

A call to action on how we think about and treat *Thought Disorder*

Disordered (disorganized) speech is a clinically accepted indicator of Thought Disorder, a symptom commonly present in psychotic conditions. Disordered speech exists on a spectrum from circumstantial speech and vague references to the rarer phenomena of clanging and phonemic word salad. Thought Disorder, often accompanying treatment-resistant Schizophrenia, also tends to be poorly responsive to the currently available treatments. Yet it is a profound source of disability (Mutlu) making it a crucial, but often overlooked, treatment target.

In addition, often overused tropes, such as - “Some sky create tomorrow headphone” and “The next day when I'd be going out you know, I took control, like uh, I put bleach on my hair in California”, drawn from the extreme ends are provided as sufficient substitutes of understanding of *Thought Disorder*. All of this makes discussing *Thought Disorder* in depth from a lived experience perspective of significant importance. It is my hope that in this newsletter I can introduce:

- 1) My journey in appraising and treating my Thought Disorder (my primary "Schizophrenia" symptom). I go into much more depth in a separate presentation I did for the [CEYMH Youth Advisory Council in May 2025](#)
- 2) My accounts of Thought Disorder, which I also introduced at the DISCOURSE 2025 conference in my [slides](#)
- 3) Whether “disorganized” speech can truly be distinguished, and whether Large Language Models (LLMs) can humanize “disorganized” speech
- 4) Whether there are clinical metrics for defining the *absence of Thought Disorder*, and more importantly, whether current treatments aim to treat *Thought Disorder*
- 5) Future directions worth exploring for the treatment of *Thought Disorder*
- 6) Questions about how *Thought Disorder* is conceptualized/directions for research

My journey in treating my Thought Disorder (my primary "Schizophrenia" symptom)

I will first begin with how I entered the psychiatric system to give a bit of context. This started when I voluntarily went in to clinic, concerned I could not feel a “click” in forming thoughts on just about anything nor maintain information “online” in my head in a way where I could do basic tasks like navigate bus routes on the fly, read story books, or be able to hear anything other than scrambled, purely disjointed often inhuman speech in my head or sometimes, nothing at all.

Countless psychiatrists claimed that I was “psychotic” –never explained to me with nuance why, beyond that I had “disorganized thinking” despite my detailed attempts at trying to get them to flesh out their arguments and why my thoughts weren’t merely characteristic of the often colloquially described “disorganized thought” in ADHD. They told me I “lacked insight” just because I didn’t adopt their lingo for calling my “voices” (heard internally much like thoughts rather than as a sound) as such—instead I

said I was having lots of “intrusive thoughts” that I maintained were not necessarily “real” but felt very real and pressing. In a moment of desperation, I went to the hospital voluntarily when I was particularly agitated. I was foolish and under the impression that the hospital was a place for me to have an emotional purge where I cried, and fully released my emotions (not harming others, but hitting myself).

There, at hospital, I was rapidly injected with Haldol which was the worst torture of my life, a fate worse than death for me during those moments for the symptoms it induced, when I believe literally any other sedative would have, and *has* often sufficed. This torture lasted for 12 hours, where I suffered unbearable agony, writhing pain, heart racing, dystonia, horrific “stuck” images in my head, and complete abandonment from health professionals in the face of my suffering. Later it was written in my notes that the treatment “worked” because I had stopped crying/being agitated. However, it was because I was in the deepest form of hell and the drug had muted my ability to speak. Of course that was not in the notes.

Now, I *do not* claim that my experience is in any way unique or special in its suffering – countless others who have not been able to voice their opinion at all have suffered from such treatments, and continue to. Nor am I claiming that Haldol and medications like it do not work nor should not be administered. I am more explaining the development of my disenchantment with the current system as a result of *my* experience.

Further desperate attempts to contact psychiatrists for the *Thought Disorder* I experienced yielded nothing more than antipsychotics which resulted in involuntary movements, leaky breasts, weight gain, and cognitive dulling. These barely made a dent in the “disorganized thinking” beyond just suppressing thought itself.

