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How do **we** make sense of climate change?

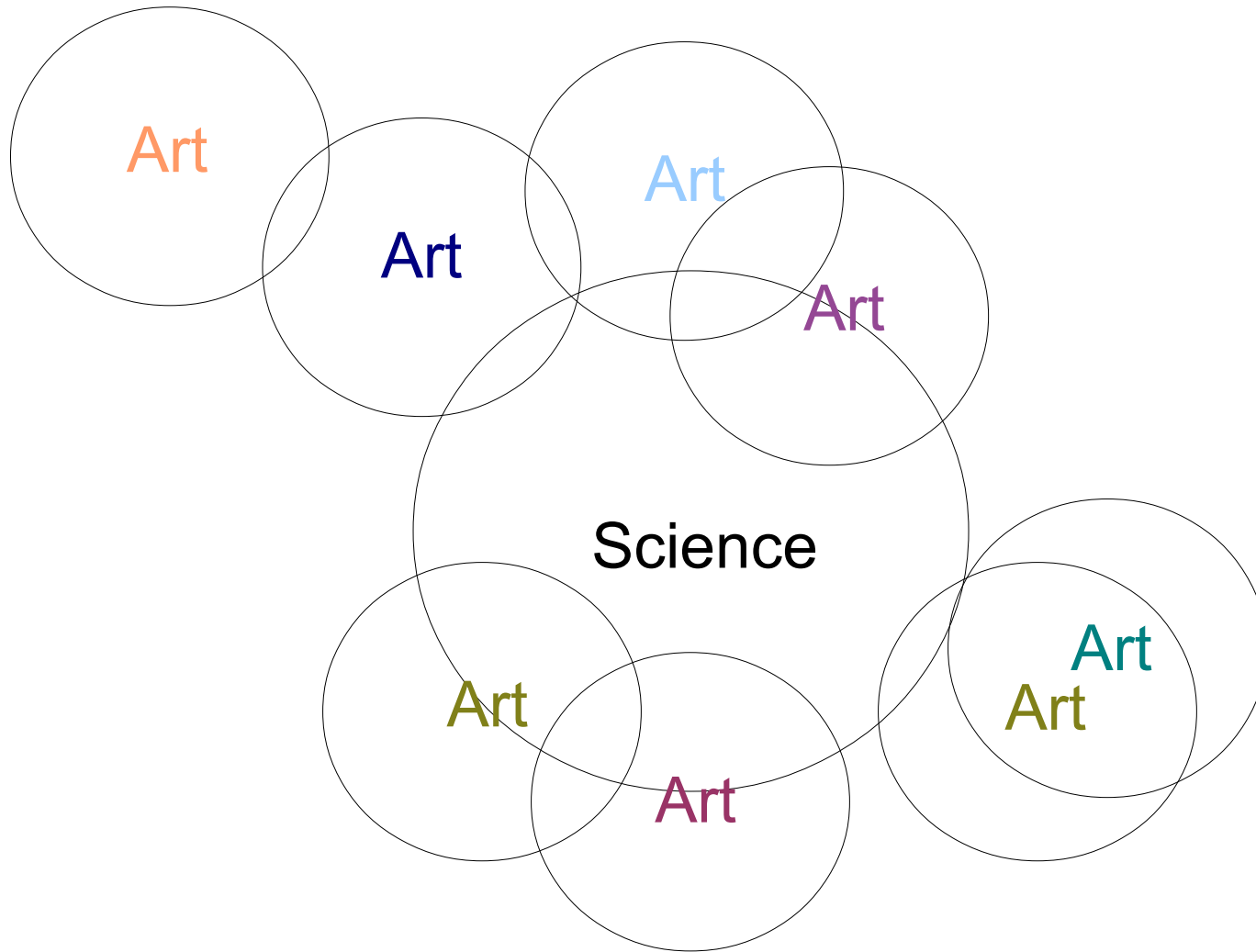
How can artistic methods
expand understanding
of scientific data?

SCIENCE

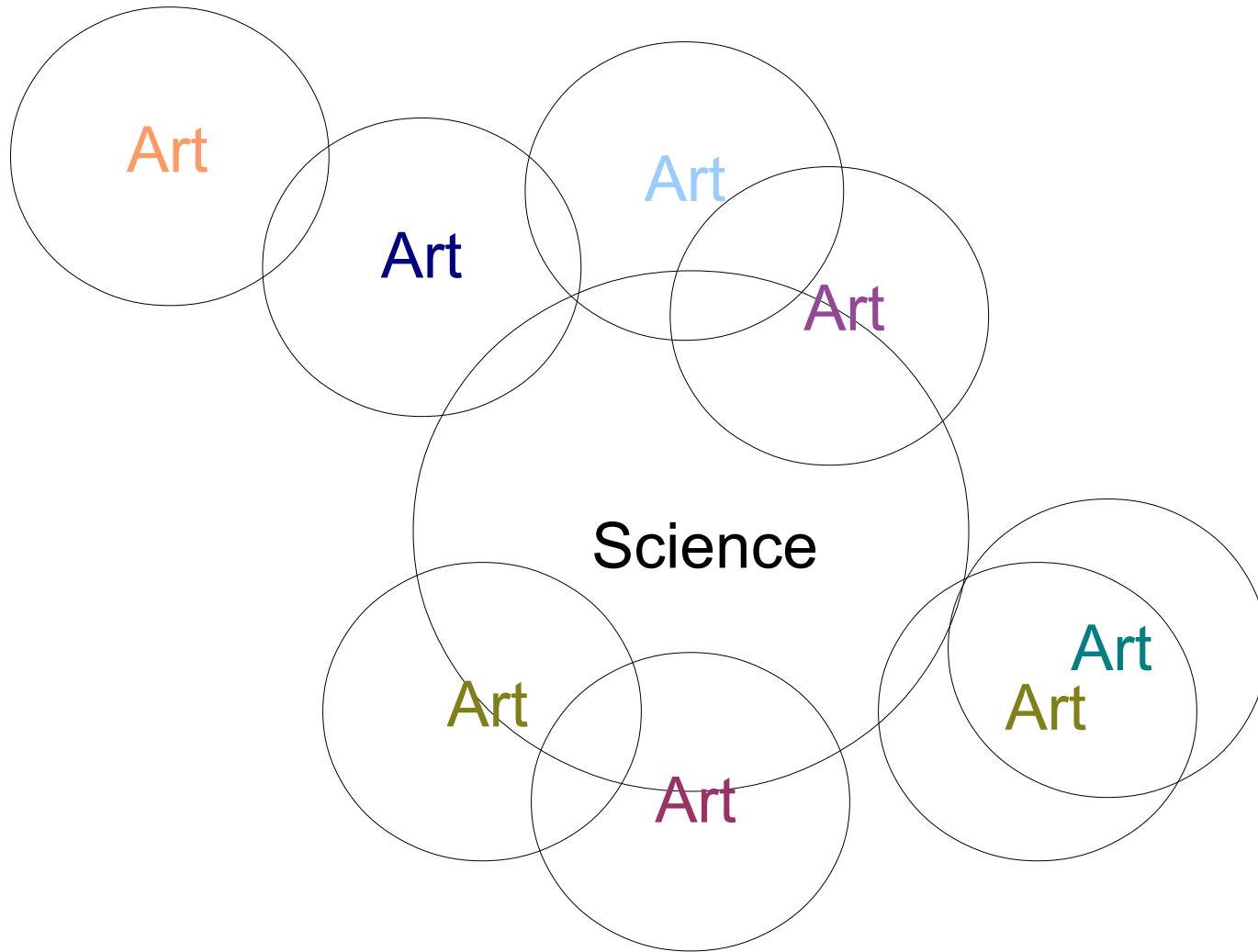
Aims to be objective
and to arrive at consensus agreement

