SYSTEMS

is an album archiving written and sonic explorations of various analog and digital systems that I use during the process of designing sound, as an attempt to demystify some synth esoteria, and a continuation of the story of the data bird, amongst other poems.

Listening Instructions (suggested):
Listen to this album in full or in smaller periods of time, in direct sunlight, or a low lit environment, preferably with headphones, or speakers spread far apart. Sit or lay down in a comfortable place and position. Have your favorite snacks or beverages nearby for occasional consumption. Read the track stories as the corresponding tracks play.

Meditation:

Internet meditation interlude entrance opening introduction cleansing clear cmd delete.

Bath:

A analog bubblebath with warm water and starburst candy bath bomb, with non mainstream super esoteric ambient music playing, and fruit loops scented candles, the water reaches your body temperature and you close your eyes and start to float away, on cotton candy clouds, bubbles begin to sound larger than life. The internet seems far, far away. The concept of dirt is erased from your memory. Too many things are erased from your memory, but you're okay with it, because the only direction is forwards.

digitamblamAh:

Finally some quiet, a taxi. Steady travel. At night. With a gin and tonic, chauffeured. Take me to a black tie event. With normal people. Where I can't make out faces. A place where I can ignore important tasks. And time doesn't move. Dragged by the hand into an endless hallway. Escaping with someone, anyone. If I could fill all my bags with the items on these walls I would. And fill a room with infinite things. A hoarder's dream. But just to look at. I have a separate room for the things I used. Stumbling. She's walking maybe a bit too fast.

i get too cold drawn some that:

A song in silence: Its so I get it's so i get its for to go on or not its so i get it's there you were cold in it call the word hold to he had night after as. A thought about the idea of. What do I you actually want? Inherently peaceful. In its simplicity.

jazz beat in soil (movement 1 and 2):

The jazz bar on ┼⚐⋈⋈ ≡⚐⅄ and opcod 19287 off of conduit Jester. A quintet for romance, in two movements. With a Paloma. Movement two suggests a red, 2021 preferably. And filet mignon. I can afford i t, for both of us.

pearls:

Back to work, wired. I'm dating the boss's daughter, I gotta be there on time. Little does he know she's cheating on me. What a scandal. With Cathy in HR. I knew she was a lesbian. You can't sneak out an air lock, and she was bad at excuses. Oh your book club, all the way in sector G. I haven't said anything about it yet. This job pays well. And Cathy is 7 feet tall. I'm only 2 feet 4 inches and 45 centimeters. I can't compete. She'll punt me. As long as I get my numbers in this quarter. I'll quit. I'll have a cig now. I never thought to go out on the balcony. No one ever does. Probably because we work on the 596th floor. The air is dry up here. I think I'll go out for a cig now. The whole office won't get sucked out through this door once I open it right haha. [the entire office did indeed implode in on itself through the glass pane door the second it was pulled inward.] Well... definitely getting fired now.

Pleasantly drunk, with wings:

A return to some home. A dinner at someone else's. With a beer, driven in a car with many miles. Those swirly things you see when you get up too fast, haven't eaten all day, or stare at a perfect blue sky, have a sound. An awkward couple, yet charming. Retired.

swih aybz intersexon:

You find yourself millenia deep in incomprehensible alien data simplex intersections, figures of light speed past and begin to intimidate you. A confrontation. With only words, a new story. With noise and absence of time. A feeling of longing. A nostalgia of the unknown. An afrofuturist retrofuture. Dark in headlights. Frozen, melting and falling infinitely. Limbo, traveling.

All of your technology will function properly this mercury retrograde:

Place 10 fruity pebbles on your phone and laptop every morning and night for good luck with technology this mercury retrograde. Something else that might help is suspending a bag of your technology above a large body of water for 5 seconds, or bringing your technology at least 1000 ft above sea level.

Systems Technical Guide:

Meditation:

The piano part in this patch was composed using Teletype. Teletype is sending notes to the Disting EX Multisample Algorithm (mode) playing the LABS Piano Multisample library. An example code for this would be:

```
EX.N N * ? TOSS 5 9 RND 5
```

which says send note 5 (F) or 9 (A) with a random multiple of 5. Teletype sends random timing using the code:

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DEL RRND 200 8000: $ $
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which calls the script again with a random time between 200 milliseconds and 8 seconds. The piano also goes into the Chloe module, doing pt2399 delay. I am modulating the delay time by hand. The vocal is processed using the Codec plugin/vst in Ableton, based off of bad internet bandwidth connections. The vocal has a simple eq and gate before the processing to clean it up. The vocal is also processed by the RickBrownStutter Max For Live device. There is an auto panner on the track panning it from left to right sometimes.