However, here are some treatments that did help me (the first, generously provided in part by psychiatry):

- ***Off-label TMS for OCD–mPFC-ACC protocol***
 - Improved ability to feel joy
 - Improved learning ability and ability to form new memories
 - Resulted in hypomania at times, but hypomania is still a definite “rung up” from severe *Thought Disorder* and thought impoverishment, cognitively speaking, in my humble opinion
- ***Avmacol–contains sulforaphane in the form of broccoli sprouts***
 - Helped me get off antipsychotics without a “rebound psychosis” (I’m not claiming this for everyone!)
- ***Phosphatidylcholine infusions/oral therapy with curated balance of omega 3s, omega 6s etc (not just a typical omega 3 fish oil like supplement)***
 - I got this procedure and supplement regimen from a specialized naturopath with connections
 - However, [BodyBio](#) is the only producer of liposomal PC/Balance oil for this purpose, because of unfortunate litigative practices in the industry for this potentially groundbreaking treatment

- I will note that the theory for this particular treatment is based on the late David Horrobin's work on Schizophrenia, mentioned thoroughly in Phospholipid Spectrum Disorders in Psychiatry and Neurology, and abnormal *cellular membrane composition*, which I mention in the last section of this document.

My accounts of *Thought Disorder*

I will give a few themes I have picked up from my writings that I believe index *Thought Disorder* instances, to better give an idea of what *Thought Disorder* "is," from my perspective. These writings likely index whatever we consider as *Thought Disorder*. I hope these characterizations will show that one can be utterly helpless to *Thought Disorder*, but be a mindful "insightful" (often painfully so) observer to it, nonetheless.

I also caveat that I wrote these passages as they entered my mind, over the last few years, without any finessing for the public, and thus encourage the following question(s) as you are reading:

1. ***To what extent are your own, say, pre-epiphanic moments, just as seemingly disorganized, yet may occur in a "flash of a moment" before you can quite grasp the threads that cohere to an explainable sounding idea to yourself and to others?***
2. ***That is, to what extent could "Thought Disorder" be a matter of slowed down and/or disconnected neurotransmission that reflects an attempt to form meaning, yet a condition where the temporal synchrony isn't fast enough or "correct"?***
3. ***If you were to undertake an experiment of observing your inner experience in minute detail, much like Russell Hurlburt encourages in his Descriptive Experience Sampling method, what results would you find?***

Themes:

1. General cognitive interference when trying to focus/recall info

"noticing more cognitive interference -- say when I try to recall details about the confidence intervals I hear some fragments of song in my head. So let's try again. Words come in, like 'prototypical, Acheulean, Neanderthalic', from a lecture I watched a few hours back, coming into my head. really smart. Jolts to a song with 'lalala i just can't get you out of my head'...jumps back to the thread.."confidence intervals endpoints are stochastic, in the frequentist scenario".. From all this I realize, the human mind is not designed to have catchy tunes in the head, along with recollections about the possibly affective stance of a person experiencing the same situation that we are, all at the same time we are trying to process the information in a situation..? that this is a limitation of the human mind that no one can explain well.."

2. General associativity (not including when my own thoughts' shapes are used as associative cues, aka no 'metacognitive' observer causing the excessive associativity)

"As I flicked my wrist in a direction I heard a tap in my head -> the wrist flick was in the direction of my phone and so I checked some messages -> something about the idea of

checking messages reminded me of a song I liked -> I remembered a past context I heard the song in -> thoughts jumped to seeing a car outside with two bumps and thought of mickey mouse -> saw a flashback of an old 90s style mickey mouse outfit -> remembered where i had seen such an outfit on the bottom of a potpourri container, at my old house -> this reminded me of my old house where there was a moth on the wall that scared me -> i saw an imaginary moth in my mind's eye open its wings and saw golden circles on their wings -> i was swept into the circle and was reminded of the movie The Ring"

3. Excessive meta-cognitive associativity (of thought content, associated emotion, or my own affect)--leading to excess perspective switching

"to make this more clear, what happens to me at least is a reverse mirroring process: i start to notice my own mental state like "chantal is reading a sentence of a book"..much like many other people have read things and focused, but the fact that she becomes aware of other people having that same mental experience makes her own previously pristine experience muddled"

4. Oscillation of over-sensory states with thought-disordered states

Both of these states occurred within the span of days, by my report. The first state was substance induced (15-30 mg CBD (Cannabidiol), also replicated under just one session of Brainsway Deep TMS (Transcranial Magnetic Stimulation) therapy on mPFC-ACC) while the second was my baseline at the time.