ART

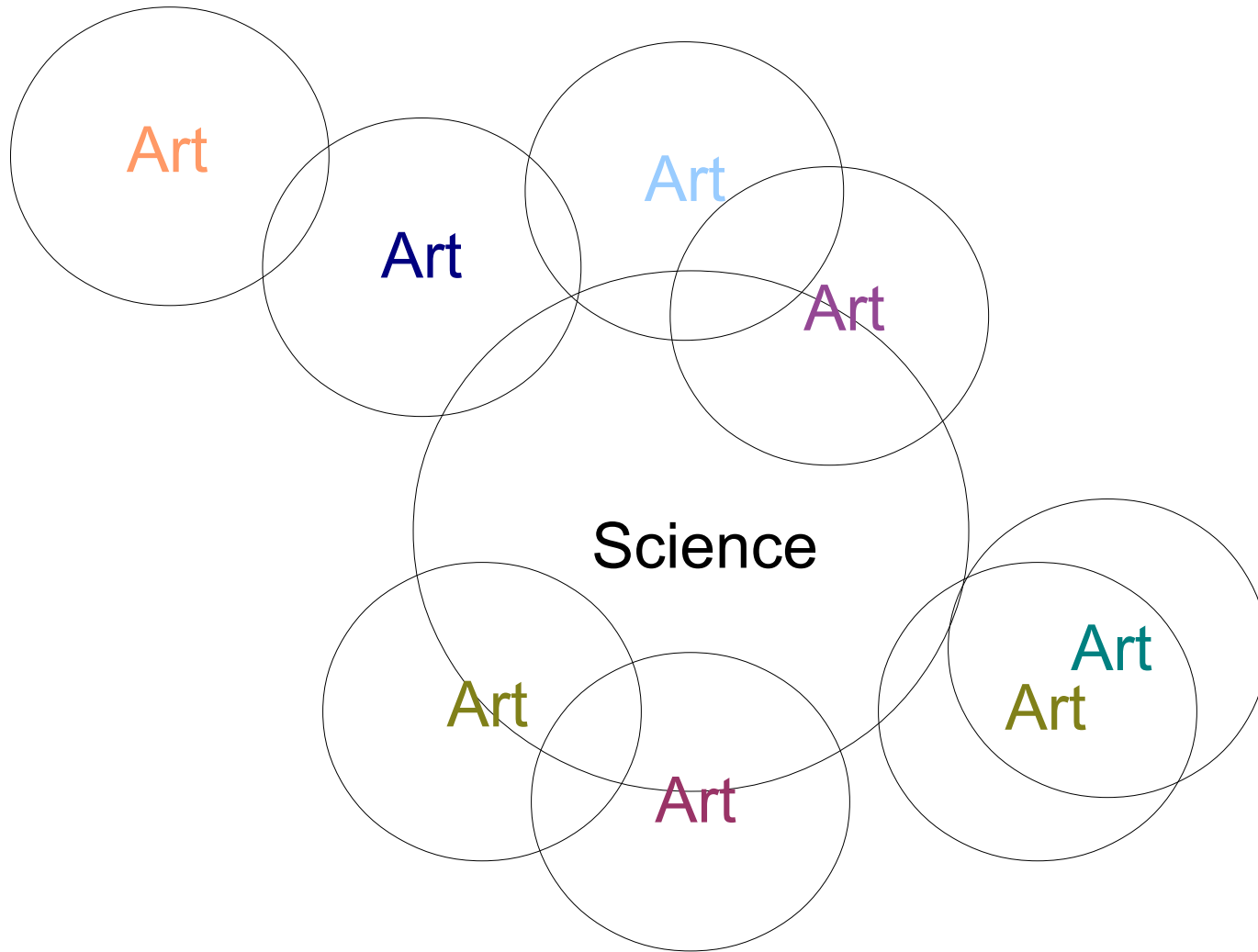
Typically expresses an individual's
subjective experience



There is **one** scientific method
There are **many** artistic methods



How useful!



Many ways of understanding scientific data are needed
in order to

design a sustainable future.

We all process information in different ways.

Not everyone understands the graphs and charts
produced by scientists.

These are just three of many artistic methods:

Tracing

Relating

Dynamically connecting

They are just three ways of responding to art:

