



neither bug nor feature

flocking and a chronopoetics of programming

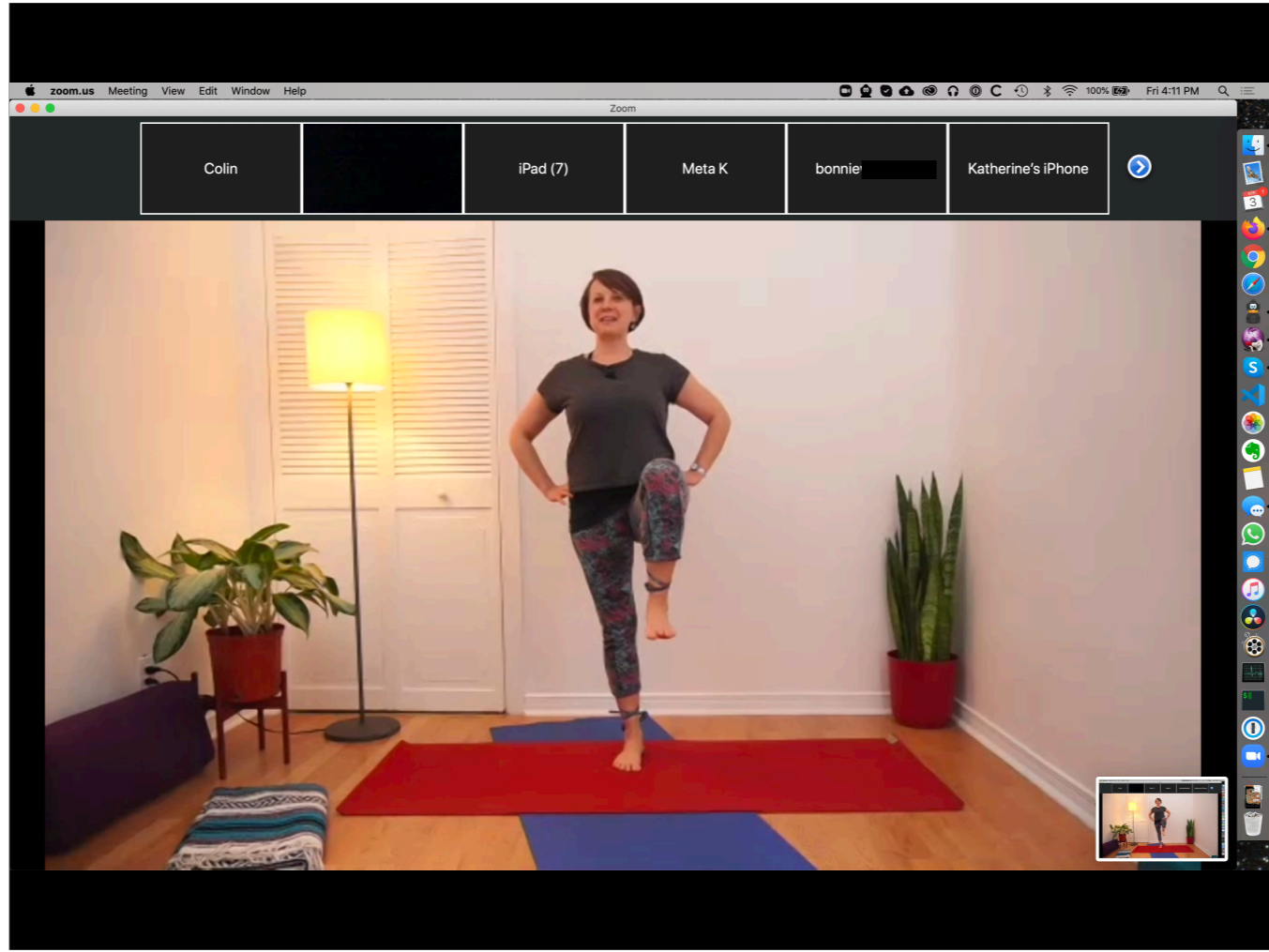
Colin Clark

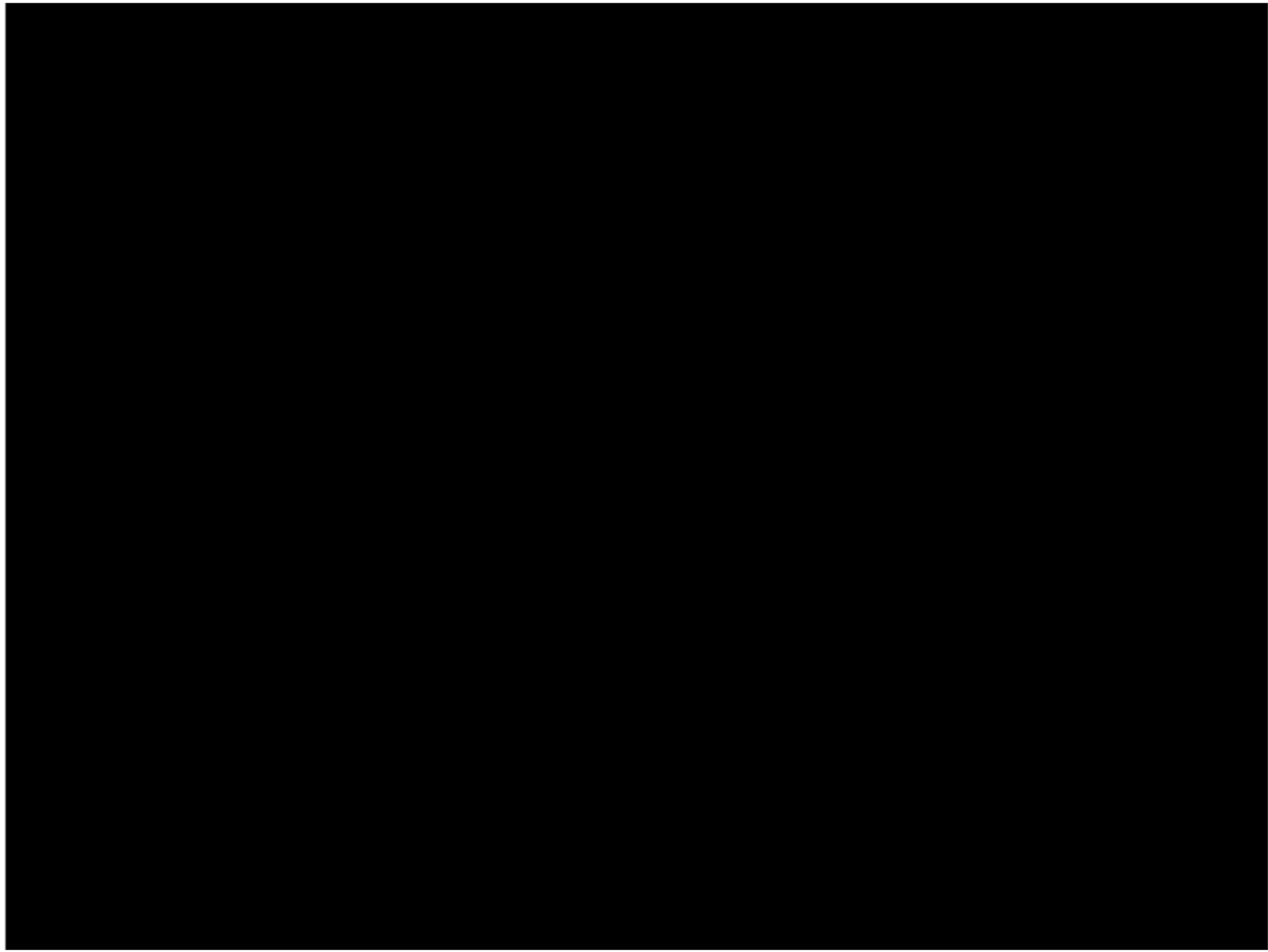
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"The effects of technology do not occur at the level of opinions or concepts, but **alter sense ratios** or **patterns of perception** steadily and without resistance."

