Compression planes of cognition

From: **Joe Maxwell from Joe Maxwell**
joesystemica@substack.com

To: **joseph.maxwell02@proton.me**
joseph.maxwell02@proton.me

On: **Monday, 25 May 2026 at 15:25:24**

Forwarded this email? Subscribe here for more

Compression planes of cognition

Autism, ADHD, AuDHD and Neurotypical cognition without the moral nonsense

JOE MAXWELL
MAY 25

READ IN APP

This is not a diagnostic tool.

It is not a ranking system.

It is not a personality quiz with better vocabulary.

It is a model for thinking about Autism, ADHD, AuDHD and neurotypical cognition as different ways of compressing the world.

That word matters: **compression**.

The world is too big to process directly. Too much light, sound, meaning, memory, social information, body-state, expectation, consequence and possible interpretation arrives at once. No brain receives all of reality and handles it raw. Every mind has to reduce the world into something usable.

The question is not whether compression happens.

The question is:

what does a system preserve when it compresses?

Some systems preserve social flow.

Some preserve structure.

Some preserve salience, novelty and momentum.

Some try to preserve structure and novelty at the same time, which is powerful when it works and expensive when it does not.

That is the basic idea behind the Compression Planes model.

The longer internal paper frames Autism, ADHD, AuDHD and neurotypical cognition as "dominant compression tendencies" rather than personality categories or moral hierarchies. It also introduces two central costs: **holding cost**, the energy required to keep a model stable, and **movement cost**, the energy required to transition between models.

I want to make that readable here.

Not flatten it.

Readable.

The problem with "types"

Most public explanations of Autism and ADHD still get trapped in trait lists.

Autism is described as routine, sensory sensitivity, social difficulty, special interests.

ADHD is described as distractibility, impulsivity, hyperactivity, poor organisation.

AuDHD becomes "both."

Neurotypical becomes "normal."

That is useful up to a point, but it misses the deeper structure.

A trait list tells you what something can look like.

It does not tell you what it costs, what it preserves, what destabilises it, or why the same person can look brilliant in one context and completely non-functional in another.

That is why "high functioning" is such a bad phrase. It tells you that

output looked intact. It tells you almost nothing about the internal cost of producing it.

Someone can appear socially fluent while manually calculating every exchange.

Someone can produce excellent work while destroying their recovery window.

Someone can seem inconsistent because their ability depends heavily on salience, sensory load, transition pressure or evaluation threat.

Someone can look calm because their collapse happens later, privately, when the system finally stops performing.

So instead of asking, "Which type is this person?", this model asks:

what kind of compression is this system using, and what happens when that compression is placed under load?

Neurotypical cognition: social continuity as compression

Neurotypical cognition is often treated as the absence of a pattern. I do not think that is right.

It is a pattern.

It just happens to be the pattern most environments are built around.

In this model, neurotypical cognition tends to compress through shared context, social continuity and narrative alignment. That does not mean every neurotypical person is shallow, conformist or socially effortless. It means the system often stabilises information through what is collectively understood.

What is the expected meaning?

What is the socially appropriate level of detail?

What is the normal pace of exchange?

What does the room already agree is relevant?

That kind of compression is extremely useful. It makes group coordination smoother. It reduces friction in shared environments. It allows people to move through ordinary social systems without needing to rebuild the rules from scratch every time.

The cost is that deep structural ambiguity can become uncomfortable when it does not serve immediate social or practical need. If a question can be answered well enough for the group to move on, the neurotypical compression style may not feel the same pressure to resolve every hidden inconsistency underneath it.

This is not a defect.

It is an optimisation.

Neurotypical cognition often preserves **shared stability**.

ADHD cognition: salience and momentum

ADHD is often described as an attention deficit.

That is only half-useful.

A lot of ADHD does not feel like having no attention. It feels like attention is extremely available when something has enough charge, and almost impossible to summon when it does not.

Interest, urgency, novelty, emotional relevance, crisis, challenge, play, pattern, competition, consequence: these things change the physics.

The Husky Model captures this beautifully. In that model, the conscious mind is the driver, the huskies are attention, motivation, curiosity, emotion and impulse, and the sled is thought or action moving through the world. The point is not that ADHD means “no control.” It means there are many more sources of pull, and they do not all align automatically.

