



Will Autonomous Systems Help Us When the Future Comes?

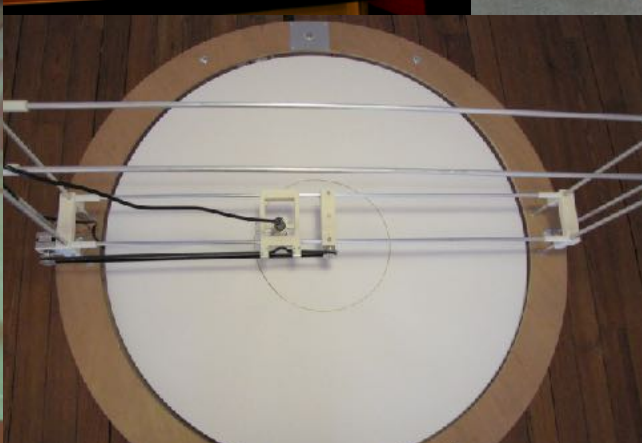
Dr Rachel Jacobs, Independent Artist & When the Future Comes Collective
Research Associate, Horizon Digital Economy & Mixed Reality Lab, University of Nottingham





the live data from the sensors in the forest affect the images that are captured

**Active Ingredient,
Mudlark &
Independent
Artist/Researcher
1996-ongoing**





When The Future Comes & the Future Machine
2019-2050

Technology Vs Ecological and Cultural Solutions: Will AI, Technology & Data help us when the future comes?

Reliance on hi-tech solutions to climate crisis perpetuates racism, says UN official

Rapporteur Tendayi Achiume says projects are at expense of marginalised groups and Indigenous peoples



Tendayi Achiume said the same structures that created ecological inequality were being relied on to solve the problem. Photograph: Mike Corder/AP

The world's reliance on hi-tech capitalist solutions to the climate and ecological crises is perpetuating racism, the outgoing UN racism rapporteur has warned.

Green solutions including electric cars, renewable energy and the rewilding of vast tracts of land are being implemented at the expense of racially and ethnically marginalised groups and Indigenous peoples, Tendayi Achiume told the Guardian in an interview

Green colonialism': Indigenous world leaders warn over west's climate strategy

UN summit in New York hears how resources needed for sustainable energy threaten Indigenous land and people



Brazil's Indigenous peoples minister, Sônia Guajajara, speaks at the United Nations. Photograph: Michael M Santiago/Getty Images

World Indigenous leaders meeting this week at an annual UN summit have warned that the west's climate strategy risks the exploitation of Indigenous territories, resources and people.

New and emerging threats about the transition to a greener economy, including mineral mining, were at the forefront of debate as hundreds of Indigenous chiefs, presidents, chairmen and delegates gathered at the 22nd

Making Kin with the Machines

Jason Edward Lewis, Noelani Arista, Archer Pechawis, Suzanne Kite

Published on: Jul 16, 2018

Updated on: Jul 14, 2019

DOI: 10.21428/bfard97o

It is such references that suggest to us that Ito's proposal for "extended intelligence" is doggedly narrow. We propose rather an extended "circle of relationships" that includes the non-human kin—from network daemons to robot dogs to artificial intelligences (AI) weak and, eventually, strong—that increasingly populate our computational biosphere. By bringing Indigenous epistemologies to bear on the "AI question," we hope in what follows to open new lines of discussion that can, indeed, escape the box.

We undertake this project not to "diversify" the conversation. We do it because we believe that Indigenous epistemologies are much better at respectfully accommodating the non-human. We retain a sense of community that is articulated through complex kin networks anchored in specific territories, genealogies, and protocols. Ultimately, our goal is that we, as a species, figure out how to treat these new non-human kin respectfully and reciprocally—and not as mere tools, or worse, slaves to their creators.

Lo-TEK: design by radical indigenism by Julia Watson

On the other hand, coined by Princeton professor and Cherokee Nation member Eva Marie Garoutte, the concept of **radical indigenism** takes its name from the Latin derivation of the word "radical": radix, meaning "root". Design by radical indigenism seeks to reconstruct and understand Indigenous philosophies in relation to design, construction and production in order to generate sustainable and resilient infrastructures adapted to each particular ecosystem. This movement bridges the gap between innovation, architecture, urbanism, conservation and indigenism. Once hybridised and scaled, these indigenous technologies could offer a new path for our contemporary societies, exponentially reducing humanity's ecological footprint and mitigating the predicted collapse.