Marshall McLuhan, *Understanding Media*

1. Pandemic Time





Technologies are time-givers, they produce new senses of time.

Yet programming itself speaks of time so rarely, and when it does it speaks in the voice of normativity—of accuracy and its reversal the glitch or lag. Programming's temporality is all messed up. So I think we need to seriously attend to computation's chronopoetics, to listen not only to the metronome and the foot-tap, binary success or failure, but to the often unnoticed phenomenological experience of computation's weird bends and flows.

“medial movement already in motion, composed through the relations across and between signaletic flows flowing.”

Anna Munster, Transmateriality: Towards an Energetics of Signal in Contemporary Mediatic Assemblages

Non-architectural artistic form, in motion and the result of the unfolding of temporal systems, in or out of time

Alter-montage: juxtapositions coming together, continuous and intermingling



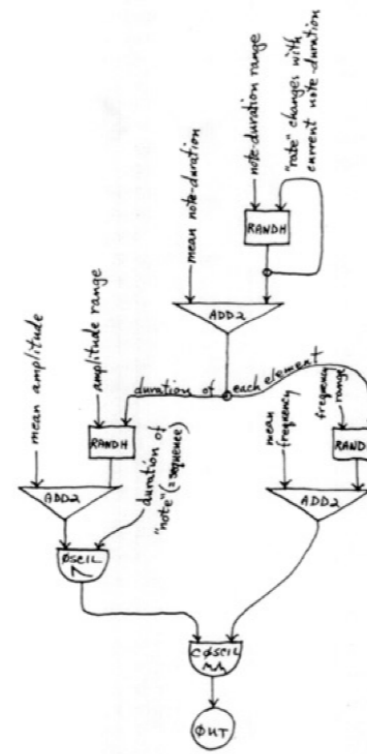
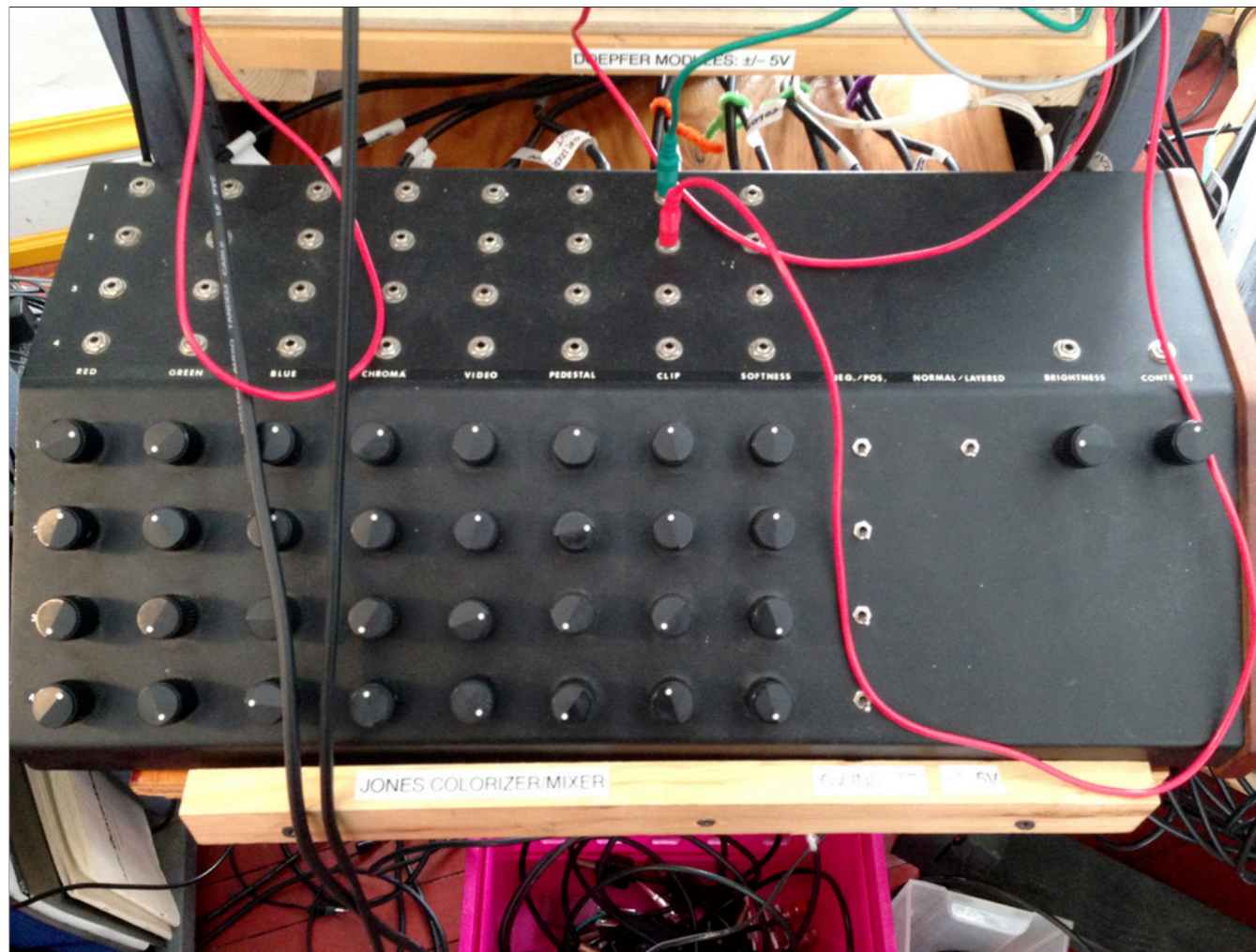