"In one state: I am abnormally sensory sensitive, hyperfocused, have no thought disorganization whatsoever, am emotionally more irritable and lacking any awareness of people even around me. I'm having lots of a "drivenness to action" of the mania-sort, with relative sharpness and clear headedness, that combined, makes me really want to feel the contours of understanding arguments as precisely as I can

In a 'opposite' state: I'm "disorganized" states, with proto words and images, a-grammatical sentences in my head along with rapid perspective shifting (feelings of viewing myself from the perspectives of many other people and having a psychic war of sorts)."

What would it look like in a clinic if patients had the time and trust to be able to relay symptoms in this way to clinicians? Would it increase empathy for the patients' experience, identify new clinical targets, or even bridge the mystery of what may happen in "thought-disordered clients' minds" as not bizarre, but more exaggerated processes that occur just as often in non-Thought Disordered peoples' minds?

Can LLMs humanize "disorganized" speech?

It is often hard, due to time constraints and clinicians' own patience, to distinguish between writing/speech that has varying traits like: presence of meaning, disorganization or novelty. In the below table, I attempt to provide examples of speech that have different values set for these three properties based solely on my assessment of these traits. I am doing this exercise to try to reframe

experiences with clinicians where I thought I was making sense and had a point but clinicians thought I was “disorganized”. Further, I am bringing in LLMs to provide a potential interpretation for some of my writings which I wager a rushed, stressed or neglectful clinician may interpret as “disorganized”, but I don’t see LLMs as a substitute for human understanding and also acknowledge their deficiencies.

In the table below, I use the term “Meaningful” to refer to speech where it is possible for me to derive meaning from the content at all, “Organized” to refer to speech that appears to have structural coherence (note: I am not using whatever is the opposite of the technical definition of *disorganization* which is used clinically and often has “meaning” subsumed in it) and “Novel” to refer to speech that has new ideas/surprising content to *me*. Note: the presence of “Novelty” in speech presupposes that it has “Meaning”, so there is no instance per the definitions I used where speech has no “Meaning” but is “Novel”.

Entry #	Example of writing	“Meaningful”	“Novel”	“Organized”
1	“It’s not like I like being the outcast czar of the store.. I go on the bridge to explain some dualities of our existence to the sun.. why, I just, I’m not a wrangler of the museum but what of the fruit vendors.”	no	yes	no
2	“You have new khakis. But no shoes. What if the laces on the boots? You know that one?”	no	no	no
3	“The boots don’t run the dryer. But the power wattage does for the kitchen.” Or See “ <i>Passage 1</i> ” below	no	no	yes
4	See “ <i>Passage 2</i> ” below	yes	yes	no
5	“You have the kettle with you.. Well, the pot really.. The one on the bench.., mean, table?”	yes	no	no
6	“According to Jaynes, this bicameral mentality began malfunctioning or "breaking down" during the 2nd millennium BCE. He speculates that primitive ancient societies tended to collapse periodically—for example, Egypt's Intermediate Periods, as well as the periodically vanishing cities of the Mayas—as changes in the environment strained the sociocultural equilibria sustained by this bicameral mindset.” Bicameral mentality - Wikipedia	yes	yes	yes
7	“I’ve been doing all right. There are often ebbs and flows in life, but it’s important to ride the waves and try to make lemonade with the lemons life often gives you.”	yes	no	yes

A few additional points I want to make regarding this table.

1. I want to highlight the subjectivity of assessing the presence of these traits. For example: If I had plenty of context in theories posited about consciousness, I may find Entry #6 to be not "Novel". Further, if I could *parse* the arguments suggested by the "bicameral mentality" hypothesis but disagreed with the *conclusions*, I would be conflicted as to whether or not I would call the entry "Meaningful" or whether to redefine the term itself.
2. It is important to not confound a "Meaningful"/"Organized"/"Novel" with a "Meaningless"/"Disorganized"/"Novel" passage, because of superficial perceptions that disorganization implies meaninglessness. Towards this end, I have seen ChatGPT be able to distinguish between these cases on the samples below that I have generated. *However, I note that it would be best to have clinicians trained to be able to spot these differences, as there are ethical considerations needing to be thought about before giving LLMs access to patients' data.* Further, LLMs known to be overly flattering in their interpretations, may not give an accurate read that relates to real world functioning, functioning which is still very much based on the collective subjective opinions of humans not AI agents. That is, if people are led to believe their content has meaning per the LLMs, but not per the humans who surround them, this may worsen feelings of loneliness and in turn functioning.