Could AI save the Amazon rainforest?



📷 Cattle roam across burnt-out land in a conservation area in Pará state, Brazil, 26 August 2021. Photograph:

Conservationists in the Brazilian Amazon are using a new tool to predict the next sites of deforestation - and it may prove a gamechanger in the war on logging

It took just the month of March this year to fell an area of forest in Triunfo do Xingu equivalent to 700 football pitches. At more than **16,000 sq km**, this Environmental Protection Area (APA) in the south-eastern corner of the Brazilian Amazon, in the state of Pará, is one of the **largest conservation areas in the world**. And according to a new tool that predicts where deforestation will happen next, it's also the APA at highest

<p>Lamenting Eden</p> <p>a return to a pure, wild nature that humans have destroyed</p>	<p>Bringing on the Apocalypse</p> <p>The end of the world</p>	<p>Constructing Babel</p> <p>We can build a new world, a utopia and solve everything with technology</p>	<p>Celebrating Jubilee</p> <p>We can create a just, moral world if we do the right thing</p>
<p>Traditionalist</p> <p>The future should be as the past, not sure about modern world but not wantin things to change</p>	<p>Survivor</p> <p>Reacting to what life throws at you and hope the future is somehow easier, things will get better and you will somehow survive</p>	<p>Winner</p> <p>Life is a game to win, live for the moment and love the modern world and technology, optimistic the future is full of progress and things getting better</p>	<p>Striver</p> <p>There are many problems that you want to fix, seeking a spiritual, ethical and moral dimension to life. You strive for the future to be better than now</p>