Figure 8. Instrument for generating random sequences.

Tenney, James. "Computer Music Experiences, 1961-1964" in *Electronic Music Reports* (1), 23-60, 1969.





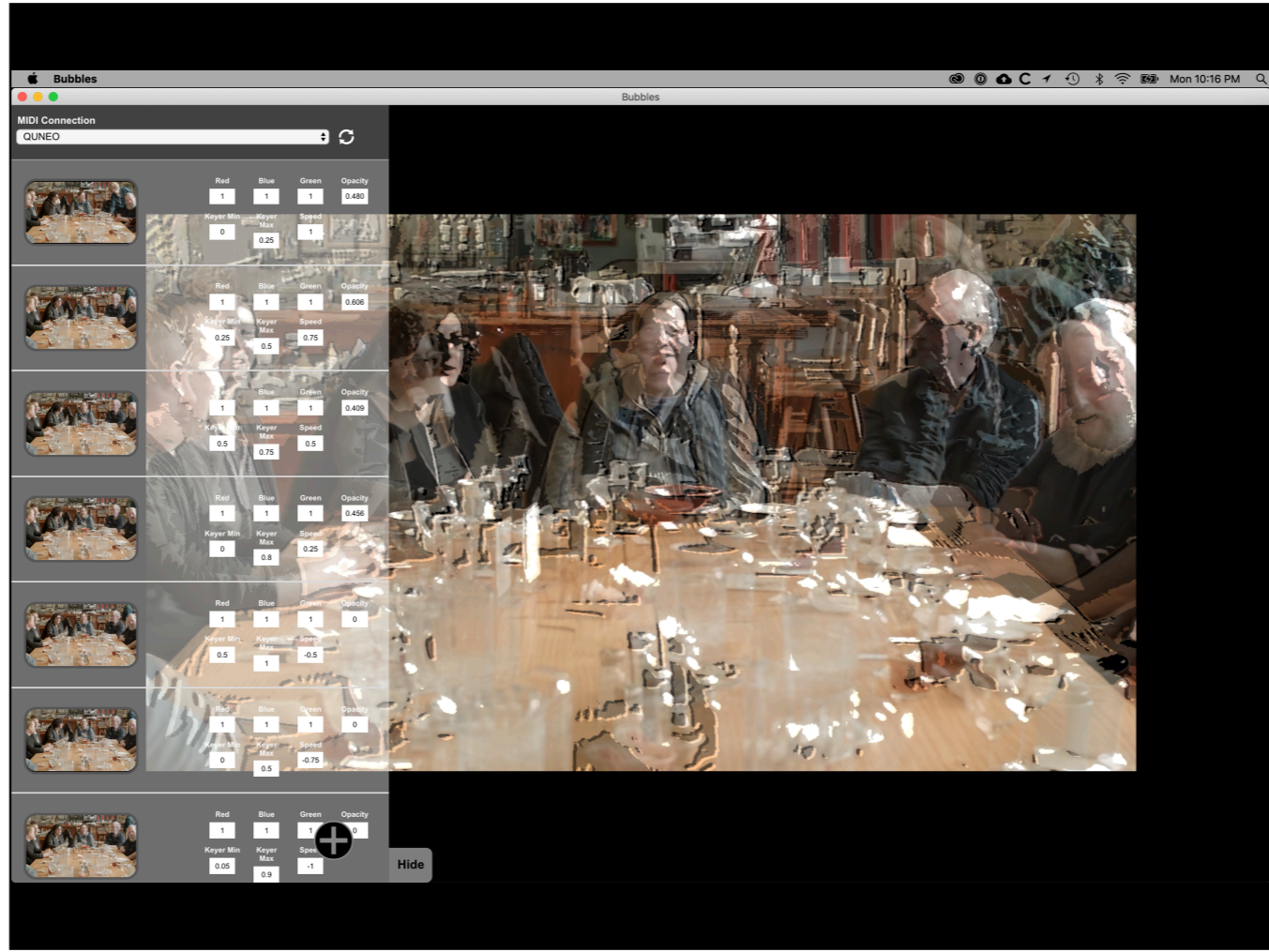
**Programming as a materially-bound
investigation, a daily practice...**