Bath:

The Rollz section of my Rollz5 is patched to send sputtering pulses into MengQi Wingie2, whose output is sent back to the Ultrasound Filters section of the Rollz5 for filter processing. The output of the filters is sent to the L and R input of the delay on the Cocoquantus, which is set up as a simple delay. A slow moving and frequency modulated oscillator from the Quantussy section of the Cocoquantus is sent to the volume of the left delay, and a copy of this signal is sent out to the inverso volume of the right delay, creating undulating fast and slow panning.

digitamblamAh:

The Lorre Mille Double Knot creates binary CMOS sequences triggering left and right oscillators with short decays. The first shift registers voltage information is sent to an fm input on one of the oscillators on the Cocoquantus at audio rate. This oscillator is sent to the left and right delay input as the sound source. The other shift registers voltage out is sent to the CV input for the left and right delay times. The Double Knot goes into the Wingie 2 before the Cocoquantus resulting in some resonating tones throughout the track.

i get too cold drawn some that:

My voice is looped on two tracks into a 6 second tape loop. I sing into the mic of the Cocoquantus and have my delay times set differently, record into the buffers occasionally and layer notes by

inserting into these buffers in both long and short periods of time. Sometimes I pitch the recorded buffer upwards.

jazz beat in soil (movement 1 and 2):

This patch is oriented around coalescence M4L plugin that chops and sorts samples that can be triggered via MIDI. I dragged a few Deadmou5 songs into coalescence which chopped them up and sorted them by timbre, assigning certain MIDI notes to certain timbres, so that I can use the plugin as my drum rack. I am triggering these different chopped drum sections with MIDI notes from Orca. Orca is also sending MIDI to a M4L clone of plaits, whose all parameters are being changed with every MIDI note received using Probee (M4L) (But sometimes I also use expression control, which comes with ableton). Both the drum track and synth track have lots of effects processing, mostly granular, stutter effects and reverb. Some techniques I use to clean up the sound is sidechaining the synth track to the bass of the drum track, so the synth ducks when there's bass present from the drum track. Sometimes I split the bands of the drum track in order to put an envelope follower on the bass that I can send to a notch filter on the synth track or to duck the reverb wetness of a synth track (these are more present on iteration 2).

pearls:

Orca is the main brain for the sequence, sending MIDI note and random tempo information to the operator plugin in ableton. Operator levels and decay times are modulated randomly at every MIDI note Probee. Reverb dry/wet is modulated randomly using Probee. The kick is being triggered by Orca, and sidechained to the synth.

pleasantly drunk, with wings:

Random pulses and wind from Shbobo Shnth are sent to resonate Wingie, who goes into the Cocoquantus, with different delays for left and right, creating pseudo reverb.

swih aybz:

In this ppooll patch a clone of benjolin is the main sound source. It's randomly modulated and sent to a reverb. The reverb output is sent to 2 filters both set to notch/band reject and their cutoffs are modulated by two slow moving LFOs. These filters are sent directly to the mixer. The reverb was also sent to a spectral freeze module that froze the reverb and that is being sent to the mixer as well for a frozen drone of a tone from the reverb.

All of your technology will function properly this mercury retrograde:

Double Knot is the main brain of this patch. It's set up to be two runglers by using one oscillator to send to the clock of the first shift register and the other oscillator to the date in of the shift register and the opposite oscillators configured for the second shift register. The voltage out of these oscillators are going to Teletype which is converting the voltage into MIDI notes. One of the on/off binary outs of the first shift register is triggering a script on teletype that sends that MIDI note to wingie. The output of double knot, which is a very short decal voltage pulse, as the oscillators are basically LFOs used for timing, is going into winige as an exciter, but we don't hear the pulses themselves until the end of the track. Other pulse outputs from the double knot are triggering an envelope for a kick and hi hat. The voltage from the second shift register is controlling the decay and timbre of the hi hat. On the ER301 sound computer there is a dub looper after the hi hat and kick, and a mixer with a grain stretch algorithm that's slightly pitched up. A random voltage from stages controls the speed of the grain stretch, which is pulled from the buffer of the dub looper. Vocals from my laptop are being sent over bluetooth to x1l3 monolith, which also goes into the buffer before the grain stretch.

