Intelligence as Tension Processing: *A Pathway to Algorithmic Organizations*

A synthesis prompted with love • Thomas Thomison

Introduction

Intelligence has long been viewed as the capacity for problem-solving, but emerging perspectives suggest a more dynamic framing. This paper redefines **intelligence** as the capacity to navigate and optimize within **complex tension spaces**, where *tension* refers to discrepancies, conflicts, or challenges that signal opportunities for growth and innovation. In contrast to static problem-solving, "**tension processing**" emphasizes continuous identification, engagement, and resolution of these gaps. This integrative definition bridges computational theories of adaptive algorithms with humanistic theories of multifaceted cognition, reflecting both the current explosion in AI research and enduring insights into human intellect. We explore how diverse viewpoints – from AI pioneers and cognitive scientists to psychologists and organizational theorists – converge on the idea that intelligence thrives on handling tension. We then show how this synthesis supports **PowerShift® Principles** and the notion of an **Algorithmic Organization** (akin to *Level 5 AGI* capable of running an entire enterprise) (AGI: OpenAI shares its plan to develop super AI) (AGI: OpenAI shares its plan to develop super AI). Finally, we distill a single, rigorous sentence defining intelligence in these terms.

Computational Perspectives: Navigating Complex Tension Spaces

Modern computational intelligence is often described in terms of searching through vast problem spaces to achieve goals. Recasting this in terms of tension processing, we can say that an intelligent system traverses a landscape of tensions (constraints to satisfy, objectives to meet, errors to reduce) via diverse algorithmic and heuristic pathways. Rather than a straight-line solve, it continually *adapts*, iteratively refining potential solutions in response to feedback.

- **Adaptive Bio-Computational Intelligence (Michael Levin):** Developmental biologist Michael Levin views intelligence as an *emergent, multi-scale capacity* present even in biological tissues and cells. He proposes that life is built as a "multi-scale competency architecture," where each level – cells, tissues, organs, organisms – *solves problems in its own space* (Can cells think? - Big Think). For example, cells regulate gene expression and morphology to close the gap between an injury and a healed tissue, effectively computing how to reach a target anatomy. Levin emphasizes that these layers of biological agents have goals and can pursue different paths to achieve the same

outcome, which he notes echoes William James' classic definition of intelligence (the ability to reach the same goal by different means) (Can cells think? - Big Think). In other words, even simple organisms and cells exhibit *tension processing* by detecting discrepancies (e.g. a wound or developmental error) and acting to resolve them. Recognizing this "collective intelligence" across scales is crucial to understanding how complex form and behavior emerge (Can cells think? - Big Think) (Can cells think? - Big Think). Levin's perspective aligns with computational ideas of **context-dependent, hierarchical information processing** and **trial-and-error heuristics** ([2411.15243] Bio-inspired AI: Integrating Biological Complexity into Artificial Intelligence) – traits that allow both organisms and algorithms to adaptively navigate tension-laden environments.

- **Cognitive Architectures and Model-Building (Joscha Bach):** Cognitive scientist Joscha Bach defines intelligence succinctly as *"the ability to make models"*, especially models that serve decision-making and control (Is the universe a computer? (with Joscha Bach) | Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter). In Bach's view, an intelligent agent is one that can internally simulate aspects of the world to evaluate different courses of action toward its goals (Is the universe a computer? (with Joscha Bach) | Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter). This emphasizes **adaptive representation**: the system builds and refines a model until the tension between prediction and reality is minimized. Crucially, Bach notes that intelligence "happens in the service of control," meaning it is driven by some preference or goal state (Is the universe a computer? (with Joscha Bach) | Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter). The agent perceives a *discrepancy* between the current state and a desired state, then uses its internal models to test ways to close that gap. For instance, a cognitive architecture might have subsystems for perception, motivation (urges/goals), and planning (Implementing Intelligence Principles of Synthetic ... - Michael Hogan) – all working together to reduce the tension between what *is* and what *ought to be*. Bach's stance intersects with AI researcher François Chollet's formal idea that intelligence is an agent's *generalization ability*: its efficiency in turning prior knowledge and experience into skill at new tasks (Is the universe a computer? (with Joscha Bach) | Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter). In plain terms, *"intelligence is the rate at which a learner turns its experience and priors into new skills"* for tasks involving uncertainty (). A system that quickly adapts to novel tensions (new problems) by updating its internal models is therefore more intelligent. This perspective reinforces that at the computational core, to be intelligent is to continually model and resolve the *tensions between expectations and reality*.