Demo: Granulator

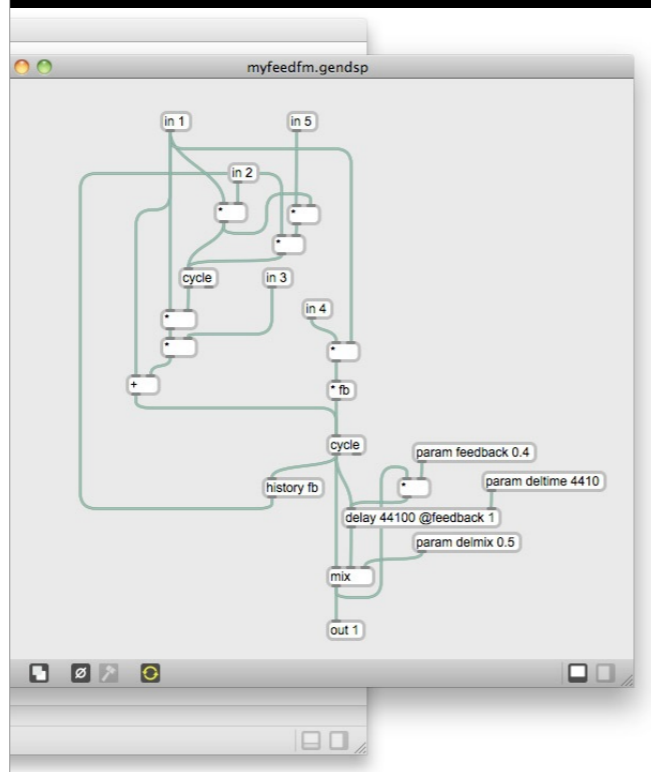
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1 {
2   "description": "Granulates a filtered sawtooth wave. Demo by Mayank Sangneria and Adam Tindale.",
3   "synthDef": {
4     "ugen": "flock.ugen.granulator",
5     "numGrains": {
6       "ugen": "flock.ugen.line",
7       "start": 1,
8       "end": 40,
9       "duration": 20
10    },
11    "grainDur": {
12      "ugen": "flock.ugen.line",
13      "start": 0.1,
14      "end": 0.005,
15      "duration": 100
16    },
17    "delayDur": 8,
18    "mul": 0.5,
19    "source": {
20      "ugen": "flock.ugen.filter.biquad.lp",
21      "freq": {
22        "ugen": "flock.ugen.sin",
23        "rate": "control",
24        "freq": {
25          "ugen": "flock.ugen.xLine",
26          "rate": "control",
27          "start": 0.7,
28          "end": 3000,
29          "duration": 60
30        },
31        "phase": 0,
32        "mul": 2000,
33        "add": 4000
34      },
35      "source": {
36        "ugen": "flock.ugen.lfSaw",
37        "freq": {
38          "ugen": "flock.ugen.sin",
39          "rate": "control",
40          "freq": 0.1,
41          "mul": 1000,
42          "add": 3000
43        },
44        "mul": 0.25
45      }
46    }
47  }
48 }

```

What if we could have different programmable interfaces on the same system?