Tracing

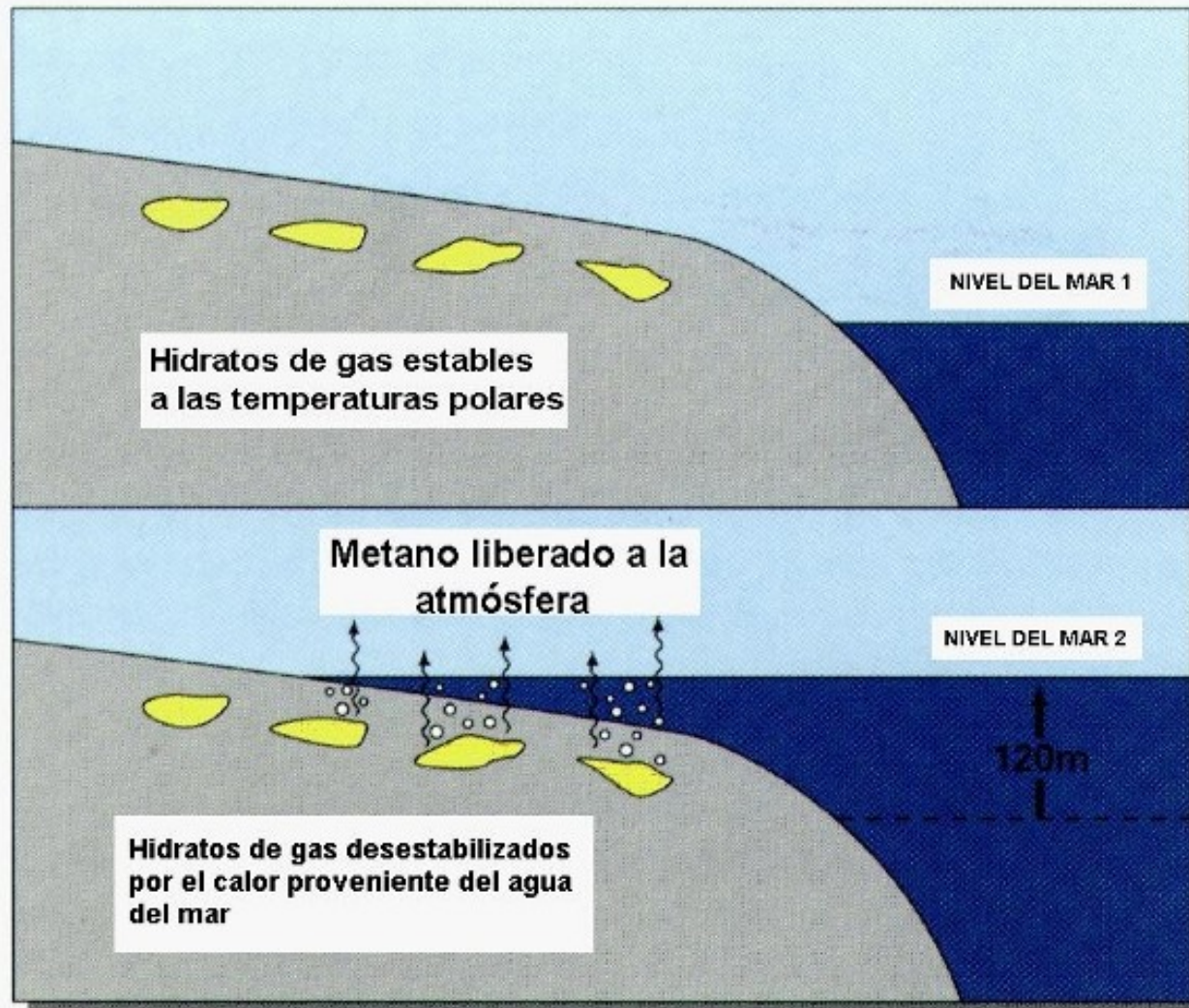
Relating

Dynamically connecting

Tracing with drawing, printing, sound etc.

Relating to thoughts and feelings

Dynamically connecting to physical experience
(by appealing to body memories)

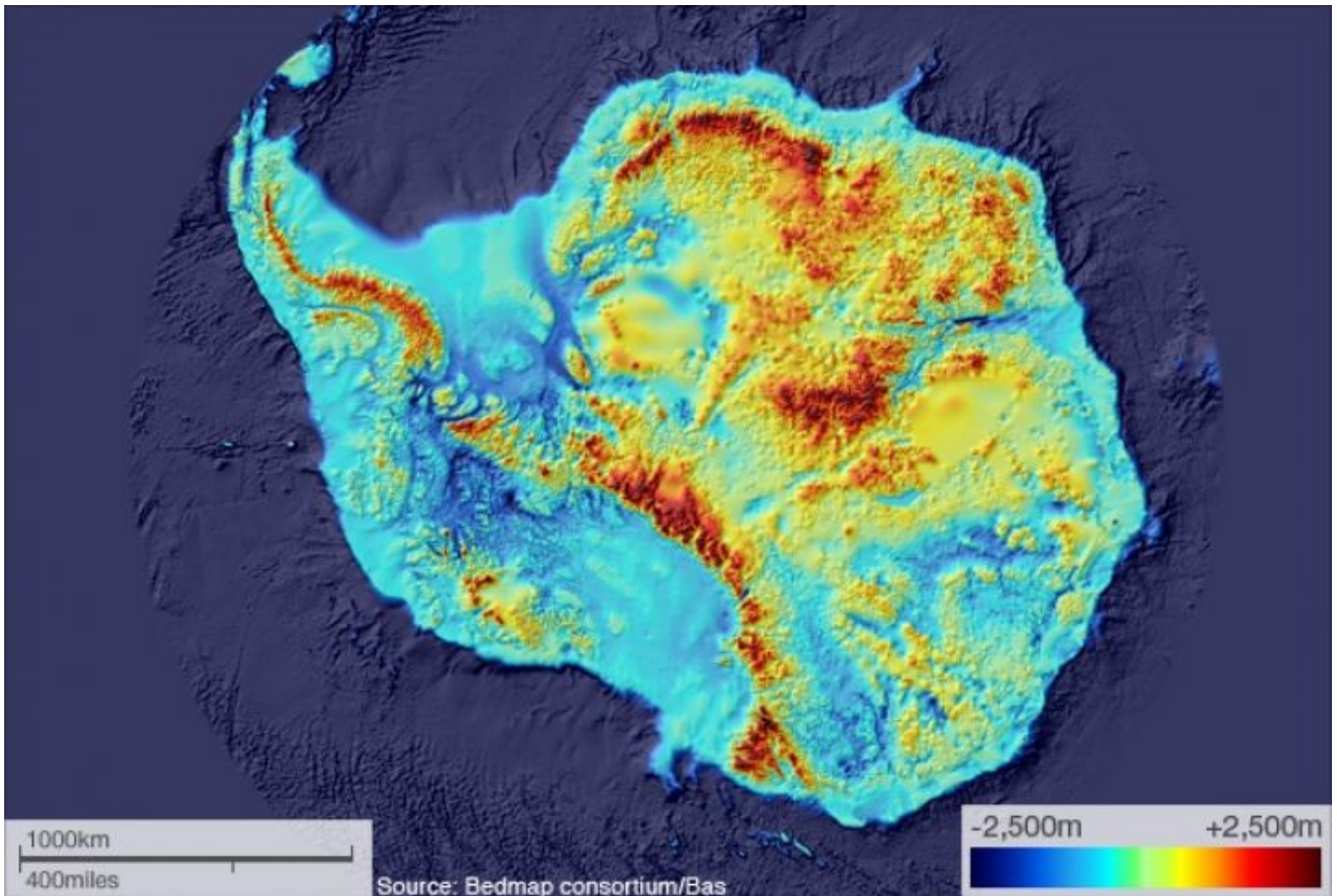


El ascenso del nivel del mar causa que el agua marina relativamente más caliente cubra las frías tierras polares antes emergidas. La desestabilización de los hidratos de gas contenidos dentro de los sedimentos ahora sumergidos, produce escapes de hidrocarburos a la atmósfera.