That explains why ADHD can look so contradictory.

The person can be fast, creative, funny, adaptive, excellent in crisis, and then completely unable to start a boring form.

They can crush a deadline at the last moment, not because they were lazy before, but because urgency finally aligned enough of the system to move.

They can have a hundred thoughts, but not enough stable traction to carry one cleanly into completion.

In compression terms, ADHD preserves **salience and linkage**.

What matters now?

What is interesting?

What connects to what?

Where is the energy?

What pattern just appeared?

The strength is exploratory intelligence. ADHD can move quickly across domains, generate options, notice unexpected links and reconfigure around novelty.

The cost is holding.

A model may be built brilliantly, then dropped when salience fades. A task may be fully understood but still impossible to hold in active priority. Execution becomes dependent on stimulation, urgency, scaffolding or emotional charge.

This is why ADHD is so often morally misread.

The outside sees inconsistency.

The inside feels like traction physics.

Autism: structural preservation

Autism is often described through social difficulty, sensory sensitivity and routine.

Again, true enough to be useful, but not deep enough.

In the Compression Planes model, Autism is structure-dominant. It preserves relational stability, internal consistency and constraint integrity.

What is the actual structure?

What rule is being used?

Does this make sense?

Is this coherent?

What changed?

Why did it change?

What is the hidden pattern?

Autistic cognition often holds more structure than the environment expects. It may preserve detail that other people compress away. It may resist vague instructions because the missing constraint is not optional. It may struggle with sudden change because transition is not just behavioural; it requires rebuilding the model.

The strength is model integrity.

The cost is movement.

Once a structure is built, changing it can be expensive. Switching tasks, contexts, expectations, social modes or sensory environments may require more than "just adapting." It may require a full reconfiguration of the internal map.

That is why autistic overload often looks like rigidity from the outside but feels like preservation from the inside.

The person is not refusing flexibility as a moral stance.

The system is protecting coherence under high transition cost.

The internal logic might be:

I can move, but not instantly.

I can adapt, but not while the rules keep changing.

I can tolerate ambiguity inside a stable frame, but not when the frame itself is unstable.

That distinction matters.

Autism does not optimise for social smoothness first. It optimises for structural truth, predictability and coherent mapping.

That can be incredibly powerful.

It can also be extremely expensive in environments built around vague expectations, constant switching, sensory noise and hidden social rules.

AuDHD: not halfway between

AuDHD is not half Autism and half ADHD.

It is not “a bit rigid but also a bit distracted.”

It is a dual-pressure system.

One part of the system wants structure, stability and coherent mapping.

Another part wants novelty, momentum and salience.

Both can be strong.

That is why AuDHD can look so confusing from the outside and feel so contradictory from the inside.

Need routine, get bored by routine.

Need novelty, get destabilised by novelty.

Crave deep focus, struggle to enter or exit it cleanly.

Want social connection, find social performance exhausting.

Build systems, then rebel against the system.

See the whole pattern, then lose the thread while trying to explain it.

The AuDHD plane in the internal paper is described as a “coupled dual architecture”: not additive, not intermediate, but structurally tensioned. It combines high relational density with volatile aperture and salience-driven allocation.

That is the key.

AuDHD can produce unusually high modelling capacity when the two systems align. Deep structure plus rapid association is a serious combination. It can generate original connections, build frameworks, improvise inside complexity and see patterns across domains that other systems keep separate.

But the stability band can be narrow.

If holding and movement align, output can be exceptional.

If they desynchronise, collapse can look sudden.

One moment the person is coherent, fast, integrated and high-output. Then the environment changes, sleep drops, sensory load rises, social pressure increases, or the task loses salience, and the system falls out

of alignment.

From the outside, this looks inconsistent.

From the inside, it may feel lawful.

Not random.

Just fragile under certain combinations of constraint.

The Shoebox problem: ability is not access

This is where the Shoebox Model becomes useful.

The Shoebox Model says cognition under real conditions is not just about whether the person has the thought. It is about whether they can access and express it through constraints: aperture, noise, pressure and time. The core image is a LEGO structure inside a shoebox, visible only through a small hole, with lighting and audience pressure affecting what can be seen and described.