Wingie goes into Cocoquantus which is set up as a simple left and right delay. The delay time is modulated slightly by pulses from the shift register of the double knot, pitching the delayed content upwards with pulses sometimes. The skip input of the delays is modulated by the voltage from the second shift register, skipping through the recorded content of the buffer. The flip input of the delays is modulated by an oscillator from the Quantussy section of the Cocoquantus, reversing the live delay content sometimes. The volume of the left and right in from the double knot is also being modulated by a FMed oscillator from the Quantussy section of the Cocoquantus. There is a little bit of reverb on the Cocoquantus from the ER301.

Glossary of esoteric terms:

Benjolin: The Benjolin is a chaos synth with two oscillators, a filter and a feedback system. This gives a very characteristic sound, controlled by a built-in sequencer that operates according to chaotic principles.
Chloe: Mono vacuum tube/valve overdrive / multimode filter / lofi pt2399 delay with filtering / low pass gate eurorack module

Coalescence: Coalescence is a Max For Live instrument. It is a concatenative multi-sampler that uses machine learning (SOM neural network) to organize similar sample slices into clusters based on a chosen spectral feature. There are three playback modes that take advantage of these clusters in various ways: Point, Rings, and Paths. Additionally, external audio input can be routed for modulations and to control what audio slices play based on its similarity. All of these combined with a robust modulation system makes Coalescence one beast of a compact sampler for many different situations!

Cocoquantus: (Peter Blasser) The CocoQuantus is a device by Ciat-Lonbarde composed of two Coco modules (8 bit digital delays) and a central "Quantussy" analog brain (nabra).

CV (Control Voltage): Sometimes abbreviated CV, Control Voltage is a DC electrical signal used to manipulate the values of components in analog circuits. Control voltages are used in numerous ways in many different types of electronic circuits for all sorts of purposes. A few examples germane to music technology: If you send a specific electrical voltage to a module of an analog synthesizer (such as an ADSR envelope generator), you can specify what you want the module to do (perhaps lengthen the decay time). In a mixer and other audio circuit that uses a voltage-controlled amplifier (VCA), a DC voltage can be used to set the gain of the VCA. This is applicable for things like compressors and gates, where the DC voltage may either be a signal proportional to the audio level the devices are acting upon, or could be from some other source. But it also applies to VCA-style mixing automation systems, where a control voltage is set by the user (via some interface, but usually faders) to determine and subsequently log the desired levels in the mixer at specific points in time.

Disting EX: The disting EX is a multifunction Eurorack module

Double Knot: The Double Knot v3 is a small generative synthesizer with two voices and corresponding sequencers. This instrument has a simple architecture which is capable of a wide variety of sounds, including rhythms and drum patterns or textural and grating noise sounds. The interface is made up of knobs, switches, and banana plugs for patching. The two voices of this device each consist of a triangle/square wave oscillator, a shift register sequencer, an enveloper, and a voltage controlled amplifier. A clock sets the tempo of the shift registers. The voices of the Double Knot are pre-wired, in a linear chain of functional blocks. The patch points are available to route modulations, influencing the simple linear voices. The game of this device is to investigate the relationships between the elements of the synth using the knobs, switches and patch-points.

Er301 Sound Computer: The ER-301 is a voltage-controllable canvas for digital signal processing algorithms. One of the many characteristics that attracted me to modular synthesizers is that they enabled me to make the kind of music that I love away from the computer. However, not all digital audio tools can be elegantly and efficiently realized in a dedicated hardware form. So, I either had to deny myself those tools, or go to the computer.

FM (Frequency Modulation): Frequency Modulation (FM) is the encoding of information in a carrier wave by changing the instantaneous frequency of the wave. FM technology is widely used in the fields of computing, telecommunications, and signal processing.