```

SuperCollider File Session Edit View Language Help
dubstep1.scd
1 {s.waitForBoot{Ndef(\a).play:Ndef(\a,
2 {
3 var trig, freq, notes, wob, sweep, kickenv, kick, snare, swr, syn, bpm, x;
4 x = MouseX.kr(1, 4);
5
6
7 // START HERE:
8
9 bpm = 120;
10
11 notes = [40, 41, 28, 28, 28, 28, 27, 25, 35, 78];
12
13 trig = Impulse.kr(bpm/120);
14 freq = Demand.kr(trig, 0, Dkrand(notes, inf)).lag(0.25).min(128).poll(label: "note").midicp
15 swr = Demand.kr(trig, 0, Dseq([1, 6, 5, 2, 1, 2, 4, 8, 3, 3], inf));
16 sweep = LFTri.ar(swr).exprange(40, 3000);
17
18
19 // Here we make the wobble bass:
20 wob = Saw.ar(freq * [0.99, 1.01]).sum;
21 wob = LPF.ar(wob, sweep);
22 wob = Normaliser.ar(wob) * 0.8;
23 wob = wob + BPF.ar(wob, 1500, 2);
24 wob = wob + GVerb.ar(wob, 9, 0.7, 0.7, mul: 0.2);
25
26
27 // Here we add some drums:
28 kickenv = Decay.ar(T2A.ar(Demand.kr(Impulse.kr(bpm / 30), 0, Dseq([1, 0, 0, 0, 0, 1, 0,
29 1, 0, 0, 1, 0, 0, 0], inf)), 0.7);
30 kick = SinOsc.ar(40 + (kickenv * kickenv * kickenv * 200), 0.7 * kickenv).clip2;
31 snare = 3 * PinkNoise.ar(112) * Decay.ar(Impulse.ar(bpm / 240, 0.5), [0.4, 2], [1, 0.05]).sum;
32 snare = (snare + BPF.ar(4 * snare, 2000)).clip2;
33
34 // This line actually outputs the sound:
35 (wob + kick + snare).clip2;
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How could someone undo what I just did?

Can a system be changed after I've finished it?

Programming is a problem.

“In political terms, **prescriptive technologies** are designs for compliance... While we should not forget that these prescriptive technologies **are often exceedingly effective and efficient**, they come with an enormous social mortgage. The mortgage means that we live in a culture of compliance, that we are ever more **conditioned to accept orthodoxy as normal, and to accept that there is only one way of doing ‘it’.**”

Ursula Franklin, *The Real World of Technology*

Who made this, and why?

Who profits from its use or its propagation?

What labour and social relations does it assume, create, or reinforce?

What forms of user does it construct, and what values and assumptions are implicit in this construction?

What forms of privilege circulate within it?

How is consent voiced? Can it be revoked, reconsidered, or provided in non-binary ways?

How is trust conceived? Through transparency of actions and their impacts, or through branding?