Finsbury Park, London
when the autumn leaves fall



Rotherfield Peppard, Oxfordshire
when winter turns to spring



Christ Church Gardens, Nottingham
when this tree blossoms

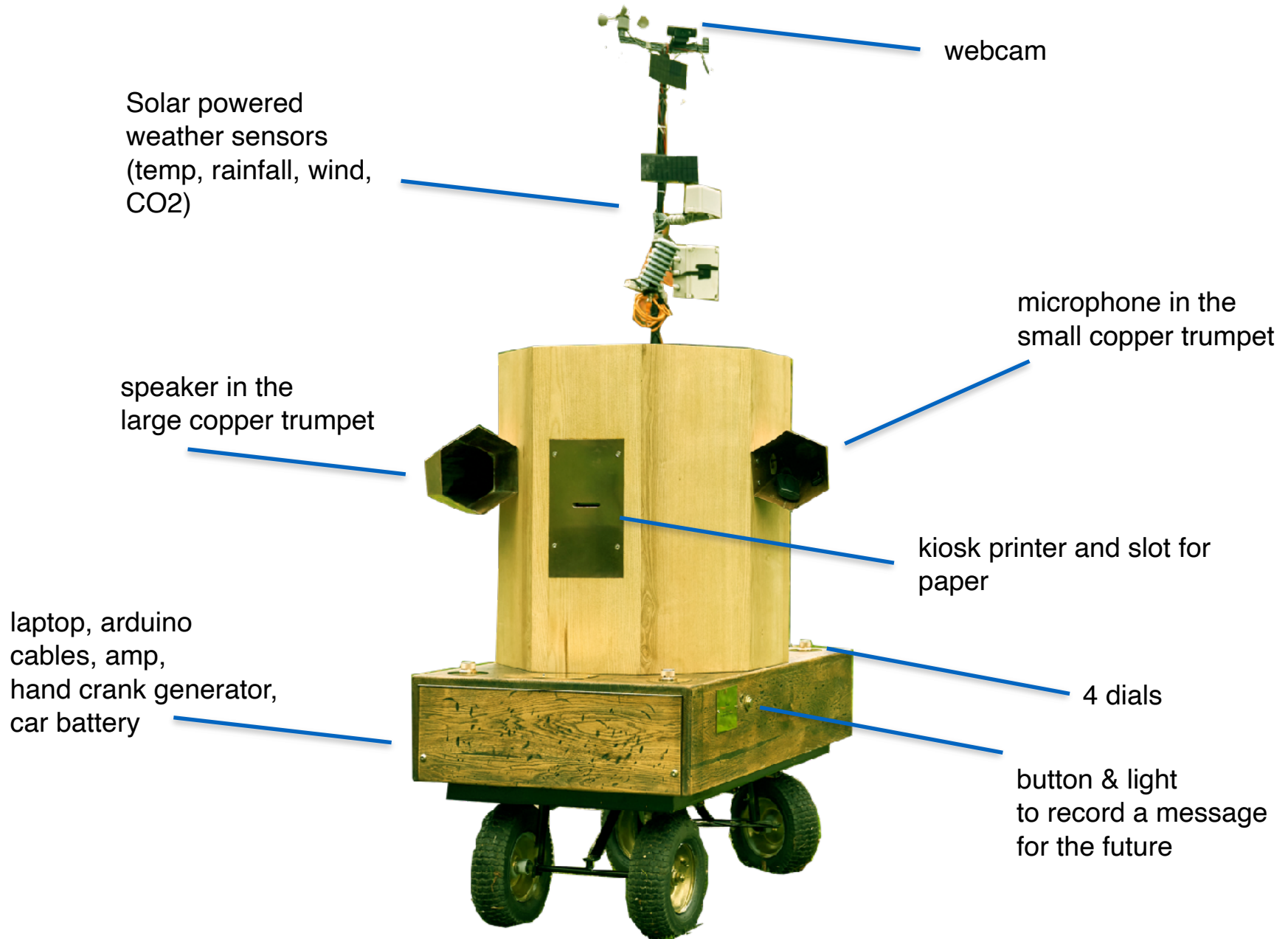


Cannington, Somerset
when the trees are abundant in summer



Windermere-Leven Waters, Cumbria
when we meet by the water as summer ends

What is a
Future Machine?



webcam

Solar powered
weather sensors
(temp, rainfall, wind,
CO2)

microphone in the
small copper trumpet

speaker in the
large copper trumpet

kiosk printer and slot for
paper

laptop, arduino
cables, amp,
hand crank generator,
car battery

4 dials

button & light
to record a message
for the future



Future

Present

Past



Nature	Progress	Tradition	Apocalypse
Survival	Justice	Utopia	Mystery
Global Temperature	Sea Ice Levels	Sea Levels	CO2
Joy	Optimism	Pessimism	Despair







