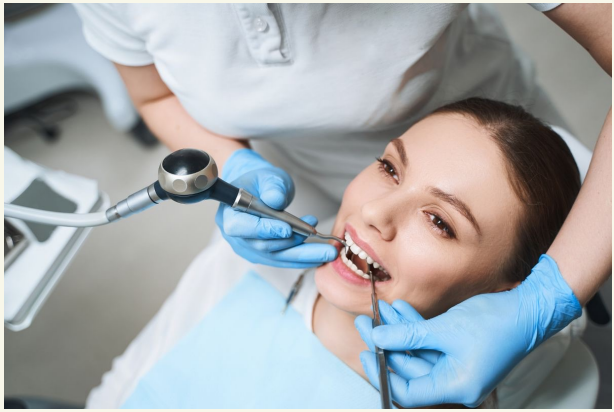
MISTAKE NO. 1



a retrospective composition of this week's mistakes and some philosophical rambling presented as yet another mistake

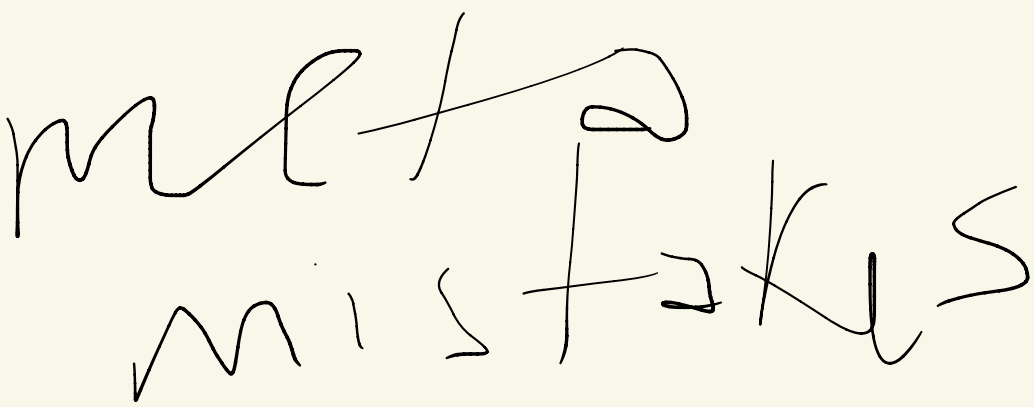
the great mistake: my first cavity

why this feels like such a mistake
why dental work is torture
how the presence of a filling feels like a big mistake, like it shouldn't be there

why the filling experience is complicated by my neurological issues + why that made me scared

the sensations experienced
tingling hands
nerve sensation in hand when she gave the shot for numbing
how I have these weird misfirings because my spinal cord issues supposedly near fainting
the misinterpretation of dental work as violence that makes my body faint almost
twitching →

mistake of cavity and dental filling led to slight trauma which made me scared of the dark and made it hard to sleep. while cat sitting i locked a door to a basement as an extra measure of protection. then that led to me being locked out of the house. another mistake. not being able to make hospice shifts. another mistake. it seems like while i cat sit i just make so many mistakes!!! how do i process the shame around my mistakes? how do i carry a sense of duty without my mistakes crushing me and making me feel like i shouldn't even bother. the main way i felt relief was thru making my mistakes into this quirky story. how come i value mistakes on a philosophical level but hate them in my own life? my fear of the mistake of not being cautious enough led to even more mistakes. fear of mistakes beget mistakes. mistakes in my nervous system compound to more fear that begets more mistakes. primary and secondary mistake. what is the difference?



Anywho...

So that made me want to explore nervous system "mistakes"

Inspiration from the quote about cybernetics from last class:

> The nervous system organizes the world to compute at stable state."
> - Heinz von Foerster -

This led me to read more of his work. ~ mention some quotes from those two articles ~

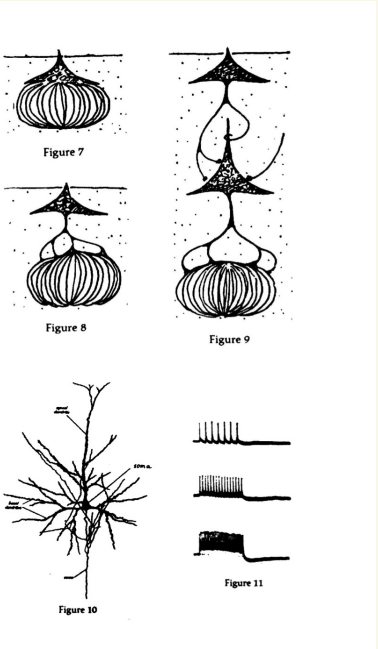
ican friends came running to me with the delight and amazement of having just made a great discovery: "I am living in an Environment! I have always lived in an Environment! I have lived in an Environment throughout my whole life!"

