> <p>WEIRD x (destabiliser)</p> <p>BAD x (consequence)</p>		

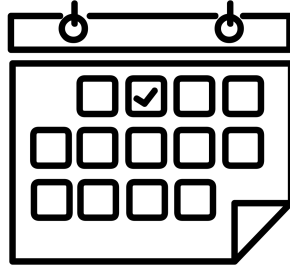
IF EVERYONE IN THE WORLD...

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

ALGORITHMIC FEELINGS



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