- **Evolutionary Search and Creative Divergence (Kenneth Stanley):** Traditional algorithms aim to optimize directly for a given objective, but Kenneth Stanley's work in neuroevolution shows that single-minded pursuit of a goal can lead to blind alleys. He introduced the concept of **novelty search**, demonstrating that actively *seeking diversity and interesting deviations* can outperform objective-driven approaches (Abandoning objectives: evolution through the search for novelty alone - PubMed) (Abandoning

objectives: evolution through the search for novelty alone - PubMed). The problem with a strict objective is that it defines one tension to eliminate (the performance gap on that objective), which can misdirect search into deceptive local optima (Abandoning objectives: evolution through the search for novelty alone - PubMed). Stanley's algorithms instead reward stepping into **new territory** – effectively *discovering new tensions and challenges* rather than only solving predefined ones. This often leads to more complex and innovative solutions (Abandoning objectives: evolution through the search for novelty alone - PubMed) (Abandoning objectives: evolution through the search for novelty alone - PubMed). For example, in a maze navigation task, an objective-based AI might get stuck improving a suboptimal path, whereas a novelty-based AI explores unusual routes and eventually finds a truly optimal exit (Abandoning objectives: evolution through the search for novelty alone - PubMed) (Transcript of Episode 130 – Ken Stanley on Why Greatness Cannot Be Planned - The Jim Rutt Show). Stanley's *open-ended evolutionary* approach treats the search space as a complex landscape of potential tensions to explore, rather than a single hill to climb. Intelligence, from this view, involves maintaining *creativity and flexibility* – the ability to sometimes set aside or reframe a goal when current progress plateaus, and to embrace the tension of the unknown. By following "the path of interestingness" (i.e. whatever introduces a new informative discrepancy) (Transcript of Episode 130 – Ken Stanley on Why Greatness Cannot Be Planned - The Jim Rutt Show), an intelligent system can uncover novel solutions that a rigid strategy would miss. This resonates with the idea that continuous innovation comes from continually engaging with new tensions, not just optimizing the same metric. In essence, Stanley's work upgrades problem-solving by adding *exploration* as a first-class component – a form of tension processing where the system questions the problem definition itself and finds *creative tensions* that spur breakthroughs.

- **Emergence from Simple Rules (Stephen Wolfram):** Physicist Stephen Wolfram's investigations into cellular automata and complex systems reveal that *simple computational rules can generate immense complexity*. Wolfram famously showed that even a trivial rule (like flipping a cell's color based on its neighbors) can yield patterns so intricate that they appear random or organic (A Study in Complexity). This concept of **emergent complexity** suggests that what we experience as intelligence might arise from many small, distributed tension-resolutions happening in parallel. For example, each cell in a cellular automaton responds to a local tension (a mismatch between its neighbors' pattern and some rule), and the aggregate effect produces globally coherent structure without any central planner. Wolfram posits that the universe itself may operate on simple rules that give rise to all the complexity of physics, life, and mind (A Study in Complexity). In the context of AI, this implies that a collection of simple processing units (like neurons in a deep network) can self-organize to exhibit intelligent behavior, given the right iterative rules. The key is that these units must interact and adjust to local *tensions* (differences between their computed output and what's expected or needed). Modern deep learning echoes this: each neuron adjusts its weight to reduce the error (a tension) between predicted and true output, and collectively the network learns features

of great sophistication. Wolfram's perspective enriches our definition by highlighting that intelligence can *emerge* from the bottom-up: it's not always a top-down analytical process, but often a self-organizing *dance of countless small tension-resolutions*. From a few basic operations optimizing local tensions, we get high-level abilities like vision, language, or abstract reasoning (A Study in Complexity) (A Study in Complexity). This underscores that navigating tension spaces can be done by simple agents en masse, as well as by complex deliberative agents – in both cases, the hallmark is that *order and insight emerge from iteratively resolving discrepancies*.

Computational Synthesis: Across these viewpoints, computational intelligence can be seen as an **iterative search for equilibrium in a sea of tensions**. Whether it's an evolutionary algorithm exploring new niches, a neural network adjusting weights, or a cognitive architecture planning actions, the system is continually driven by *differences*: between current and goal state, prediction and observation, what exists and what could be. Intelligence is not a static algorithm but an ongoing *process* of reducing those differences in a way that often uncovers new ones (e.g. solving one problem yields the next challenge). This aligns with the idea of adaptive search and optimization: the intelligent agent **chooses pathways** (algorithms or heuristics) appropriate to the landscape – sometimes greedy and focused, other times random and exploratory – to *navigate complex tension spaces*. As we will see, these computational insights mirror many human cognitive strategies and give a formal backbone to the notion of tension processing.