However, neither M. Jourdain nor my friends have as yet made another discovery, and that is when M. Jourdain speaks, may it be prose or poetry, it is he who invents it, and likewise when we perceive our environment, it is we who invent it.

Every discovery has a painful and a joyful side: painful, while struggling with a new insight; joyful, when this insight is gained. I see the sole purpose of my presentation to minimize the pain and maximize the joy for those who have not yet made this discovery; and for those who have made it, to let them know they are not alone. Again, the discovery we all have to make for ourselves is the following postulate: *the environment as we perceive it is our invention.*

The burden is now upon me to support this outrageous claim. I shall proceed by first inviting you to par-

but how is it that metaphors of machine are placed back on humans? read more from "God Human Animal Machine" book



In summary, I propose to interpret cognitive processes as never ending recursive processes of computation, and I hope that in the following *tour de force* of neurophysiology I can make this interpretation transparent.

Neurophysiology

pretation in mind we may compare the sensitivity of the CNS to changes of the *internal* environment (the sum-total of all micro-environments) to those of the *external* environment (all sensory receptors). Since there are only a hundred million sensory receptors, and about ten-thousand billion synapses in our nervous system, we are 100,000 times more receptive to changes in our internal than in our external environment.

V. *Cortex.* In order that one may get at least some perspective on the organization of the entire machinery

The way in which a question is asked determines the way in which an answer may be found. Thus, it is upon me to paraphrase the "Problem of Cognition" in such a way that the conceptual tools that are today at our disposal may become fully effective. To this end let me paraphrase (→) "cognition" in the following way:

metaphors of machine influencing personhood

COGNITION → computing a reality.

With this I anticipate a storm of objections. First, I appear to replace one unknown term, "cognition" with three other terms, two of which, "computing" and "reality", are even more opaque than the definiendum, and with the only definite word used here being the indefinite article "a". Moreover, the use of the indefinite article implies the ridiculous notion of other realities besides "the" only and one reality, our cherished Environment; and finally I seem to suggest by "computing" that everything, from my wristwatch to the Galaxies, is merely computed, and is not "there". Outrageous!

Let me take up these objections one by one. First, let me remove the semantic sting that the term "computing" may cause in a group of women and men who are more inclined toward the humanities than to the sciences. Harmlessly enough, computing (from *com-putare*) literally means to reflect, to contemplate (*putare*) things in concert (*com-*), without any explicit reference to numerical quantities. Indeed, I shall use this term in this most general sense to indicate any operation, not necessarily numerical, that transforms, modifies, re-arranges, or orders observed physical entities, "objects", or their representations, "symbols". For instance, the simple permutation of the three letters A, B, C, in which the last letter now goes first: C, A, B, I shall call a computation. Similarly, the operation that obliterates the commas between the letters: CAB; and likewise the semantic transformation that changes CAB into TAXI, and so on.

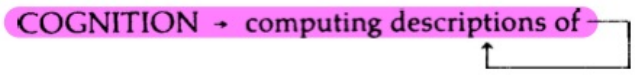
I shall now turn to the defense of my use of the indefinite article in the noun-phrase "a reality". I could, of course, shield myself behind the logical argument that solving for the general case, implied by the "a", I would also have solved any specific case denoted by the use of "the". However, my motivation lies much deeper. In fact, there is a deep hiatus that separates the "The"-school-of- thought from the "A"-school-of-thought in which respectively the distinct concepts of "confirmation" and "correlation" are taken as explanatory paradigms for perceptions. The "The-School": My sensation of touch is *confirmation* for my visual sensation that here is a table. The "A-School": My sensation of touch in *correlation* with my visual sensation generate an experience which I may describe by "here is a table".

I am rejecting the THE-position on epistemological grounds, for in this way the whole Problem of Cognition is safely put away in one's own cognitive blind spot: even its absence can no longer be seen.