Passage 1 (deliberately random words which I strung together):

"The day is dark and a long road lays ahead. I philosophically ponder my existential dread for meaningless ruminating metarecursion. In a way, David Foster Wallace's juxtaposition of elemental inadequacy and insouciance purveys my character abroad for expressive understanding of my fellow"

ChatGPT output says...

*"The day is dark and a long road lays ahead."
Classic existential tone-setter. The speaker faces something uncertain or burdensome.*

"I philosophically ponder my existential dread for meaningless ruminating metarecursion."

They're trapped in recursive self-reflection: thinking about thinking about meaninglessness. It echoes Hofstadter, Wallace, and depressive rumination.

"Foster Wallace's juxtaposition of elemental inadequacy and insouciance purveys my character abroad for expressive understanding of my fellow."

Likely trying to say: DFW's contrast between deep insecurity and superficial carefreeness mirrors my own identity as I try to express myself to others. The meaning is poignant, even if the phrasing is tangled.

The mention of recursive thought (metarecursion) suggests some awareness of higher-order thinking patterns, but it's not elaborated in a precise or novel way.

Passage 2:

“At this time, I am finally having less self referential thoughts, that is, fewer thoughts like the following form: trying to figure out whether the ability to do math generalizes to other skills and is thus the “Master Skill” compared to others, and the ultimate obsolescence of other skills anyway yet increasingly more obsolescence of math skill with AI..a parallel to a passage from “The Unbearable Lightness of Being” on Tomas having a 2 way sort of vision in arms of Sabine vs Tereza..the ability to make analogy itself reminding me of Surfaces and Essences by Hofstadter and how analogies are abstract thought's fuel and fire, such an analogy itself seeming like pithy poeticism lending itself to be “idiotically interpreted” as simplistic babble by the secretly-hopelessly-disorganizedly Schizophrenic-but-pseudoAutistic type of person who wears information as mere fashion as a cover for a naked mentally disconnected mind..but such judgments bring into question who is the biggest idiot of all, for pride, especially for a trait of pithiness indexing neural efficiency, was never earned to begin with, was it not?”

What I meant in this passage..

I am feeling some relief from having less self-referential thoughts but unfortunately become a bit self-referential on the fact I am not having as many self-referential thoughts, thinking if the state of not having as many self-referential thoughts permits one to be able to do study in “technical” subjects such as math. I also reflect on if I am unnecessarily chastising myself for having moments where doing technical subjects is impermissible because of possible obsolescence of such skills as a result of AI solvers. At the same time I am making a “loose association” to passages from the book related to the closing-off of one mode of thought when another is open (which looking back, I think could have been made without the bulky reference to the book). The incorrectness in reading the passage makes me critically observe how the mind nevertheless searches for analogies which is described as the fuel for thought, in Hofstadter’s book Surfaces and Essences. There is a pejorative interpretation of myself as someone who postures as precise and colloquially “Autistic” per the very narrow definition of being sensorily precise and focused, but is secretly disorganized and “Schizophrenic” underneath. Then there is a further interpretation of this thought that perhaps I am being too harsh because perhaps rather than making having an unclear reference or thinking of myself as more learned than I am, the biggest sin would be to pride oneself on having consistently good “neural efficiency” to not make such unclear references, and to thus give myself some grace.

ChatGPT output says..

The speaker reflects on the desire to have fewer self-referential thoughts, giving an example of such a thought spiral: questioning whether mathematical ability is the ultimate “Master Skill” because it might generalize across domains, though this is complicated by the increasing obsolescence of math due to AI. The self-awareness here is layered—they are not just thinking, but also thinking about thinking, and judging themselves for doing so.

They then make a literary analogy to The Unbearable Lightness of Being by Milan Kundera, referencing Tomas’s split view of Sabina and Tereza—which reflects ambivalence or duality in

thought, possibly representing the speaker's own internal conflict about abstraction versus lived emotional experience.

*This leads to a meta-reflection on analogy itself, citing *Surfaces and Essences* by Hofstadter, which argues that analogy-making is the core of cognition. Yet the speaker is aware that this very meta-analogy could sound like pretentious nonsense—especially to a type of person they describe harshly as “Schizophrenic-but-pseudoAutistic” (likely a projection of their own inner critic), someone who uses knowledge as fashion rather than for substance.*

Finally, they reflect inward: if they judge this person as foolish, is that not itself a form of pride? And pride in mental quickness—“pithiness indexing neural efficiency”—is unearned, so what right does anyone have to feel superior?