Tracing (metaphorically) flows of methane with lengths of tulle
Relating shapes and colours to feelings of threat
Dynamically connecting through movement and touch

Andrea Juan, Methane, video Installation, 2008



British Antarctic Survey, Antarctic bedrock, combined data sets, 2012

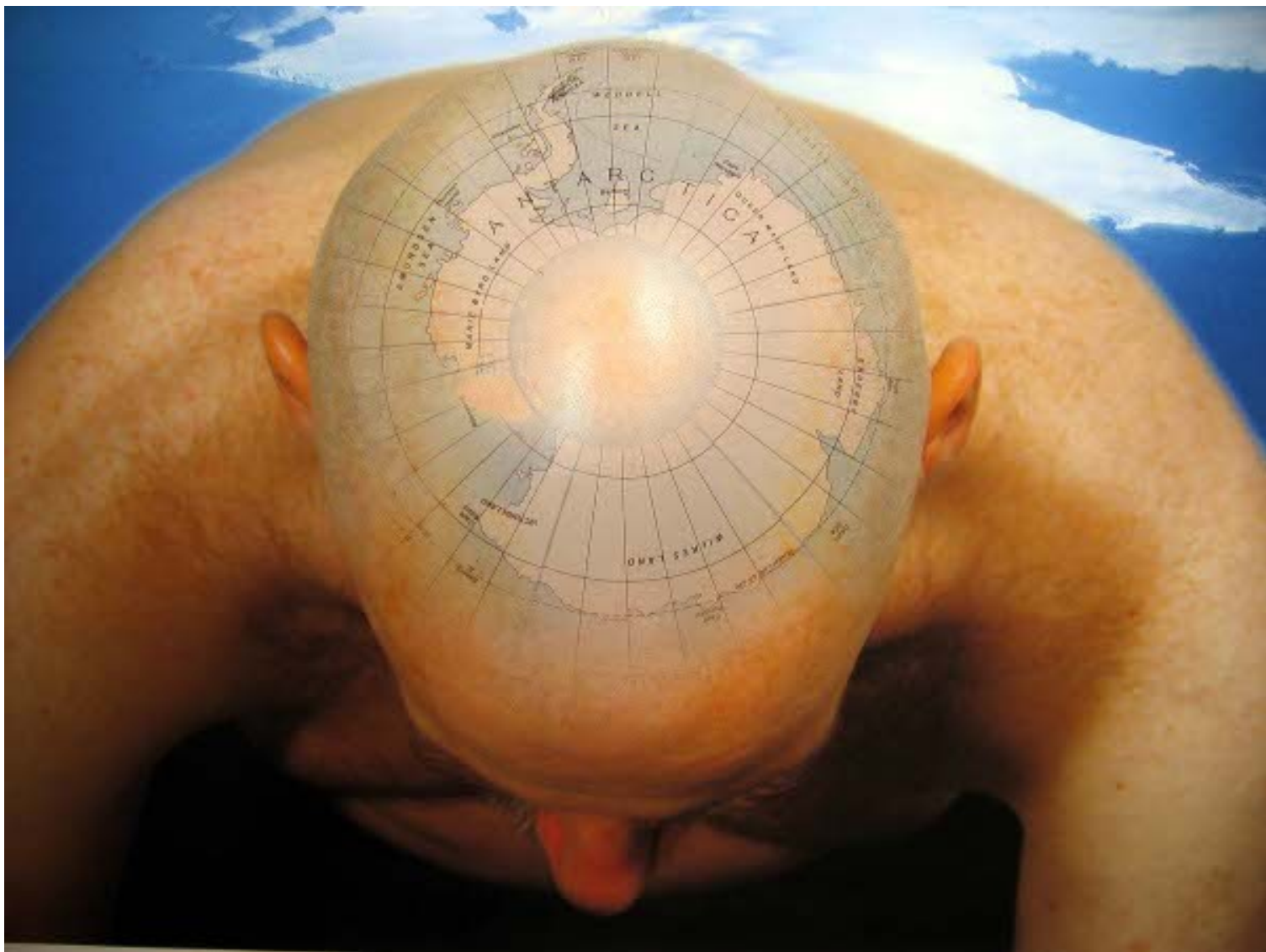


Tracing with fabric printing

Relating to feelings of maternal connection and moral responsibility

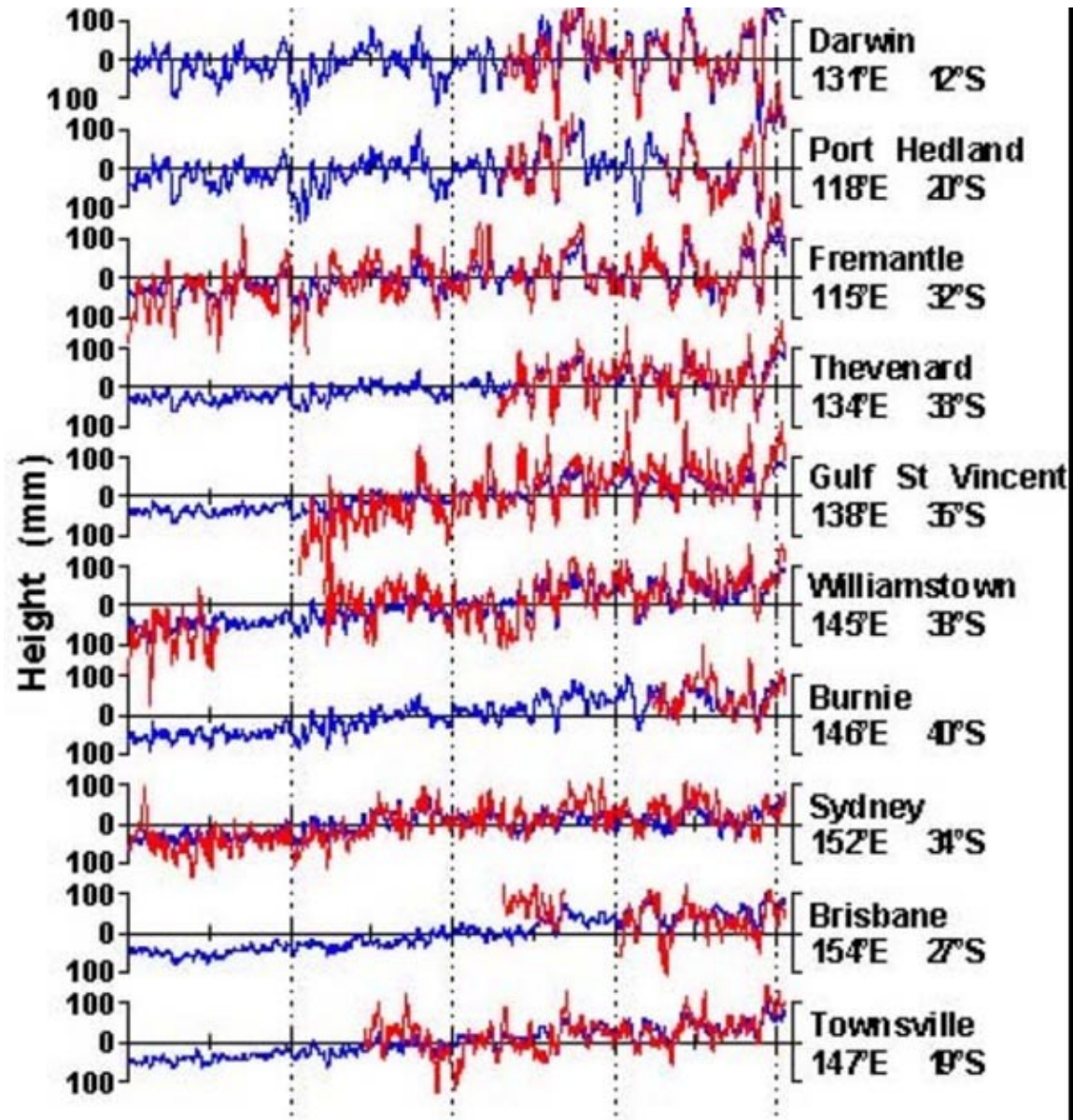
Dynamically connecting through spiral form and rhythmic placement of flags