That model matters because neurodivergent people are often judged by output under bad access conditions.

The thought may be there.

The structure may be there.

The understanding may be there.

But the aperture is narrow.

The lighting is noisy.

The audience pressure is high.

Time is limited.

The person is tired.

The body is stressed.

The social stakes are too loud.

So the output comes out fragmented, delayed, over-detailed, under-explained, frozen or chaotic.

That does not mean the internal model was absent.

Performance is not ability.

Performance is ability filtered through conditions.

This is why someone can explain something brilliantly in private and blank in an exam. It is why someone can understand a social situation after the fact but not in the moment. It is why someone can write clearly but speak messily, or speak well but collapse afterward.

For ADHD, the aperture may depend heavily on salience and stimulation.

For Autism, the aperture may narrow under transition, ambiguity or sensory overload.

For AuDHD, the aperture may be wide during aligned hyperfocus and then almost vanish when structure and salience start pulling against each other.

For neurotypical cognition, the aperture may be most stable inside socially familiar conditions and may narrow under reputational threat, conflict or ambiguity that cannot be socially resolved.

Different systems.

Different bottlenecks.

Holding cost and movement cost

This is the clean technical heart of the model.

Every cognitive system has to hold models and move between models.

Holding cost is the cost of maintaining a stable representation.

Movement cost is the cost of switching, updating, reframing or transitioning between representations.

ADHD tends to have higher holding cost. The model may be hard to keep active unless salience keeps feeding it.

Autism tends to have higher movement cost. The model may be stable and detailed, but transitions can be expensive.

AuDHD can have both costs high, or worse, poorly synchronised. The person may build rich models and also experience unstable access to

them. They may be able to hold a structure deeply, then suddenly lose the ability to move it into action.

Neurotypical cognition often reduces both costs through shared context. The social environment provides a scaffold: common assumptions, expected scripts, normal pacing, acceptable levels of detail. That reduces cognitive overhead in ordinary group settings.

This does not make one system better.

It tells you where the energy goes.

That is what people miss.

A person's behaviour is not just output. It is output after cost.

Masking as compensatory projection

Masking is usually discussed as pretending.

That is too moralised.

The Compression Planes paper defines masking more structurally: **compensatory projection**, meaning externally presenting stability that exceeds internal energetic equilibrium.

That is a much better frame.

Masking is not simply lying.

It is not always conscious.

It is not always fake.

It is the system spending energy to make the outside look smoother than the inside feels.

In Autism, masking may mean scripted social fluency, controlled facial expression, forced flexibility, suppressed sensory discomfort and delayed shutdown.

In ADHD, masking may mean hyperproductivity, overcompensation, urgency tricks, hiding disorganisation, and using shame or panic as scaffolding.

In AuDHD, masking can be layered: social performance, structural control, salience management, emotional suppression and sensory

tolerance all running at once. The person may look unusually capable precisely because they are burning through compensation at an unsustainable rate.

In neurotypical cognition, masking may show up more through social composure, conformity, reputational management or suppression of disagreement for group stability.

High masking is not high wellness.

Low masking is not low effort.

High masking often means collapse is delayed.

Low masking often means friction appears earlier.

Both are adaptive responses to environment.

The question is not whether the person “can mask.”

The question is what masking costs and how long recovery takes afterward.

Collapse patterns

Different compression planes tend to fail differently.

Autism-dominant collapse often looks like shutdown, withdrawal, refusal to transition, sensory intolerance or loss of speech/access. The system reduces exposure to preserve structure.

ADHD-dominant collapse often looks like drift, abandonment, fragmentation, emotional reactivity, task loss or chaotic switching. The system releases holding load by reallocating attention.

AuDHD collapse can look nonlinear: high coherence followed by abrupt shutdown, fast output followed by disappearance, deep focus followed by paralysis, restlessness and exhaustion at the same time.

Neurotypical collapse may be more tied to social threat, reputational anxiety, relational conflict, conformity stress or loss of shared context.

None of these are moral failures.

They are collapse geometries.

The practical question becomes:

What pushed the system outside its stability band?

Was it transition load?

Low salience?

Sensory noise?

Audience pressure?

Time pressure?

Social ambiguity?

Too much holding?

Too much switching?

Too much masking?