Why this matters:

While I may be biased (as I wrote the second passage in a diary), I found ChatGPT's analysis to be decent and a bit too charitable. However, it is notable that its text seemed to distinguish Passage 1 and Passage 2 based on the *relative* presence of meaning.

This further brings into question, if LLMs can distinguish seemingly disorganized speech as *laden with the intended meaning of the writer*, from truly “meaningless” speech that has just as many “large words” and “massive literary references”, better than a human, ***what would this mean for democratizing the landscape of Thought Disordered (or otherwise) people's legibility? Could clinicians mistake speech that may be conceptually deep because of difficulty in parsing, and thus wrongly categorize it as “meaningless”?***

“Covert” Thought Disorder which may be masked in speech

Finally, I think it's important to note that people who may struggle with unwanted loose or idiosyncratic associations may suppress this in their language if they have strong “reactive control”, a neural mechanism which involves suppressing irrelevant responses in favor of more goal-directed ones mechanisms. This has relevance to whether speech samples provide sufficient data to really capture *Thought Disorder*.

A very interesting paper that gets into this phenomena is [Latent mechanisms of language disorganization relate to specific dimensions of psychopathology](#). Using a computational model taking in reaction times and relevance or non-relevance of associations that participants from clinical and non-clinical backgrounds make to certain cues, these researchers were able to distinguish the degree to which proactive control versus reactive control strategies were influencing the associations made.

In particular, participants who may have “covert *Thought Disorder*” were separated from those who had more visible *Thought Disorder*, based on a) language features indexing degree of *Thought Disorder*, b) dimensions of self-rated psychopathology (particularly suspiciousness), and c) reaction times to produce associations. A telling point in the paper was this:

"Humans do not express all that comes to mind and often use executive processes to inhibit irrelevant ideas. Yet, psychiatric nomenclature often equates incoherent communication with disorganized thought, as implied by the ascription of FTD. The latter's strong diagnostic emphasis on overt speech risks overlooking covert forms of thought disorganization and misconceptualizing underlying cognitive processes."

Do current treatments really address *Thought Disorder*

The absence of *Thought Disorder*?

Before we can improve treatment, it would be useful to ask people who have previously experienced *Thought Disorder* to describe how it feels to not have *Thought Disorder*. Those who have had an alteration of a function may be uniquely equipped to describe its properties. So I invite readers to consider the following passage, in which I am experiencing what I would term a state of peak cognition/flow, as a *thought-disordered* absent state:

"Thoughts can flow at my slightest whim, like the ripples on a pond just perturbed with the whisker of a cat, but can also come to a complete halt, as if an orchestral conductor was able to stop an entire symphony with just the laziest flick of his wrist.

I am able to generate massive lists of possibilities for topics I wish to think about -- in just 2 minutes while walking, mind you, and balancing a heavy backpack on my back, I was able to generate about 10 different ways of classifying mental illnesses and how this emphasized the importance of reading Hofstadter's book on Surfaces and Essences to understand how to and how not to construct analogies.

All this I was able to balance while quickly scanning my environment for cars, thinking parallelly about the time and how quickly I was walking in relation to wanting to get to the library at a certain time, and feeling like my gaze about the environment both auditorily and visually was in synchrony with the music I was listening to -- as if each little thump of the bass or melody switch in the song resonated with a change in my visual field to take in a new set of information.

*I think whatever I am blessed with right now is a human luxury, and **I don't bemoan others for not spending time trying to analyze this state, and more just doing with this state--since the thoughts move so lucidly and at will in this state, that to analyze the thoughts is to analyze naturalistic phenomena themselves, since the thoughts are capturing the phenomena so much more accurately.***

If this passage does not bring up a semblance of peak functioning for you, I invite you to substitute my interpretation of *cognitive flow* with however you'd describe a mental state of yours where you were not particularly struggling to think and felt thoughts branched off or unified at your will. Thinking about your thoughts is itself very hard for people who haven't had its absence or twisted variations of, thrust upon them, so I understand if it is a difficult exercise.

1. Does *cognitive flow* indicate to you an *absence of mental disorganization*, however you choose to define the term *mental disorganization*?