Lorraine Beaulieu, Drapeaux (flags), Cyanotype fabric installation, 2008

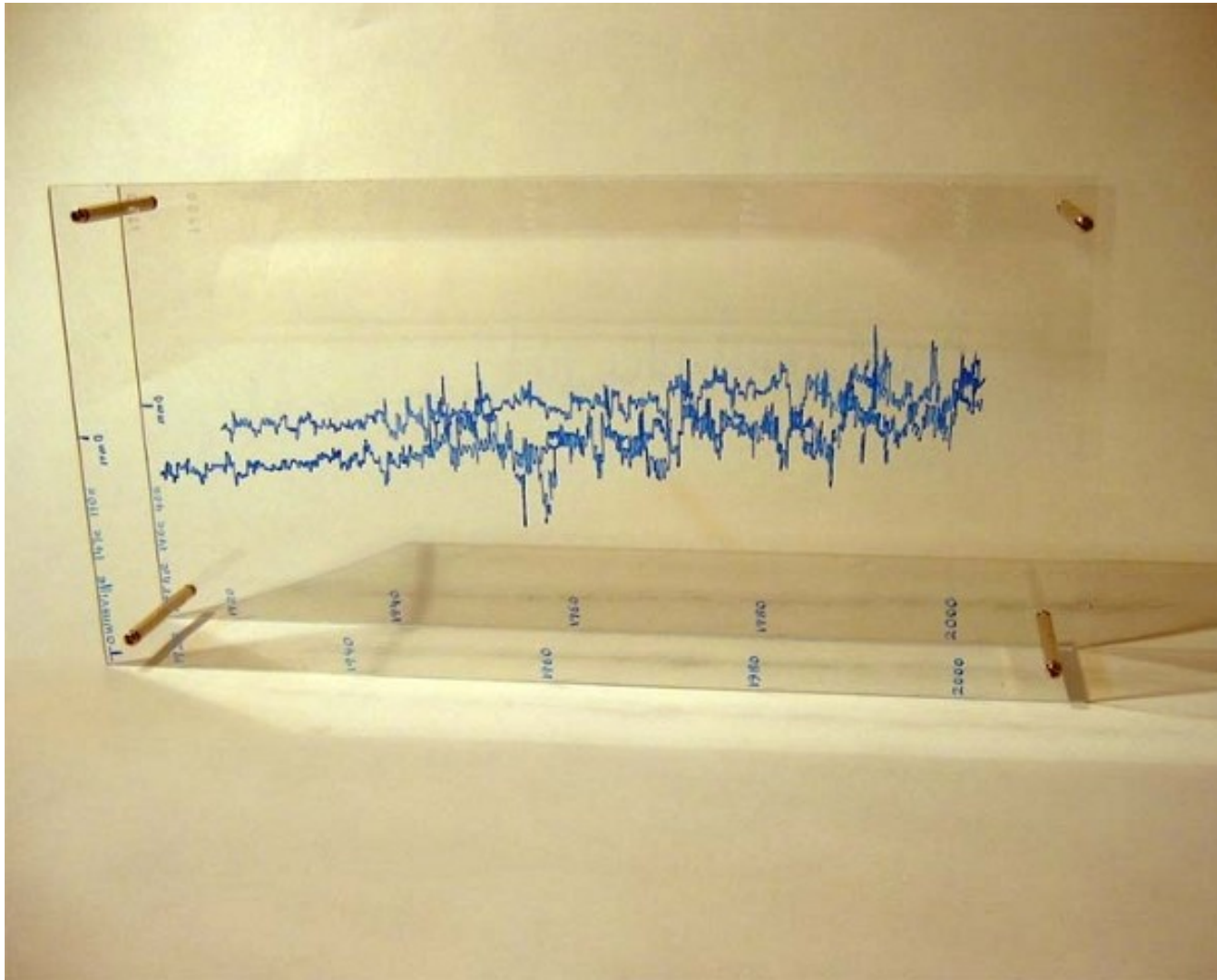


Tracing with drawing and colouring
Relating to feelings of disorientation and maternal responsibility
Dynamically connecting through spiral body gesture

*Philippe Boissonnet, Earth Mother is becoming Earth Child (En perdre le nord),
Digital photographic installation (detail), 2008*