Finally one may rightly argue that cognitive processes do not compute wristwatches or galaxies, but compute at best *descriptions* of such entities. Thus I am yielding to this objection and replace my former paraphrase by:

COGNITION → computing descriptions of a reality.

Neurophysiologists, however, will tell us that a description computed on one level of neural activi ty, say a projected image on the retina, will be operated on again on higher levels, and so on, whereby some motor activity may be taken by an observer as a "terminal description", for instance the utterance: "here is a table"[8]. Consequently, I have to modify this paraphrase again to read:



appearance of the first "beep" (Figs. 5, 6, noise becomes signal) when sensation becomes comprehensible, when our perception of ''beep", "beep", "beep", is in the cat's perception "food", "food", "food".

Interpretation. In these experiments I have cited instances in which we see or hear what is not "there", or in which we do not see or hear what is "there", unless coordination of sensation and movement allows us to "grasp" what appears to be there. Let me strengthen this observation by citing now the, "Principle of Undifferentiated Encoding":

> The response of a nerve cell does not encode the physical nature of the agents that caused its response. Encoded is only "how much" at this point on my body, but not "what".

Take, for instance, a light sensitive receptor cell in the retina, a "rod", which absorbs the electro-magnetic radiation originating from a distant source. This absorption causes a change in the electrochemical potential in the rod which will ultimately give rise to a periodic electric discharge of some cells higher up in the post-retinal networks with a period that is commensurate with the intensity of the radiation absorbed, but without a clue that it was electro-magnetic radiation that caused the rod to discharge. The same is true for any other sensory receptor, may it be the taste buds, the touch receptors, and all the other receptors that are associated with the sensations of smell, heat and cold, sound, etc.: they are all "blind" as to the quality of their stimulation, responsive only as to their quantity.

Although surprising, this should not come as a surprise, for indeed "out there" there is no light and no color, there are only electro-magnetic waves; "out there" there is no sound and no music, there are only periodic variations of the air pressure; "out there" there is no heat and no cold, there are only moving molecules with more or less mean kinetic energy, and so on. Finally, for sure, "out there" there is no pain.

Since the physical nature of the stimulus—its *quality*—is not encoded into nervous activity, the fundamental question arises as to how does our brain conjure up the tremendous variety of this colorful world as we experience it any moment while awake, and sometimes in dreams while asleep. This is the "Problem of Cognition", the search for an understanding of the cognitive processes.

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this made me curious about whether I could model a very simplified form of the nervous system + introduce a misfiring into it to visualize my phenomenological account of my nerve sensations

*look into nervous system models

** Looks up ways to turn this series of mistakes into a coding exercise and finds loads of resources that seem interesting yet gets a bit stunned by all the possibilities so I save them in a list **