What forms of ownership are available?

What models of governance and decision-making inhere?

“Nowadays we have to appreciate the reasons for picking **not the most powerful solution but the least powerful**. The reason for this is that **the less powerful the language, the more you can do** with the data stored in that language. If you write it in a simple declarative form, **anyone can write a program to analyze it in many ways.**”

Tim Berners-Lee, *Axioms of Web Architecture*, 1998

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{
  "synthDef": {
    "ugen": "flock.ugen.granulator",
    "numGrains": {
      "ugen": "flock.ugen.line",
      "start": 1,
      "end": 40,
      "duration": 20
    },
    "grainDur": {
      "ugen": "flock.ugen.line",
      "start": 0.1,
      "end": 0.005,
      "duration": 100
    },
    "delayDur": 8,
    "mul": 0.5,
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2. Of messages and media

“In a culture like ours, long accustomed to splitting and dividing all things as means of control, it is sometimes a shock to be reminded that, **in operational and practical fact, the medium is the message.** This is merely to say that **the personal and social consequences** of any medium... **result from the new scale that is introduced into our affairs** by each extension of ourselves, or by any new technology.”

Marshall McLuhan, *Understanding Media*

The message is a medium.



A 9x17 grid with columns labeled A through Q and rows labeled 1 through 9. The grid contains several icons: a robot head at (C,3), a planet with rings at (L,3), a speech bubble at (N,3), a planet with rings at (O,6), and a planet with a ring at (F,7). A teal bar at the bottom of the grid contains a toggle switch and a refresh icon.

Movements

Program

Start +

“The design should allow **the effect of any expression by one author** to be **replaced** by an additional expression **by a further author.**”

Basman, Lewis, Clark, “The Open Authorial Principle”

On not feeling alone, even when we're on our own

I dream for my artistic tools, and my own computational work, that they may modestly connect people—**first, to connect my current artistic self to my past and future selves, supporting a gradual evolution from one piece to the next, using the programming of past works directly as the medium in which to grow new ones.** And I dream that the idea of reference may grow into a concept of computation that Basman refers to as **“knowledge, with behaviour” or “active knowledge” — artistic reference as more than simple quotation,** or sampling, but integral referential being—**a work of the past, or a work of another, woven inside this new work, with threads we can still pull.**

3. Refusal and Desire

A refusal to use abstract models.



Taking Care of Others



Taking Care of Others

by Melody Hill told to her by her father, Ephraim Hill

Taking Care of Others

A story from Melody Hill as told to her by her father, Ephraim Hill.

When the people were still getting around in wagons, there was a family who needed food before a snowstorm. The husband told his wife he would make a trip to the store to get food. The husband told his wife and children to stay home and she agreed. The husband left.



“The Academy... already domesticates, denies, and dominates other forms of knowledge... **It sets limits, but disguises itself as limitless.** Academic knowledge is particular and privileged, yet **disguises itself as universal and common**; it is settler colonial; it already refuses desire; it sets limits to potentially dangerous Other knowledges; it does so through erasure, but importantly also through *inclusion*, and **its own imperceptibility.**

Eve Tuck and K. Wayne Yang, “R-Words: Refusing Research”

Introduction to co-design and community-led co-design

What is co-design?

Co-design is a process of "designing with", rather than "designing for". Those who are most impacted by the design, especially those with layered and complex needs, are involved in the design process from its earliest stages, are engaged throughout the process, and directly contribute to the creation of solutions that meet their unique needs. Participants are not involved as research subjects or consultants, rather as designers engaged in active and sustained collaboration.

Co-design can be undertaken at any stage of the design, and it encourages and makes space for a non-linear approach. The diagram below describes what co-design can look like at different stages of the design process and shows how one might take a non-linear path through those stages. No matter where you are beginning, or where you want to go, you can use co-design to make your design process more inclusive.



Participation, still, isn't enough.

Ownership.

Ownership.

of research processes

of decisions

of data and its effects

of platforms

A spectre is haunting the world—the spectre of software

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