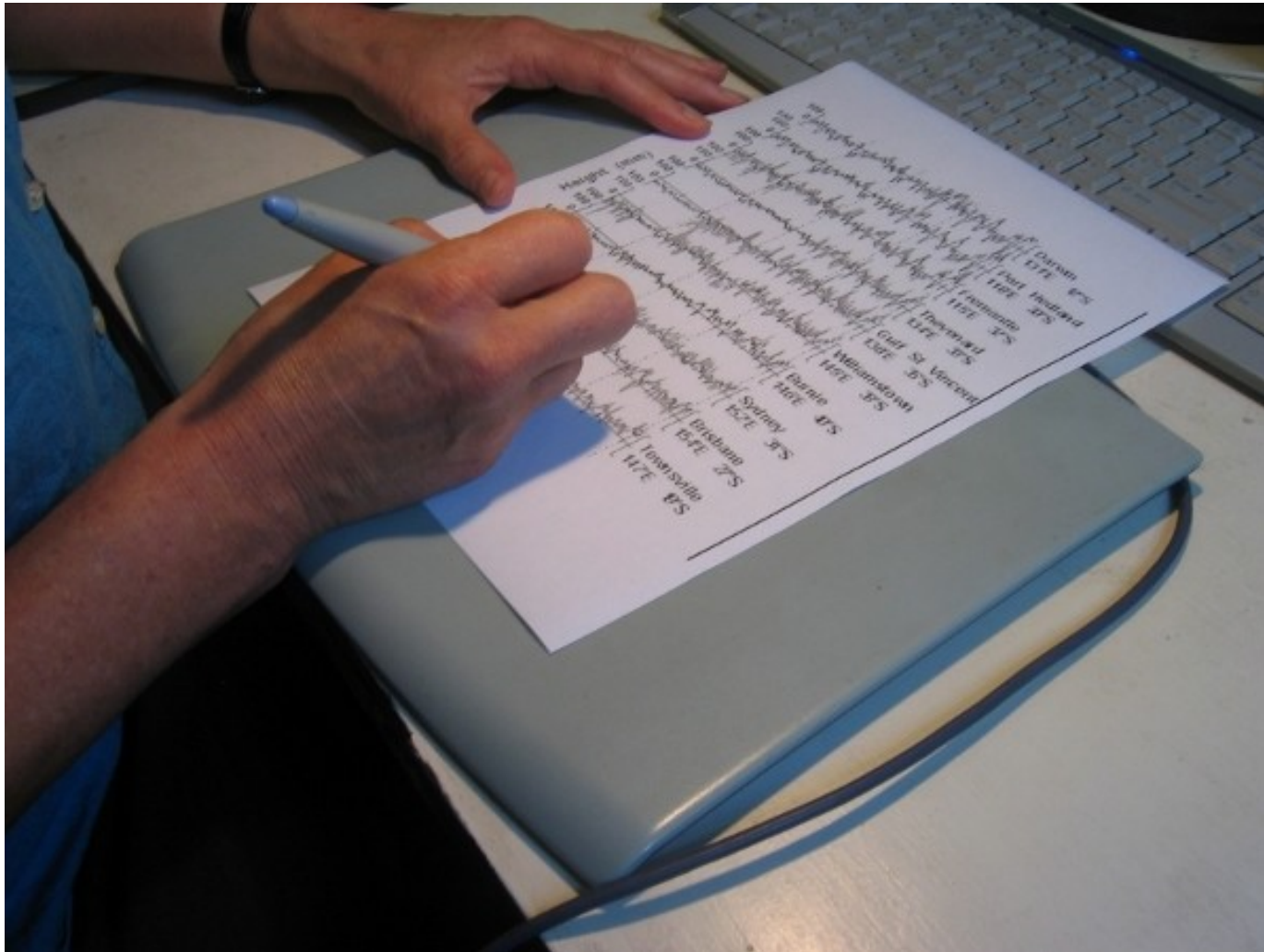


John Church et al., World Climate Research Program, Tide gauge data, 2007



Tracing with engraving and paint inlay
Relating lines and colours to observations of water

Lisa Roberts, Sea levels rising 01, engraved acrylic sheets, 2007



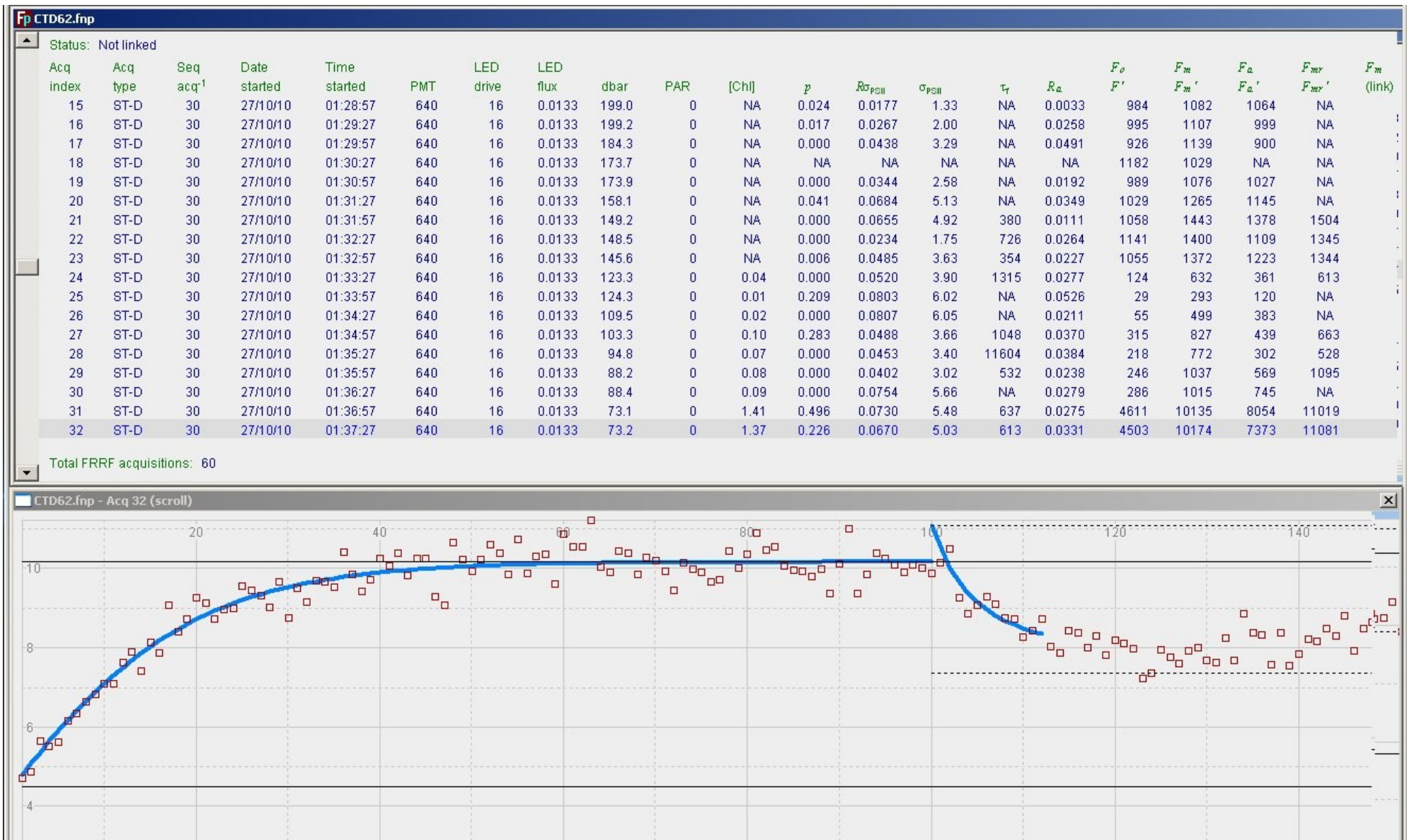
Tracing data on a Wacom drawing tablet with stylus, 2007