Humanistic Perspectives: Multiple Intelligences and Tensions

Human intelligence has been recognized as multifaceted, extending beyond abstract reasoning or IQ. The humanistic perspective brings in the richness of different cognitive abilities and the role of emotional and practical context in defining intelligence. When reframed in terms of tension processing, each facet of intelligence can be seen as skill in managing certain kinds of tensions – whether linguistic ambiguities, spatial challenges, social conflicts, or self-regulation struggles.

- **Howard Gardner's Multiple Intelligences:** Psychologist Howard Gardner proposed that intelligence is not a single monolithic ability but a *spectrum of cognitive capacities*. In his theory of **Multiple Intelligences**, he originally identified seven, later eight, distinct intelligences that humans exhibit: for example, **linguistic**, **logical-mathematical**, **spatial**, **musical**, **bodily-kinesthetic**, **interpersonal**, **intrapersonal**, and **naturalistic** (Theory of multiple intelligences - Wikipedia) (Theory of multiple intelligences - Wikipedia). Each of these can be thought of as a domain where specific types of tensions are encountered and resolved. A linguistically intelligent person navigates the tensions of language – ambiguities of meaning, the struggle to communicate a thought precisely – finding the right words to bridge gaps in understanding. A person strong in

interpersonal intelligence excels at reading social cues and resolving conflicts between people's intentions or emotions. Gardner defined intelligence itself as *"a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture."* (Theory of multiple intelligences - Wikipedia). This definition underscores that intelligence always operates in context (a culture, a setting) and is about *processing information* to address meaningful challenges. In other words, intelligence manifests when an individual engages with a problem or discrepancy that *matters* in their environment and finds a way to resolve or leverage it. By recognizing multiple intelligences, Gardner's framework shows that the **tension spaces** humans navigate are diverse: the logical contradictions in a mathematical proof, the physical resistance in learning a new dance move, or the moral dilemmas in ethical decisions all represent different forms of tension calling on different intelligences. A truly comprehensive definition of intelligence must account for this diversity – the human mind's ability to meet various challenges on their own terms. Our tension processing view accommodates Gardner's insight by framing each "intelligence" as proficiency in a certain tension-laden domain (words, numbers, space, people, etc.), each offering opportunities for growth and creativity when engaged skillfully.

- **Robert Sternberg's Triarchic Theory:** Robert Sternberg introduced the **Triarchic Theory of Intelligence**, which breaks down human intellect into three fundamental aspects: **analytical**, **creative**, and **practical** intelligence (What Is Intelligence? – General Psychology) (What Is Intelligence? – General Psychology). Analytical intelligence (componential) involves abstract thinking and logical reasoning – essentially problem-solving in well-defined situations. Creative intelligence (experiential) is the ability to deal with novel situations and to come up with innovative solutions or artistries. Practical intelligence (contextual) is often described as "street smarts" – the ability to adapt to changing real-world contexts, solve everyday problems, and **shape or select environments** to suit one's goals (Triarchic theory of intelligence - Wikipedia). Sternberg's definition of intelligence is *"mental activity directed toward purposive adaptation to, selection of, and shaping of real-world environments relevant to one's life."* (Triarchic theory of intelligence - Wikipedia). This highlights *adaptation* and *purpose* – the intelligent individual can modify their approach or even alter the environment to reduce the mismatch between their needs/goals and the situation. In terms of tension processing, Sternberg's three facets can be seen as complementary strategies for resolving tensions:

    - **Analytical**: Tackling well-structured problems (tensions that have a clear solution path) by breaking them down logically. For example, solving a physics homework problem is resolving the tension between a question and an answer through known formulas and deduction.
    - **Creative**: Handling ill-defined or novel tensions by thinking outside the box. When faced with a completely new problem or a situation with no apparent

solution, creative intelligence finds *alternative pathways* – it might introduce a new concept or reframe the tension in a solvable way.
    - **Practical**: Addressing the tension between oneself and the environment by adapting effectively. This could mean knowing how to navigate office politics (social tension), or how to fix a broken appliance with improvised tools (functional tension). Practical intelligence often resolves tensions by implementing solutions in action and adjusting on the fly, not just in theory.
- By integrating these, Sternberg argued that successful intelligence involves balancing analytical, creative, and practical abilities (Triarchic theory of intelligence - Wikipedia). An intelligent person not only solves academic or theoretical problems (analytical) but also *generates new ideas* when needed and *applies knowledge in real contexts*. In our unified view, this maps to recognizing that tensions come in different flavors – some are straightforward puzzles, some are unprecedented challenges, some are everyday hurdles – and true intelligence is the capacity to engage with each appropriately. This Triarchic model supports the notion that intelligence is an *ongoing interplay* of different modes of tension processing: sometimes optimizing known solutions, sometimes innovating, and sometimes adapting to ensure the solution actually works in practice.