2. Do you think that to experience such a *cognitive flow* state enables any or all of:
 - 1) peak cognitive engagement
 - 2) metacognitive capacity
 - 3) ability to learn new skills
 - 4) conversational fluency
 - 5) rich interpersonal connections
 - 6) capacity for deep abstract thought?
3. Do you think these are important variables to index someone's quality of life?
4. If you are a clinician or researcher:
 - a. Do you think that patients who present with *Thought Disorder* frequently experience a *cognitive flow* state?
 - b. Do you think that patients who present with *Thought Disorder* frequently score well on any of the 6 dimensions mentioned above?
 - c. Do you think the current treatments on the market (medication) for treating *Thought Disorder* measurably improve any of the previous 6 dimensions?
7. If you believe, like I do, that people with *Thought Disorder* rarely experience *cognitive flow*, that they score poorly on the 6 dimensions, that treatments on the market *do not* generally improve any of the 6 dimensions and prevent them reaching a *cognitive flow* state, then I ask, how can we strive for better treatments?
8. Before you contend that the treatments that exist address distressing symptoms such as hallucinations and delusions, keep *Thought Disordered* patients out of prisons and hospitals, I invite you to consider whether *you* would be content with a life that merely achieved those aims and whether *you* would be satisfied with almost never having access to *cognitive flow*, day in and day out, and whether *you* would actually endorse living this way as a life worth living. And if the answer is that you would not, then I think we need a serious consideration of the treatments that currently exist, and why we are settling for less.

Proposals for future biological treatment directions for Thought Disorder and Schizophrenia as a whole

I hope in the previous section I allowed you to reflect on the expectations for cognitive health for the Schizophrenia population, particularly those who experience *Thought Disorder*, and whether these expectations are being met. While research centered on lived experience is certainly needed to develop effective measures of the presence or absence of Thought Disorder and to further index cognitive health, adequate biological targets to improve *Thought Disorder* are still needed.

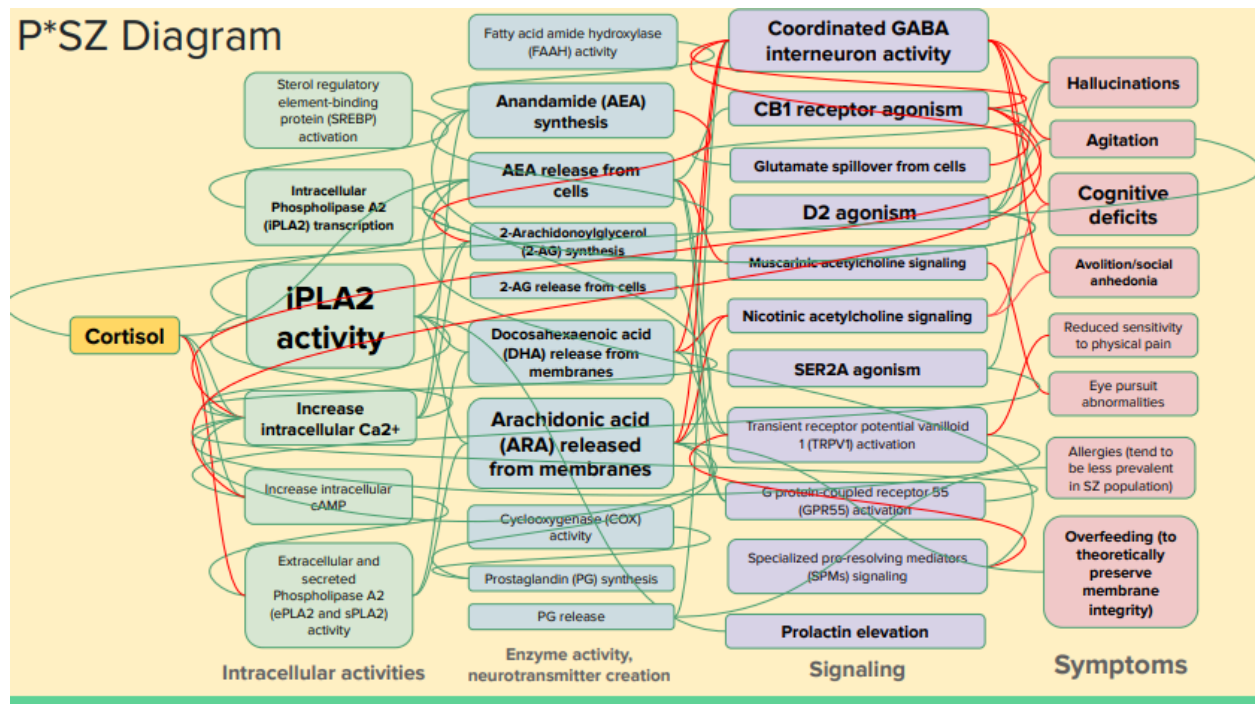
One thing that's shaped my thinking on the biomedical angle for treating Thought Disorder, and Schizophrenia at large, is Professor Ari Rappoport's deeply mechanistic and integrative work built over thousands of papers of research. Ari is trained as a computer scientist, but was fascinated by understanding the theory of the brain. He builds on Horrobin's work in his [PUFA Theory of Schizophrenia](#), which I drew on for my presentation [Understanding the PUFA Hypothesis of Schizophrenia](#).