Animation: **Sea level rising**

Tracing with line drawing

Relating patterns to thoughts and feelings about invisible forces of change

Dynamically connecting through animated lines and rising pitch of sound



Data showing the 'sweet spot' (at about 70 m), where most algae live. Height (y axis) represents levels of light (intensity) emitted from algae in response to microsecond flashes of red light. C3, 2011

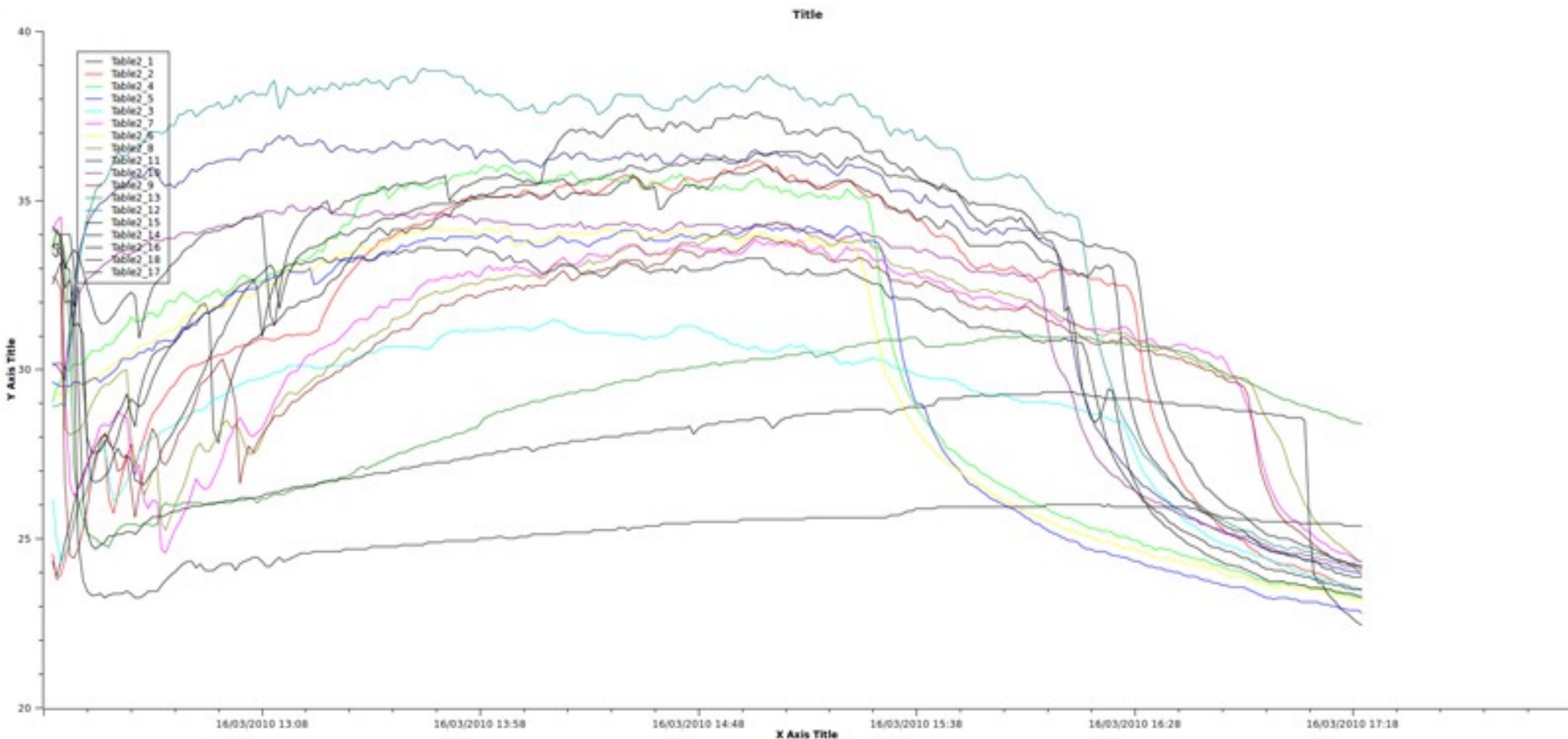


Tracing with engraving

Relating green and red colours to feelings about health and happiness

Dynamically connecting through touch and contrasting colours

Lisa Roberts, Algae happiness: Energy producing! Florescent acrylic, 2012



Data from thermo sensors on a rock platform at Bilgola, NSW, 16 March 2010 over five hours. Each coloured line represents 303 readings from a particular location on the platform, from 12:20 to 17:20 hrs. C3 2011



Neptune's necklace (*Hormosira Bankseii*)

Animation: **Algae dance to variable rhythms**

Tracing (metaphorically) with lines and sound rhythms
Relating to knowledge of change over longer time periods
Dynamically connecting through animated lines and shapes



Euphausia superba (Antarctic krill)



Tracing frame by frame with line drawings

So Kawaguchi, *Euphausia superba* (Antarctic krill) video data, 2010



Relating movement pattern to thoughts about chance connections
(Seeking moments in the 'dance' when the krill connect and disconnect)