- **Daniel Goleman's Emotional Intelligence:** Daniel Goleman brought to prominence the idea that *recognizing and managing emotions* is a critical aspect of intelligence, especially in social contexts. **Emotional Intelligence (EQ)**, in Goleman's model, encompasses abilities like **self-awareness**, **self-regulation**, **social awareness (empathy)**, and **relationship management** (5.5 Emotional Intelligence – Introduction to Communications) (5.5 Emotional Intelligence – Introduction to Communications). He defined emotional intelligence as *"the ability to identify, assess, and control one's own emotions, the emotions of others, and that of groups."* (5.5 Emotional Intelligence – Introduction to Communications). From a tension processing perspective, this directly addresses *internal and interpersonal tensions*. For example, self-awareness detects an internal tension – say, the discrepancy between one's ideal calm state and a current feeling of anger. Self-regulation then intervenes to resolve that tension (perhaps by reframing the situation or taking deep breaths) to bring one's emotional state back in line with goals or norms. On the interpersonal side, social awareness means sensing others' emotions or the "vibe" in a group – essentially perceiving tensions or harmonies within a social system. Relationship management would involve acting to resolve negative tensions (soothing someone's hurt feelings, mediating a conflict) or amplify positive ones (celebrating a success, building rapport). Emotional intelligence highlights that not all tensions are logical puzzles; many are *affective and social dissonances* that require empathy and self-control to navigate. A highly intelligent response in a team setting, for instance, might be to recognize that two colleagues have unspoken frustrations (a tension) and to facilitate an honest conversation to clear the air, rather than to let the conflict simmer and hinder collaboration. Goleman's work aligns with our definition by expanding "intelligent behavior" to include *catalyzing growth and harmony in human relationships* – essentially, turning emotional conflicts into opportunities for improved understanding and cooperation. It also reinforces that *awareness* is the first step of

tension processing: one must first perceive the gap (whether an unmet need, a miscommunication, or a personal trigger) before one can intelligently address it. By including emotional and social dimensions, our definition acknowledges that *self and social awareness are integral to intelligence* – they allow us to detect crucial tensions that purely analytical minds might miss, and thereby drive adaptation not just in technical tasks but in the realm of human interaction and personal growth.

Humanistic Synthesis: The human-centered theories collectively paint intelligence as a **multidimensional aptitude for handling the challenges of life**. They remind us that intelligence is expressed in varied contexts – in classrooms, in art studios, on sports fields, in offices, within oneself – and in each context there are *tensions to resolve*: questions to answer, new situations to master, coordination to achieve, emotions to align. The tension processing view provides a common thread: whether it's solving a math problem, composing a melody, navigating a career, or empathizing with a friend, intelligence involves *sensing the gap* (the tension between what is and what could/should be) and *figuring out a way to bridge it*. Moreover, these theories emphasize continuous development. For instance, Gardner's intelligences can be nurtured; Sternberg's triad suggests one can balance and improve these abilities; Goleman points out EQ can be learned and refined over time. This resonates with the idea that tension processing is an ongoing, **iterative practice** – humans refine their ability to deal with bigger or more subtle tensions as they develop. In summary, the humanistic perspective broadens the scope of intelligence beyond algorithmic problem-solving, highlighting creativity, context, and emotion. Any definitive definition of intelligence must integrate these, describing not just a cold engine of logic but a living system – human or artificial – that *proactively engages with the full range of challenges in its environment*.

Intelligence as Tension Processing: An Integrative Framework

Bringing together the computational and humanistic viewpoints, we arrive at a holistic picture of intelligence: **the capacity to navigate, negotiate, and optimize within complex tension spaces**. In this framework, *tensions* are the signals of both problems and possibilities – they arise from misalignments (between goal and current state, between different goals, or between different agents) and resolving them leads to learning, growth, or innovation. **Tension processing** is thus the engine of intelligence, turning frictions into forward motion. This approach is an evolution of traditional problem-solving concepts in several key ways:

- **Continuous Sensing and Adaptation:** Rather than treating problem-solving as episodic (solve one problem, then the next), tension processing implies a *continuous loop*. An intelligent agent – whether a person, an AI, or an organization – is constantly scanning for tensions (discrepancies, errors, unmet opportunities) in its internal and external environment. Each tension is addressed in turn, using appropriate strategies, and the outcome of that process feeds back into the system, which then senses new

tensions. This aligns well with how autonomous systems are designed (feedback loops) and how human cognition operates in real life. For example, a self-driving car is perpetually detecting differences between its predicted path and actual trajectory and making minute steering adjustments – a real-time tension processing of staying centered in a lane. Similarly, a business leader is continually noticing gaps between the company's performance and targets or between team capacities and project demands; by treating these as *tensions to process* rather than failures, the leader can iteratively improve operations. The emphasis is on *proactive engagement*: intelligence doesn't wait for a fully formed "problem" to be handed to it, but actively *surfaces tensions* as soon as they manifest. This is analogous to a thermostat correcting temperature drift before it becomes an extreme problem. It's an upgrade from reactive problem-solving to **anticipatory and adaptive regulation**.