Granular Synthesis: Granular synthesis is a sound synthesis method that operates on the microsound time scale. It is based on the same principle as sampling. However, the samples are split into small pieces of around 1 to 100 ms in duration. These small pieces are called grains. Multiple grains may be layered on top of each other, and may play at different speeds, phases, volume, and frequency, among other parameters. At low speeds of playback, the result is a kind of soundscape, often described as a cloud, that is manipulatable in a manner unlike that for natural sound sampling or other synthesis techniques. At high speeds, the result is heard as a note or notes of a novel timbre. By varying the waveform, envelope, duration, spatial position, and density of the grains, many different sounds can be produced.

Max For Live: Max for Live is a platform to build your own instruments and effects, tools for live performance and visuals, and much more.

Meng Qi WIngie2: Wingie2 is a handheld stereo resonator with onboard microphones that doubles as a development platform. It allows you to interact with and enrich sounds from instruments and vocals as well as the sonic environment around you.

Midi: Musical Instrument Digital Interface (MIDI) is a standard to transmit and store music, originally designed for digital music synthesizers. MIDI does not transmit recorded sounds. Instead, it includes musical notes, timings and pitch information, which the receiving device uses to play music from its own sound library.

Modulation: Modulation is the application of AC control voltage from a VCO, LFO (Low Frequency Oscillator) or noise source to other synthesis parameters, such as frequency, filter c.o.f., filter Q amount, amplitude, or pulse width. The modulating module providing the oscillating control voltage is known as the modulator.

Multisample: A group of samples organized in a musically relevant way. For example, most piano samples are actually made up of many different samples. There are usually at least 8 (sometimes many more) different samples across the keyboard, and in many cases there are samples of different velocities and so on.

Orca: Orca is a two-dimensional esoteric programming language in which every letter of the alphabet is an operator, where lowercase letters operate on bang, uppercase letters operate each frame.Orca is an esoteric programming language designed to quickly create procedural sequencers, in which every letter of the alphabet is an operation, where lowercase letters operate on bang, uppercase letters operate each frame. This application is not a synthesizer, but a livecoding environment capable of sending MIDI, OSC & UDP to your audio/visual interfaces, like Ableton, Renoise, VCV Rack or SuperCollider.

Patch: An system, configuration or setting usually for a modular synthesizer that determines its sound or the way it behaves. Usually physically with patching cables.

ppooll: is a digital signal processing (DSP) environment for Max/MSP. It's a versatile, fully customizable toolkit that facilitates audio manipulation, granular synthesis, live performance and improvisation, modular networking, ambisonics and much more.

Probee: Probee is a free random generator triggered by MIDI notes. Everytime a note is played either via the computer keyboard, a MIDI clip in Live or an external keyboard, Probee will create 6 different random values.

Quantussy: (Peter Blasser) The Quantussy is a five (5) petaled flower, each petal with oscirator, that creates a rhythm, that triggers quantizations of the movements of the other four oscirators. The Quantussy is thus both based on five (5), but four(4)... and its name also refers to Quantum Physics through its unique "double quantization" of angular momentum. Running at low frequencies, the Quantussy is intended to provide ample modulations for the various functions of the COCOs, through inputs "FLIP", "SKIP", and "SP.AF", or "Speed Affect". The Quantussy petals can also run at audio frequencies, as well as "Balcium" frequencies, depending on a toggle switch.

Rollz5: (Peter Blasser) Rollz5 creates organic rhythms out of geometrical forms. A future direction is to create electronic sound devices based on the platonic solids and other 3-D topographies. I intended to confront the notion of "drum machine", which implies the sterile regimentation of time, and transform it into a collection of organic flows generated by geometrical forms. These forms and their accompanying filters can be switched, wired, or touched; the final manifestations range from a small preset switch-box, a squeezable spike-dome, or a traditional modular.

Rungler: The purpose of the rungler is to create short stepped patterns of variable length and speed. One could categorize the circuit somewhere halfway between a plain S&H and a shift register-based pseudorandom generator. It needs two frequency sources to work and basically creates a complex interference pattern that can be fed back into the frequency parameters of the driving oscillators to create an unlimited amount of havoc.

Shift Register: A shift register is a type of digital circuit using a cascade of flip-flops where the output of one flip-flop is connected to the input of the next. They share a single clock signal, which causes the data stored in the system to shift from one location to the next.

Teletype: Algorithmic ecosystem: a dynamic, musical event triggering platform for eurorack modular.

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