Lisa Roberts, Krill mating dance sequence, Digital drawing, 2012

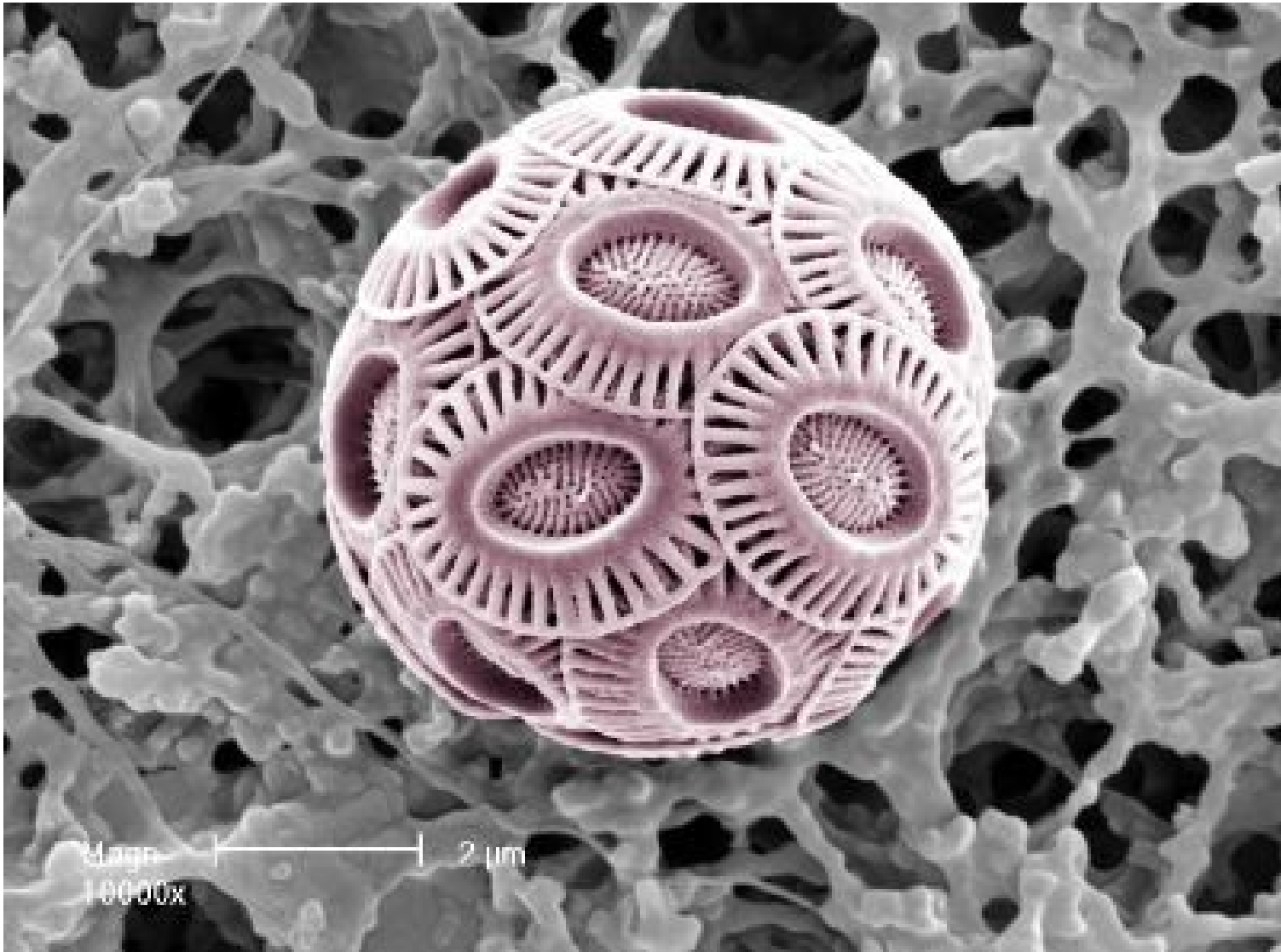


Relating a scientific theory to direct observation

Lisa Roberts, Krill mating dance sequence, Digital drawing, 2012

Animation: **Do krill have sex?**

Dynamically connecting through animated 'dance'



Marcus Geiser, Emliana-huxleyi, electron micrograph, 2002



Tracing (metaphorically) with 3D modelling
Relating circular patterns to cycles of change in nature
Dynamically connecting through visual rhythm and touch

Andrea Juan, Coccolithphorid, Object, 2010

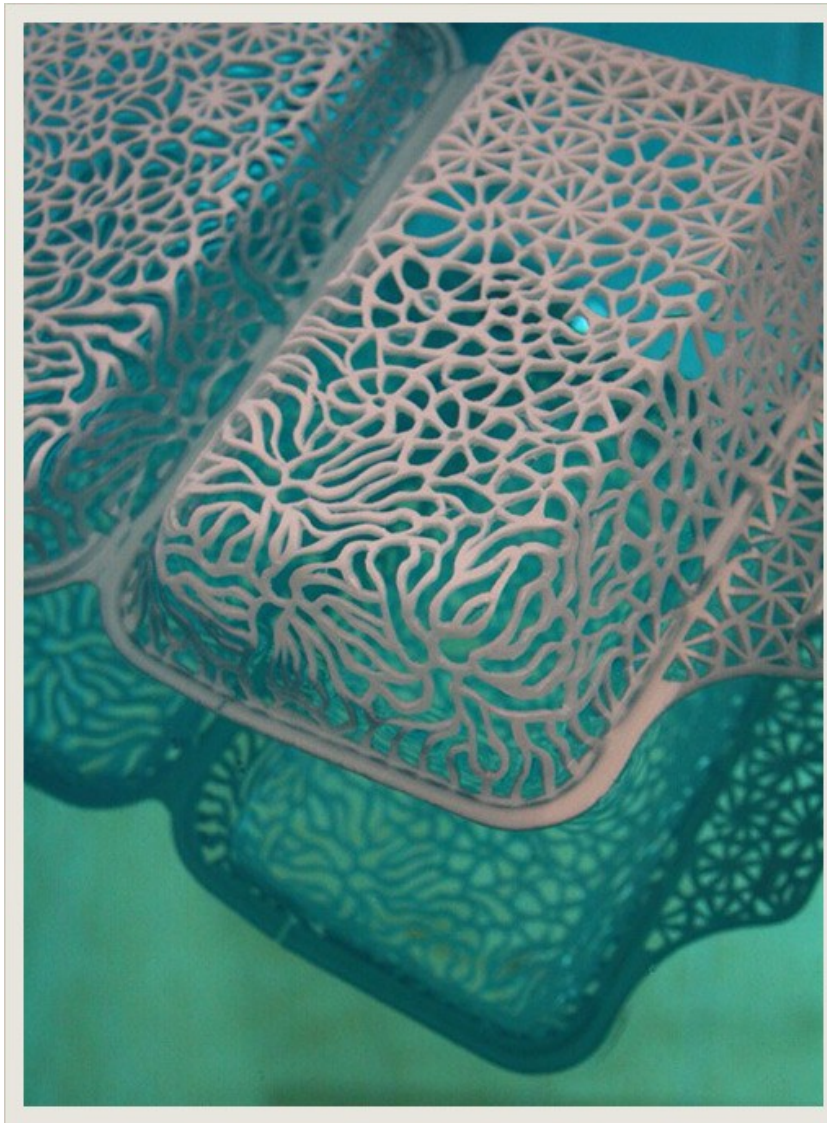


Tracing with engraving and paint inlay
Relating to thoughts about global warning and recycling
Dynamically connecting through touch and body memories of water
(drinking, swimming)

Lisa Roberts, Cool me Cocco, Recycled glass, 2008



Great Barrier Reef corals, Data unknown



Tracing with a knife

Relating coral patterns and found objects to global warning and recycling

Dynamically connecting through touch

Eveline Koliijn, Coral, Polystyrene foam, 2010



Tracing (metaphorically) with printing and folding
Relating to the evolution of patterns in coral
Dynamically connecting through touch and body memories of the sea

*Eveline Koliijn, Coral Kaleidocycle - floor plan and object,
Linocut, 2008*

How can YOU make sense of climate change?

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