- **Optimization in Complex Spaces:** Tension processing acknowledges that real-world challenges often involve **trade-offs and conflicts** between multiple goals or constraints. Classic problem-solving might focus on one objective at a time, whereas an intelligence framed this way is balancing many. Consider a skilled city planner – they must manage tensions between development and conservation, traffic flow and pedestrian safety, budget limits and community needs. There is no single "problem" with a right answer, but a *tension space* of competing factors. The planner's intelligence lies in navigating this space, finding creative compromises or win-win innovations (like a design that both improves traffic and adds green space). This concept connects to multi-objective optimization in computational terms, where algorithms seek Pareto-optimal solutions in a space of competing objectives. It also echoes Sternberg's practical intelligence – shaping the environment – by optimizing not just for one target but for a harmonious fit within a whole system. By viewing such scenarios as tension spaces, we legitimize the idea that **intelligence is about managing complexity**, not just solving isolated puzzles. It's the capacity to *see the forest and the trees*, identify where the biggest strains are (what tension, if resolved, yields the most improvement?), and then apply effort there. This is inherently a form of **meta-cognition or executive control**: deciding which tensions to tackle and how, which to monitor, and which can be ignored or deferred. An intelligent system is therefore one that efficiently allocates its attention and resources across many tension signals, much like a good captain monitoring an entire ship, adjusting course, sails, and crew coordination all at once.

- **Innovation and Growth Mindset:** By treating discrepancies and conflicts as *fuel* rather than as mere obstacles, tension processing imbues a growth-oriented mindset into the definition of intelligence. Every tension carries information: a conflict between team members indicates something about organizational culture or project design that, if improved, could make the team stronger. A failed experiment in a lab highlights a gap in understanding, pointing scientists toward a new hypothesis. Even an AI that encounters data it can't classify has discovered a tension between its current knowledge and the input – possibly leading to the development of a new category or feature detector. This is akin to how evolution works: **variation** (mutations, changes) creates tensions (an

organism not perfectly adapted to its environment), and **selection** resolves them over generations, resulting in new adaptations. By seeing tension processing as fundamental, we align intelligence with *learning and evolution*. Each resolved tension often raises new questions – this continuous cycle prevents stagnation. In fact, an entity with no tensions at all would be static and unchanging (perhaps in a state of equilibrium but with no ability to cope if conditions change). Intelligence, as we define it, implies a certain restlessness or *creative instability*: it's always in pursuit of a better alignment, a reduction of some error, or the exploitation of some untapped opportunity. Psychologist Carol Dweck's research on growth mindset – the belief that abilities can be developed through dedication and hard work – resonates here: viewing challenges as opportunities to grow is essentially treating them as tensions that one can learn to master. Our definition encourages that outlook intrinsically.

- **Holacracy and Organizational Tensions:** An illustrative real-world implementation of tension processing is found in **Holacracy**, a system of organizational governance. Holacracy explicitly uses the term "tension" to denote "a gap between the current reality and the potential you sense" (The Core Concepts, Benefits and Limitations of Holacracy) in the organization. Crucially, it treats each tension as *"an opportunity to improve."* (The Core Concepts, Benefits and Limitations of Holacracy) Teams hold regular governance and tactical meetings specifically to *process tensions* – meaning they discuss issues or ideas for improvement and integrate changes that resolve those gaps in role definitions, policies, or workflows. For example, if an employee feels their role's purpose isn't clearly defined (a tension between expectations and reality), they raise that tension in a governance meeting. The group then adapts the role or clarifies the policy, resolving the tension and making the organization more effective. Holacracy's success in some companies demonstrates that systematically processing tensions leads to an agile, evolving organization where small problems are solved before they balloon, and innovations are adopted quickly (The Core Concepts, Benefits and Limitations of Holacracy) (The Core Concepts, Benefits and Limitations of Holacracy). This organizational practice validates our definition on a larger scale: it shows *collective intelligence* at work, with the organization as a whole exhibiting the capacity to navigate and optimize tension spaces. Each person acts as a sensor for tensions in their domain and has the agency to propose resolutions, much like neurons firing error signals in a brain or modules in an AI updating their parameters. Over time, the organization continuously adapts – effectively becoming a living intelligent system that "learns." Notably, Holacracy requires **emotional intelligence and transparency** from participants, because raising tensions constructively and processing them without ego defense is key to the system. This ties back to Goleman's EQ: self and social awareness ensure that even interpersonal frictions become productive. By integrating this organizational example, we underscore that our definition scales from the micro (cell, neuron, individual) to the macro (teams, firms, economies). In all cases, *tension* is the spark that triggers an intelligent response, and if handled well, leads to resilience and improvement (The Core Concepts, Benefits and Limitations of Holacracy) (The Core

Concepts, Benefits and Limitations of Holacracy).