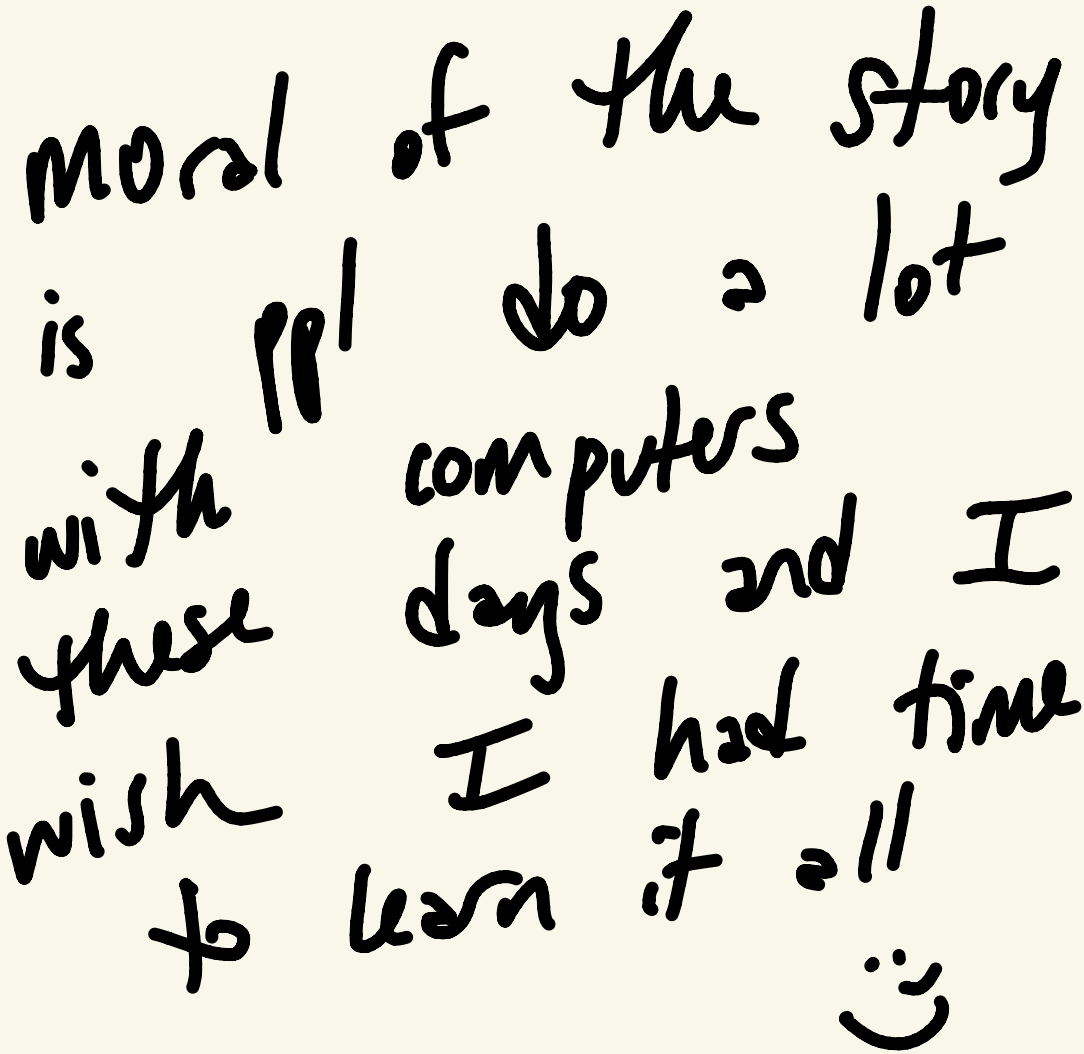
- js-2ic2
- https://brain.js.org/#/
- https://gist.github.com/mbostock/4062045
- https://www.freecodecamp.org/news/how-to-create-a-neural-network-in-javascript-in-only-30-lines-of-code-343dafc50d49/
- https://maayanlab.cloud/clustergrammer/
- https://clustergrammer.readthedocs.io/index.html
- https://www.coursera.org/learn/bioinformatics
- https://www.youtube.com/watch?v=82epZkmfkrE
- https://medicine.yale.edu/news-article/researchers-visualize-the-intricate-branching-of-the-nervous-system/
- https://dash.plotly.com/
- https://infoscience.epfl.ch/record/267297?ln=en
- https://plotly.com/python/v3/ipython-notebooks/bioinformatics/
- https://chart-studio.plotly.com/create/?fid=oxana:257#/
- https://biojs.net/#/
- https://edu.biojs.net/
- https://v2.opensourcebrain.org/

  Demyelinating and remyelinating
- https://codepen.io/Beaubruderer/pen/zdWrer
- https://github.com/drumrock/BrainJsVisualizer
- Spinal Cord Toolbox

  https://spinalcordtoolbox.com/overview/studies.html

  https://github.com/spinalcordtoolbox/spinalcordtoolbox
- https://neuroscienceblueprint.nih.gov/resources-tools/blueprint-resources-tools-library/neuroimaging-tools-and-resources-collaboratory
- https://www.nitrc.org/
- https://www.nature.com/articles/s41598-021-89848-3
- https://brainsuite.org/
- https://sites.google.com/site/bctnet/
- https://mriquestions.com/best-fmri-software.html

- https://osf.io/w2y7q/wiki/2. Functional and Structural MRI analysis/
- https://forum.spinalcordmri.org/t/spinal-cord-tractography-tools-of-software/1184
- https://gist.github.com/couchand/6420534
- https://neuron.yale.edu/neuron/static/docs/tutorial/prog1b.html



Uhhh so what is my assignment ???

What is a composition? - Mimi Yin

Some “thing” that happens over space and/or time.