The presentation outlines the compelling root-cause model for Ari's research, which is endorsed by

Prof. Roger Kornberg (Nobel laureate for his work on DNA transcription), and traces Schizophrenia's symptomatology to disruptions in cell membrane dynamics—specifically the dysregulation of *iPLA2*, the enzyme that releases arachidonic acid (ARA) and DHA from cell membranes which disinhibit the endocannabinoid system and downstream neurotransmitter systems. Treatments that thus target membrane disruptions may yield more root-cause treatments for Schizophrenia, and likely, *Thought Disorder* as well, which per [Language disorder in schizophrenia as a developmental learning disorder](#) has overlap in symptomatology to developmental language disorders like Dyslexia, a disorder for which there is correlational evidence with membrane disruptions, per [Fatty acid metabolism in neurodevelopmental disorder: a new perspective on associations between attention-deficit/hyperactivity disorder, dyslexia, dyspraxia and the autistic spectrum](#).

According to Ari's theory—based on an extensive review of the literature—this upstream dysfunction in *iPLA2*, affects a host of neuromodulatory systems (dopaminergic, serotonergic, cholinergic, endocannabinoid, and others) that are implicated in chronic psychosis. This systems-level perspective has made it harder for me to see current neurotransmitter targets as *the* important target for medication responsiveness; to me, it seems more like a downstream effect of deeper cell membrane dysfunction.

Below is a diagram I made based on all the connections made in Ari's paper. As you may see, neurotransmitter systems are but a few of the downstream targets of a more fundamental cellular membrane abnormality:



I believe that rich, critical discussion ought to take place about Ari's ideas, and that they should be put-to-the-test"! Ari also has a book on Elsevier, called [The Science of the Brain](#) with a complete mechanistic theory of the brain explaining a variety of DSM 5 and neurological entities. It should be a

fascinating read and contains a forward from Kornberg about the tremendous clinical implications of Ari's work for identifying new and viable treatment targets.

Future non-biological directions worth exploring for treating *Thought Disorder*

I explore non-biological directions for *Thought Disorder*, including psychosocial interventions and cognitive training, in my outline [How Thought Disorder treatment can be improved with CBT-p and adjacent methods](#). I welcome discussion and critique on these ideas, many of which I merely built on from the literature.

Future directions/research questions

And finally, I suggest some questions that have been on my mind, and fascinate/intrigue me about the possibilities of better understanding and treating *Thought Disorder*:

1. May it be that those who may present with more of a disconnected speech pattern, while at first blush may seem to score lower on cognitive tests, may be sometimes suffering from undiagnosed chronic fatigue syndrome that primarily affects the mind? This is a hypothesis I am keen on seeing explored, and would likely involve research that interfaces with membrane medicine (above). An excellent text that explores the tri-occurrence of Dyslexia, dyspraxia and Schizotypy, as a diagnosable entity through membrane medicine, is [Phospholipid Spectrum Disorders in Psychiatry and Neurology](#) by David Horrobin et. al. This seems relevant in the context of those who may have had learning disabilities long before the presentation of anomalous experiences and/or chronic fatigue. Perhaps there will be a relationship with severity of membrane and cellular fatty acid/phospholipid abnormalities and severity of *Thought Disorder*, though this particular connection hasn't been explicitly explored in any capacity.
2. Are intrusive thoughts in Schizo-OCD an epiphenomenon or central to the cause of impaired working memory?
3. There is a hypothesis, mentioned for example in [Disembodiment and Language in Schizophrenia: An Integrated Psychopathological and Evolutionary Perspective](#), which suggests that human evolution has involved re-use of sensorimotor circuits, designed to represent literal physical experience, for symbolic thought. This hypothesis further suggests that this re-use without a back up system for representing actual physical experience may have given rise to conditions like Schizophrenia. So then what *are* the reasons for the "back up" defenses in those who are "not" Schizophrenic?
4. Could some *Thought Disorder* symptoms be explained by a lack of access to certain frontal lobe functions that would otherwise facilitate linear communication, but the thoughts are otherwise legible in the experiencer's mind? Could the frontal lobe functions that are inaccessible be related to those which can increase the "delay" and "stickiness" of representations?
5. What is the mechanistic difference between those who experience a few distinct psychotic "breaks" and those who have chronic attenuated positive symptoms for life and never really have a "break," but nevertheless are given the Schizophrenia diagnosis?

6. Why is subverbal thought correlated with neural efficiency compared with vocalization/mental rehearsal thought? As in, is the timing of precise encoding of sensory stimuli vs mental rehearsal well decided upon? When one's working memory is saturated, does one then unconsciously (or sometimes consciously) employ rehearsal?
 - a. *This is relevant in the following case: Imagine you have some disconnection of mental activity from the sensory environment but still capture some detail. You see a purple notebook. But instead of seeing the purple notebook as a means to an end, your mind unconsciously spurs you with the words "purple" "notebook" or associations like Jimi Hendrix song Purple Rain, so on, so forth. Is the associative net being cast so wide the reason for not seeing typical "[mental affordances](#)", or, is it a compensatory effort to see them? Could we find out the "truth" on this by looking at very subtle, low level indices of these phenomena?*
7. When "non-Thought Disordered" people listen to and can work in the midst of music in the background, what is neurologically different in their brains compared to those who aren't able to filter background noise out and experience automatic replay of intrusive songs?
8. What is the difference between ADHD and disorganized thinking that presents without much noise in the mind but manifests as scrambled speech? Is this because of the imprecision of the category of ADHD, or the loosening of what people may term as "scrambled speech" vs "true scrambled speech in *Thought Disorder*"?
9. Why is it that it is much more common to observe people experiencing rapid sensitization-based activation of the autonomic nervous system without conscious deliberation to do so, compared to having rapid increases in, say, working memory?
10. What is going on when people can speak in a way that has minimal affective amplitude variability but *precisely* timed facial movements to emphasize certain words and ideas? Is this just a confound for cognition? Is this an index we should capture in addition to linguistic ones, to help those who may experience *Thought Disorder*?
11. Why does limbic dopamine increase paranoid pattern detection but not visuospatial pattern recognition?
12. Because it's undesirable to coerce others with philosophical frameworks, what should be done for people for whom psychosis symptoms may be harming their lives/endangering them?
13. What about the "fuzzy middle area" between psychosis and OCD where thoughts may not have a stereotyped "form" but have a stereotyped "theme"? That is, a person experiences recurring thoughts about someone's reactions to them, with experiences such as flashes of the person's face in their head, snippets of real or imagined dialogue they had with that person, so on and so forth, but with little power to stop these experiences. The person appraises these experiences as 'intrusive' and as emanating from their mind but based on the type of content and the fact that there may not be a decisive emotion of 'fear' they would not meet DSM criteria for OCD. Further, this person may experience alternating "insight", varying from having a metacognitive monitor saying "Ugh i thought about that person again" but alternately, at other times are blended (IFS term) with the intrusive part, leading the person on a very felt dimension to feel 'contacted' by this person despite logically endorsing that this isn't possible. Could this "middle area" index the Schizo-obsessive overlap described in the text [Schizo-Obsessive Disorder](#)?

14. And finally, why isn't Schizophrenia considered a neurodiverse condition? Should it be? What would be the harms and benefits? What would be the harms and benefits of a tiered functionality approach like that which is used in Autism? I explore this partially in my presentation for the *CEYMH*: [My journey in Schizophrenia symptoms and research](#)

Please contact me if you wish to chat about any of these ideas or otherwise!
Chantal Murthy, Lived Experience Volunteer Research Assistant at
the [SPIRIT Center](#)
E-mail: chantalm@uw.edu