- **From AI to AGI: Toward Algorithmic Organization:** As AI systems advance, the concept of tension processing can guide the development of more general and autonomous intelligence. Current AI like deep learning models mostly operate within narrow tasks, but the frontier is to create AI that can *set its own goals, handle open-ended problems, and coordinate multiple objectives* – essentially, AI that can process tensions in a broad sense. OpenAI's conceptual roadmap for AGI (Artificial General Intelligence) hints at this progression: from Level 1 (chatbots handling simple Q&A) to Level 4 (AI innovators contributing new ideas) and finally Level 5: **"AI that is capable of doing all of the work of an organization independently."** (AGI: OpenAI shares its plan to develop super AI) (AGI: OpenAI shares its plan to develop super AI) This Level 5, an AI-run organization, is the epitome of an *Algorithmic Organization*. It would entail AI agents that manage business strategies, operations, and adaptation without human intervention – in other words, a fully self-driving company. For such an AI to work, it must be able to detect and resolve a vast array of tensions: market shifts, internal inefficiencies, product issues, customer needs, conflicting departmental goals, and so on. Our definition of intelligence as tension processing directly supports this vision. It implies building AI with the architectures to perceive multivariate discrepancies (much like Holacracy roles sensing tensions) and the decision-making heuristics to iteratively improve on all fronts. In practical terms, this could involve a combination of reinforcement learning (to handle numeric optimization tensions), natural language understanding (to handle informational or communication tensions), and planning algorithms (to handle long-term goal conflicts). Thought leaders like Yann LeCun emphasize the need for AI to have **world models and reasoning** to achieve this autonomy (Towards Machines That Can Learn, Reason and Plan) – essentially the AI needs to internally model complex reality to foresee tensions and plan to resolve them. Geoff Hinton and others have pointed out that current AI lacks human-like common sense and flexibility (Sam Altman's Shocking AGI Prediction: Are We Ready for 2025? - Geeky Gadgets); framing goals as tension resolution could push AI to develop more generalized reasoning (since it must tackle novel conflicts, not just repeat training data patterns). François Chollet's emphasis on broad generalization and skill acquisition (Is the universe a computer? (with Joscha Bach) | Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter) also fits: an AGI must rapidly learn new tasks (resolve new tensions) with minimal data, which our definition considers a hallmark of intelligence. Moreover, **safety and alignment** research in AI – championed by experts like Dario Amodei, Elon Musk, and Sam Altman – can be seen through this lens: ensuring that an AI *shares our values* means it recognizes certain tensions (e.g. actions that cause ethical conflicts or harm) and prioritizes resolving them in favor of human-beneficial outcomes. In a tension-processing AGI, if the AI senses a tension between a proposed action and a core ethical principle, it would treat that as a problem to solve (finding an alternative action) rather than ignoring it. This is aligned with the idea of *decentralized alignment via multi-agent systems* in the PowerShift approach, where diverse agents negotiate and check each other, akin to a marketplace resolving tensions

among different objectives (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs). In summary, defining intelligence as tension processing provides a unifying language to discuss human intelligence, evolving AI capabilities, and even organizational governance. It asserts that the essence of being intelligent – be it a person or a machine – lies in **actively engaging with the discrepancies that reality presents and turning them into opportunities for new equilibria** (solutions, understandings, creations).

To clarify how these various perspectives align or contribute to this framework, the following table provides a comparative overview:

Perspective/Theory	Key Idea of Intelligence	Alignment with "Tension Processing"
Michael Levin (Adaptive Biology)	Intelligence is multi-scale, collective, and embodied; even cells and tissues solve problems in morphological and physiological spaces (Can cells think? - Big Think) (Can cells think? - Big Think).	Supports viewing tensions as multi-level discrepancies (e.g., injury vs. healed state). Each level of life detects gaps and strives to close them, treating those gaps as signals for adaptive action (tension resolution toward a target anatomy or function).
Joscha Bach (Cognitive Architecture)	Intelligence is model-building for control – using internal simulations to achieve goals ([Is the universe a computer? (with Joscha Bach)	Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter](https://podcast.clearerthinking.org/episode/126/joscha-bach-is-the-universe-a-computer/#:~:text=JOSCHA%3A%20Personally%2C%20I%20think%20intelligence,some%20of%20its%20actions%20will)) ([Is the universe a computer? (with Joscha Bach)