Press
Press the button
to record your message











					scenario id	scenario description	extreme?	extreme temp?	extreme prec	extreme wind	temp desc	prec desc	wind desc	
-300	-4	0	0.1	0	0.2	ARCTIC_DRY_STILL	dry still arctic	extreme	extreme	expected	expected	ARCTIC	DRY	STILL
-300	-4	0	0.1	0.3	9	ARCTIC_DRY_BREEZY	icy breeze arctic	extreme	extreme	expected	expected	ARCTIC	DRY	BREEZY
-300	-4	0	0.1	1.0	17	ARCTIC_DRY_WINDY	arctic icy wind	extreme	extreme	expected	unexpected	ARCTIC	DRY	WINDY
-300	-4	0	0.1	1.7	500	ARCTIC_DRY_GALE	arctic ice storm	extreme	extreme	expected	extreme	ARCTIC	DRY	GALE
-300	-4	0.2	2	0	0.2	ARCTIC_WET_STILL	arctic snowy	extreme	extreme	expected	expected	ARCTIC	WET	STILL
-300	-4	0.2	2	0.3	9	ARCTIC_WET_BREEZY	arctic snowy flurry	extreme	extreme	expected	expected	ARCTIC	WET	BREEZY
-300	-4	0.2	2	1.0	17	ARCTIC_WET_WINDY	arctic snow storm	extreme	extreme	expected	unexpected	ARCTIC	WET	WINDY
-300	-4	0.2	2	1.7	500	ARCTIC_WET_GALE	polar vortex	extreme	extreme	expected	extreme	ARCTIC	WET	GALE
-300	-4	3	100	0	0.2	ARCTIC_DOWNPOUR_STILL	arctic blizzard	extreme	extreme	extreme	expected	ARCTIC	DOWNPOUR	STILL
-300	-4	3	100	0.3	9	ARCTIC_DOWNPOUR_BREEZY	arctic blizzard	extreme	extreme	extreme	expected	ARCTIC	DOWNPOUR	BREEZY
-300	-4	3	100	1.0	17	ARCTIC_DOWNPOUR_WINDY	arctic blizzard	extreme	extreme	extreme	unexpected	ARCTIC	DOWNPOUR	WINDY
-300	-4	3	100	1.7	500	ARCTIC_DOWNPOUR_GALE	polar vortex	extreme	extreme	extreme	extreme	ARCTIC	DOWNPOUR	GALE
-4	2	0	0.1	0	0.2	FREEZING_DRY_STILL	freezing and bright	extreme	extreme	expected	expected	FREEZING	DRY	STILL
-4	2	0	0.1	0.3	9	FREEZING_DRY_BREEZY	freezing and breezy	extreme	extreme	expected	expected	FREEZING	DRY	BREEZY
-4	2	0	0.1	1.0	17	FREEZING_DRY_WINDY	freezing windy	extreme	extreme	expected	unexpected	FREEZING	DRY	WINDY
-4	2	0	0.1	1.7	500	FREEZING_DRY_GALE	freezing galey	extreme	extreme	expected	extreme	FREEZING	DRY	GALE
-4	2	0.2	2	0	0.2	FREEZING_WET_STILL	freezing and icy	extreme	extreme	expected	expected	FREEZING	WET	STILL
-4	2	0.2	2	0.3	9	FREEZING_WET_BREEZY	freezing, icy and breezy	extreme	extreme	expected	expected	FREEZING	WET	BREEZY
-4	2	0.2	2	1.0	17	FREEZING_WET_WINDY	ice storm	extreme	extreme	expected	unexpected	FREEZING	WET	WINDY
-4	2	0.2	2	1.7	500	FREEZING_WET_GALE	snow storm	extreme	extreme	expected	extreme	FREEZING	WET	GALE
-4	2	3	100	0	0.2	FREEZING_DOWNPOUR_STILL	blizzardy	extreme	extreme	extreme	expected	FREEZING	DOWNPOUR	STILL
-4	2	3	100	0.3	9	FREEZING_DOWNPOUR_BREEZY	blizzardy	extreme	extreme	extreme	expected	FREEZING	DOWNPOUR	BREEZY
-4	2	3	100	1.0	17	FREEZING_DOWNPOUR_WINDY	blizzardy	extreme	extreme	extreme	unexpected	FREEZING	DOWNPOUR	WINDY
-4	2	3	100	1.7	500	FREEZING_DOWNPOUR_GALE	gale force winds blizzardy	extreme	extreme	extreme	extreme	FREEZING	DOWNPOUR	GALE
3	11	0	0.1	0	0.2	COLD_DRY_STILL	clear, cold and dry	expected	expected	expected	expected	COLD	DRY	STILL
3	11	0	0.1	0.3	9	COLD_DRY_BREEZY	cold, dry and breezy	expected	expected	expected	expected	COLD	DRY	BREEZY
3	11	0	0.1	1.0	17	COLD_DRY_WINDY	cold, dry and windy	unexpected	expected	expected	unexpected	COLD	DRY	WINDY
3	11	0	0.1	1.7	500	COLD_DRY_GALE	gale force wind and cold	extreme	expected	expected	extreme	COLD	DRY	GALE
3	11	0.2	2	0	0.2	COLD_WET_STILL	cold and rainy	expected	expected	expected	expected	COLD	WET	STILL
3	11	0.2	2	0.3	9	COLD_WET_BREEZY	cold rainy and breezy	expected	expected	expected	expected	COLD	WET	BREEZY
3	11	0.2	2	1.0	17	COLD_WET_WINDY	cold and stormy	unexpected	expected	expected	unexpected	COLD	WET	WINDY
3	11	0.2	2	1.7	500	COLD_WET_GALE	cold hurricane or violently stormy	extreme	expected	expected	extreme	COLD	WET	GALE
3	11	3	100	0	0.2	COLD_DOWNPOUR_STILL	cold downpour	extreme	expected	extreme	expected	COLD	DOWNPOUR	STILL
3	11	3	100	0.3	9	COLD_DOWNPOUR_BREEZY	cold, breezy downpour	extreme	expected	extreme	expected	COLD	DOWNPOUR	BREEZY
3	11	3	100	1.0	17	COLD_DOWNPOUR_WINDY	cold vertical rain and windy	extreme	expected	extreme	unexpected	COLD	DOWNPOUR	WINDY
3	11	3	100	1.7	500	COLD_DOWNPOUR_GALE	cold hurricane or violently stormy	extreme	expected	extreme	extreme	COLD	DOWNPOUR	GALE
12	14	0	0.1	0	0.2	MILD_DRY_STILL	clear, dry, mild	expected	expected	expected	expected	MILD	DRY	STILL
12	14	0	0.1	0.3	9	MILD_DRY_BREEZY	mild, dry and breezy	expected	expected	expected	expected	MILD	DRY	BREEZY
12	14	0	0.1	1.0	17	MILD_DRY_WINDY	mild, dry and windy	unexpected	expected	expected	unexpected	MILD	DRY	WINDY
12	14	0	0.1	1.7	500	MILD_DRY_GALE	Mild, gale force wind and dry	extreme	expected	expected	extreme	MILD	DRY	GALE
12	14	0.2	2	0	0.2	MILD_WET_STILL	mild cloudy and rainy	expected	expected	expected	expected	MILD	WET	STILL
12	14	0.2	2	0.3	9	MILD_WET_BREEZY	mild rainy and breezy	expected	expected	expected	expected	MILD	WET	BREEZY
12	14	0.2	2	1.0	17	MILD_WET_WINDY	mild and stormy	unexpected	expected	expected	unexpected	MILD	WET	WINDY
12	14	0.2	2	1.7	500	MILD_WET_GALE	mild hurricane or violently stormy	extreme	expected	expected	extreme	MILD	WET	GALE
12	14	3	100	0	0.2	MILD_DOWNPOUR_STILL	mild and downpour	extreme	expected	extreme	expected	MILD	DOWNPOUR	STILL