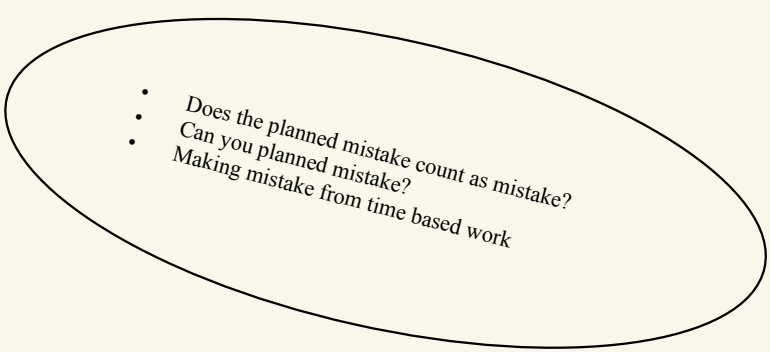
That “thing” is a thing because it’s a coherent unit. It has a beginning, a middle and an end. A composed “thing” is not just a random slice of the space-time continuum.

What makes a “thing” a “thing”? What makes it not just a random slice of the space-time continuum we inhabit?

retrospective composition

re-animating the mistakes of the week

Maybe you sense is mistaken
Maybe your response is mistaken
Maybe the goal is mistaken



repentance !

how can mistakes become more widely acknowledged and synthesized so that we don't collapse in shame, begetting more mistakes and thwarted energy?

how can my own acceptance of my mistakes help me accept others'? and vise versa?

and here i am, trying to construct a clever presentation while locked out of the house, hoping not to make any mistakes. how come the human spirit so desperately wants to avoid mistakes? how is this connected to our sense of progress, evolution, survival and belonging? how does this make us inconsolable in the face of uncertainty and decline? I don't think my psyche knows the difference between a dangerous mistake and a non-dangerous mistake. maybe the next phase of human evolution will be growing in our capacity to appreciate certain mistakes that teach us new things. how does this disposition to avoid mistakes block us from accepting the mistakes that are integral to nature, such as

- disease
- mutation
- deformity
- illogic
- improvisation
- change
- curiosity
- play
- questions without answers - what questions aren't we asking simply because we don't have the answer and are afraid of admitting we do not know

Backstory !

Why all this talk of disease + deformity?

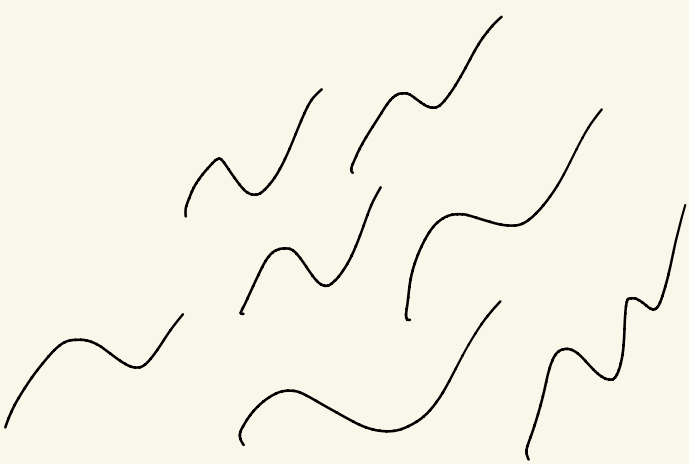
I am currently being assessed for a neural tube defect that I might have had since I was a 4 week old fetus in the womb!

It has led me to contemplate what it is to have an entire anatomy based on an earlier mistake. And the mistakes of doctors not seeing it. And the difficulty for medicine to admit what it does not yet know. And the tendency in society to have little room for existential acceptance of disease.

What does it mean to integrate the mistake into my life?!

(Ironically I was only able to get past my creative block in finishing this presentation after succumbing my post - lockout mistake despair.it was a surrender to anti-girlbossing for the wash of the day that softened me enough to play)

*** keeping above "despair.it" typo in here cuz my notes app thinks it is a link to a website and I think that could be a cool domain name. no one has claimed it yet. someone should!! ***



so are mutations just nature "playing around?" creativity depends on play + the possibility of messing up. maybe this gives us a mirror into how nature feels. its mutations are just it being a lil silly. if I can't expect myself to not make mistakes, why would I expect nature to be flawless?

Nature makes all these mistakes and still makes all this life. So maybe we are not so different.

I've showed you all these mistakes!

Now I feel so much better! :)