Kenneth Stanley (Evolutionary Search)	Intelligence (especially in AI) flourishes via exploration and novelty rather than strict objective optimization (Abandoning objectives: evolution through the search for novelty alone - PubMed) (Abandoning objectives: evolution through the search for novelty alone - PubMed). Open-endedness and creativity are central.	Aligns by viewing tension broadly: not just one predefined problem, but many potential interesting deviations. An intelligent agent should sometimes *seek new tensions* (novel challenges) to avoid getting stuck. Resolving one tension can create new ones, and exploring those leads to innovation – a virtuous cycle of tension-driven creativity.
Stephen Wolfram (Emergence & Complexity)	Intelligence (and complexity in nature) can emerge from simple components following simple rules (A Study in Complexity). No central intelligence is needed for complex behavior to arise.	Suggests that at a fundamental level, intelligence may be the aggregate effect of many local tension resolutions. Each simple rule resolves a tiny tension (e.g., a bit of mismatch in a pattern); scaling this up creates emergent order. Supports the idea that *distributed tension processing* (like many neurons each reducing error) yields global intelligence.
Howard Gardner (Multiple Intelligences)	Intelligence is pluralistic – various domains of ability (linguistic, spatial, etc.), each valuable for solving problems or creating products in a cultural context (Theory of multiple intelligences - Wikipedia).	Affirms that tensions come in many forms (linguistic ambiguities, spatial puzzles, interpersonal issues, etc.). An intelligent individual processes tensions across these domains. Our definition encompasses this by not restricting “problem” to any single type – any gap between current and desired in any domain calls on the relevant intelligence.

Robert Sternberg (Triarchic Theory)	Intelligence is the interplay of analytical, creative, and practical abilities used to adapt to and shape real-world environments (Triarchic theory of intelligence - Wikipedia) (What Is Intelligence? – General Psychology).	Fits well: **Analytical** intelligence addresses structured tensions (well-defined problems), **Creative** intelligence tackles novel or reframed tensions, **Practical** intelligence handles contextual, everyday tensions (adapting self or environment). Together, they map onto a comprehensive tension-processing skillset.
Daniel Goleman (Emotional Intelligence)	Intelligence includes recognizing and managing one's own and others' emotions; key components are self-awareness, self-regulation, empathy, and social skills (5.5 Emotional Intelligence – Introduction to Communications) (5.5 Emotional Intelligence – Introduction to Communications).	Directly maps to tension processing in the emotional/social realm. Self-awareness catches internal tensions (feelings vs. desired state), social awareness catches interpersonal tensions (discord vs. harmony), and management skills resolve these constructively. It adds that *not all tensions are cognitive* – emotional tensions are central to human adaptation.
Contemporary AI Thought Leaders (Hinton, etc.)	Emphasize generalization, world modeling, and overcoming current AI limitations. Chollet defines intelligence as skill-acquisition efficiency across tasks (); LeCun advocates for architectures with predictive world models for reasoning (Towards Machines That Can Learn, Reason and Plan).	Their views underscore needs for AGI: an AI must handle **novel tensions** (tasks it wasn't directly trained on) – essentially generalizing solutions. World models are tools for tension processing, allowing an AI to simulate outcomes and detect conflicts in advance. These perspectives push AI towards our definition: an AGI should *notice and resolve any salient tension in its environment or goals*, which requires broad

		reasoning and learning capabilities.
Holacracy (Organizational Method)	Treat every "tension" (gap between what is and what could be) as an impetus for organizational evolution (The Core Concepts, Benefits and Limitations of Holacracy). Distributed authority allows rapid processing of tensions at all levels.	Serves as a real-world proof of concept for tension processing. It shows that when an organization systematically identifies and addresses tensions, it becomes more adaptive and innovative (The Core Concepts, Benefits and Limitations of Holacracy) (The Core Concepts, Benefits and Limitations of Holacracy). This aligns perfectly, demonstrating that collective intelligence = collective tension processing.