planet.txt

[[Global]
Reeling from floods, bird flu and earthquakes,
southern fires and northern drought. Yet, hope
persists in a treaty to protect our oceans deep.

[Arctic]
The circle of sea ice at the North Pole is now
much less than ever seen. Vast icebergs float seaborne.
Still, agreements are made to drill for oil in Alaska.

[local]
The cherry trees of Christ Church Gardens have reached
full blossom. Despite cold frost and snow. The trees are
now alone, the shrubs and birds gone. We await new life.

[Antarctic]
Floating sea ice around the South Pole is melting,
more than ever as the air warms. The doomsday
glacier is in retreat. Leaving penguins homeless.

```
serial.txt
[section]
baud=115200
path=
name=UM4
frequencysecs=0.2
readtime=1000
write=1000
code=serialonly=false
// # INPUT, Lever, Earth, Season, Mood, Future, Record, Crank
filter=INPUT,1,1,1,1,1,1
// # W=AIHER, temperature, moisture, windspeeds, rainfallUMMinute, rainfallUMHour, rainfallUMDay, CO2
// takeweatherdata=WAIHER,7.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0
takeweatherdata=WEATHER,10.0,6.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0
```

```
label_template.prn
<ESC>6P<36><000>
<ESC>0<1>
<ESC>j<80>
<ESC>!<0>
<ESC>N<1><ESC>B<1>Your Quest<ESC>B<0><LF>
<ESC>N<1>is to [quest],<LF>
<ESC>N<1>being aware of [mood]<LF>
<ESC>N<1>remembering [myth]<LF>
<LF><ESC>!<0>
<ESC>N<1>[planet1]<LF>
<ESC>N<1>[planet2]<LF>
<ESC>N<1>[planet3]<LF>
<ESC>N<1>Press the button and speak into the trumpet<LF>
<ESC>N<1>to leave a message for the future<LF>
<LF><ESC>!<0>
<ESC>N<1>Continue your quest at whenthefuturecomes.net/futurequest<LF>
<ESC>N<1>Your secret code is: [weathercode]<LF>
<RS>
```