That is a better question than “why are you like this?”

Why AuDHD is often missed

AuDHD is easy to miss because one part can hide the other.

Autistic structure can compensate for ADHD drift.

ADHD novelty can mask autistic rigidity.

High intelligence can mask both.

Social learning can hide autism.

Crisis performance can hide ADHD.

The person may look capable because they have built scaffolding early. They may have learned to rehearse, script, overprepare, overthink, overperform, overexplain and overcorrect. The outside sees high output. The inside is a control room full of alarms.

This is why late recognition is common.

Not because the pattern was absent.

Because the person adapted before anyone noticed.

The internal “Au vs ADHD vs AuDHD” handout puts this plainly: high functioning means someone can appear competent, achieve, and be assumed fine, while the internal cost may be invisible.

That should be one of the core public points.

High functioning does not mean low struggle.

It often means high compensation.

A cleaner comparison

The simplest version:

Autism says:

preserve structure.

ADHD says:

follow salience.

Neurotypical says:

maintain shared flow.

AuDHD says:

preserve structure and follow salience, somehow, at the same time.

The lived difference is not just preference. It is regulation.

An autistic-weighted system may feel safest when the model is stable.

An ADHD-weighted system may feel most alive when the signal is strong.

A neurotypical-weighted system may feel most comfortable when shared context is intact.

An AuDHD system may need stability to function and novelty to remain engaged, which means the conditions for thriving can be unusually specific.

That is not special pleading.

It is design logic.

If you need both structure and stimulation, then too little structure causes chaos, while too much structure causes suffocation.

If you need deep focus but have unstable switching, then starting, stopping and returning become major costs.

If you can perform socially but analyse the performance while doing it, then "socially capable" does not mean "socially cheap."

If you can build complex internal models but struggle to express them through a narrow aperture under pressure, then being misunderstood becomes predictable.

The person is not inconsistent.

The environment is only seeing outputs, not the compression process.

What this model is not

This model is not saying all autistic people are the same.

It is not saying all ADHD people are the same.

It is not saying neurotypical people lack depth.

It is not saying AuDHD is superior.

It is not replacing diagnosis, clinical assessment, medication, therapy or lived community knowledge.

It is not an identity hierarchy.

It is a structural map.

A way to move from moral language to constraint language.

Lazy becomes: low salience, high holding cost, poor traction.

Rigid becomes: high movement cost, transition overload, structure protection.

Inconsistent becomes: narrow stability band, masking debt, salience-dependent access.

Dramatic becomes: nervous-system load, emotional intensity, delayed collapse.

Overthinking becomes: high modelling demand, unresolved ambiguity, threat-weighted simulation.

When the frame changes, the interpretation changes.

And when interpretation changes, support can become more precise.

What would help

The support differs because the costs differ.

For ADHD-weighted systems, support often needs to increase traction: external structure, salience, novelty, urgency without panic, body doubling, shorter loops, visible progress, reduced admin friction.

For Autism-weighted systems, support often needs to reduce transition cost: predictability, clear constraints, sensory control, preparation time, stable routines, fewer ambiguous demands.

For AuDHD systems, support often needs to do both without letting one destroy the other: flexible structure, novelty inside boundaries, recovery after high output, explicit transition design, permission to build systems without being trapped by them.

For neurotypical systems, support often works through shared context, social repair, role clarity, relational stability and reduced reputational threat.

None of this is about giving people an excuse.

It is about designing conditions that match the system.

A good support strategy reduces unnecessary cost.

It does not erase responsibility.

It makes responsibility executable.

Closing

The point of this model is not to make labels more complicated.

It is to stop flattening people into outputs.

A label is only a compression of a bigger shape.

Autism, ADHD, AuDHD and neurotypical are not rankings of worth. They

are not fixed destinies. They are not excuses. They are not aesthetic identities.

They are ways minds reduce the world into something usable.

Different compression.

Different strengths.

Different costs.

Different collapse patterns.

The real question is not:

which type are you?

The better question is:

what does your system preserve, what does it spend, and what makes it collapse?

That is where understanding starts.

SHARE

LIKE COMMENT RESTACK

© 2026 Joe Maxwell
548 Market Street PMB 72296, San Francisco, CA 94104
Unsubscribe

Start writing