prefs.txt

```
[serve-]
url=https://whenthefuturecomes.net
;url=https://beaker.powweb.com
folder=/future/
image upload script=upload_image.php
audio upload script=uploadaudio.php
zip upload script=uploadzip.php

[local folders]
top level=../
upload move=uploaded/
audio record=record/audio/
image record=record/images/

audio play-record/audio/
image play-play/images/

Temp=INT,IRETAM/

waather record=record/weather/

machine sounds=machine sounds/

countdown sounds=event sounds/countdown/
lineout sounds=event sounds/lineout/
record button sounds=event sounds/recordbutton/
record and sounds=event sounds/recordand/
```

```
[webcam]
;frequency hours=0.0
frequency minutes=1.0

wait at start seconds=10.0
```

```
[projector]
check frequency seconds=11
server=http://192.168.0.2
port=80
filename=startprojecting.txt.
```

```
[printer]
;printcommandline=C:\Users\Admin\Desktop\futurePC3\print-tool\bin\Debug\print-tool.exe C:\Users\Admin\Desktop\futurePC3\print-tool\label.prn
printcommandline=printtool.bat
host=hits://localhost
port=45351
paths=/printer

[audie]
record seconds=40
time out seconds=100.0
microphone name=
countdown loop=true
countdown volume=0.25
wait record button=true
```

```
[weathercode.ios]
defau.txtcode=unpected
```

spring file explorer showing a list of files with columns for Name, Date Modified, Size, and Kind. Files include various .jpg images and .mp3 audio files.

audio file explorer showing a list of folders and files with columns for Name, Date Modified, Size, and Kind. Folders include 'downpour-xenon', 'vortex-advowee', 'freezing-censor', etc.



Next big question: How do we archive, sustain and create a coherent story of Future Machine's journey over 30 years?

www.whenthefuturecomes.net

Created by Rachel Jacobs in collaboration with carpenter Ian Jones, engineers Matt Little & Matthew Gates, artists Frank Abbott, Juliet Robson, Wallace Heim, Caroline Locke, Esi Eshun, musicians Alexandre Yemaoua Dayo and David Kemp, creative programmer Robin Shackford, computer scientists & researchers Dominic Price Steve Benford, Jocelyn Spence, Elvira Perez and climate scientist John King. With participants in public workshops across England.

Supported using public funding by Arts Council England, Furtherfield, Horizon Digital Economy and Mixed Reality Lab, University of Nottingham and in kind support from the British Antarctic Survey and Primary Studios.

Activity: Making a flip book story that imagines what different tools we need to take with us into the future - based on the myths we hold about the future

1. In the first box describe the place you call home (the ecology, place and community)
2. In the second box imagine what your home will be like 30 years from now, based on the one of the myths & corresponding roles below.
3. In the third box imagine a tool, technology, dataset, artefact, memento or other thing that will take you on your journey to this future. Explain why it will help. Is it and does it need to be sustainable, trustworthy, private and secure?

<p>Lamenting Eden</p> <p>a return to a pure, wild nature that humans have destroyed</p>	<p>Bringing on the Apocalypse</p> <p>The end of the world</p>	<p>Constructing Babel</p> <p>We can build a new world, a utopia and solve everything with technology</p>	<p>Celebrating Jubilee</p> <p>We can create a just, moral world if we do the right thing</p>
<p>Traditionalist</p> <p>The future should be as the past, not sure about modern world but not wanting things to change</p>	<p>Survivor</p> <p>Reacting to what life throws at you and hope the future is somehow easier, things will get better and you will somehow survive</p>	<p>Winner</p> <p>Life is a game to win, live for the moment and love the modern world and technology, optimistic the future is full of progress and things getting better</p>	<p>Striver</p> <p>There are many problems that you want to fix, seeking a spiritual, ethical and moral dimension to life. You strive for the future to be better than now</p>

As a group:

1. Take the book and cut along the straight lines on the inside pages, leaving the first and final pages uncut (see below but without the funny bodies!)
2. Mix and match the stories until you find the one you like best
3. On the final page write an ending, statement or prediction for the story you have chosen.