Table: Alignment of various intelligence theories with the "intelligence as tension processing" framework. All perspectives, from biological and AI theories to psychology and organizational design, either explicitly or implicitly revolve around detecting gaps (tensions) and acting to resolve them, thus supporting the integrative definition. (Can cells think? - Big Think) (The Core Concepts, Benefits and Limitations of Holacracy)

PowerShift Principles and the Algorithmic Organization

The redefinition of intelligence as tension processing is not just theoretical – it directly supports frameworks like **PowerShift®** and the quest for advanced AI-driven organizations. PowerShift Principles, which include *Purpose, Structure, Awareness, Agency,* and *Clarity*, are designed to enable self-organization and self-management in human-AI systems (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs). Let's briefly examine how our definition aligns with these principles:

- **Purpose:** A clear purpose provides a reference for what constitutes a tension – it defines the desired states. Our definition assumes an intelligent agent has goals or preferred outcomes (implicit in any tension is a notion of what "better" looks like). Whether in a human or AI context, purpose focuses the intelligence on *meaningful* tensions (those whose resolution furthers the mission). For instance, an AGI running a company will prioritize tensions that affect its core purpose (say, customer satisfaction or profitability) over random noise. PowerShift emphasizes shared purpose in a network of agents (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration

(Part 2) - Google Docs) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs), which means all agents align on what tensions are worth addressing.

- **Structure:** A structure (be it organizational roles or AI system architecture) determines *how* tensions are processed and by whom. In Holacracy, structure is given by roles and circles so that every tension finds an appropriate processing channel (The Core Concepts, Benefits and Limitations of Holacracy) (The Core Concepts, Benefits and Limitations of Holacracy). Similarly, an intelligent system needs a structured architecture: modules or sub-agents that specialize (one might monitor performance metrics, another handles safety constraints, etc.), so that specialized tensions go to the right problem-solvers. Our framework implies that designing intelligence involves designing structures that can route and resolve tensions efficiently. This mirrors how PowerShift DAOs propose marketplaces of agents that self-organize to address issues dynamically (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs).

- **Awareness:** This principle is about sensing and perceiving what's going on – essentially the *detection of tensions*. In our definition, awareness is paramount: without perceiving a discrepancy, no intelligent action is taken. Human intelligence relies on attention and mindfulness; AI intelligence relies on sensors and monitoring. PowerShift highlights collective awareness (transparency, data sharing) so that important signals aren't missed (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs). A tension-processing system thrives on rich, real-time feedback. For example, a Level 5 Algorithmic Organization would require instrumenting all processes with data feeds so the AI can continuously be aware of anomalies or inefficiencies (tensions) emerging anywhere in the org.

- **Agency:** Agency is the capacity to act on one's perception – to *process* the tension once identified. In a decentralized organization, every member or sub-agent needs the authority and capability to attempt a resolution within their domain. This matches our emphasis that intelligence is active and engaged. A thermostat that senses heat but cannot turn off the heater has no agency – thus it wouldn't be called intelligent. PowerShift fosters distributed agency so that solutions can be tried at the source of the tension without waiting for top-down commands (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs). In AI terms, this means designing systems that can execute responses autonomously when certain conditions are met (within safe bounds), rather than passively logging errors. Agency in an AGI also ties to *autonomy*: an intelligent system should decide and act in pursuit of tension resolution without needing constant human instruction, which is exactly what Level 5 AGI (Organizational AI) entails (AGI: OpenAI shares its plan to develop

super AI) (AGI: OpenAI shares its plan to develop super AI).

- **Clarity:** Clarity involves clear communication, standards, and expectations, ensuring everyone understands the outcomes of tension processing. In our context, clarity could be interpreted as the feedback loop closure – making sure the resolution of a tension is recognized and learned from. For humans, this might mean clearly articulating lessons learned from solving a problem so that knowledge is institutionalized. For AI, it means state changes and outcomes are transparent and interpretable. PowerShift's clarity principle might include keeping a transparent log of decisions and tensions addressed (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs), which aligns with AI alignment goals: you want an AGI's actions to be auditable and for the system to *explain which tension or objective it was addressing* when it took an action. Clear representation of goals and outcomes helps prevent misalignment (solving one tension while inadvertently exacerbating another due to lack of oversight).

Together, these principles create the conditions in which a *tension-processing intelligence* can flourish safely and effectively. A PowerShift DAO, for example, is essentially a network of human and AI agents all sensing tensions in their areas (Awareness), empowered to act (Agency) within a defined scope (Structure) towards a common Purpose, and doing so transparently (Clarity) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs) (Three-Part Series on PowerShift® DAOs and Organizational AGI Integration (Part 2) - Google Docs). This is highly consonant with our definition – it is basically intelligence operationalized at the organizational level.

Finally, considering **Algorithmic Organization Level 5 (AGI)**: by defining intelligence as navigating tension spaces, we acknowledge that a truly advanced AI will need to handle the full spectrum of issues an organization faces. OpenAI's notion that AGI at level 5 can run an entire organization implies the AI can integrate strategic tensions (long-term planning vs. short-term needs), operational tensions (efficiency vs. robustness), human-centered tensions (employee satisfaction vs. output), ethical tensions, market tensions, etc., and continuously balance and rebalance them as conditions change (AGI: OpenAI shares its plan to develop super AI) (AGI: OpenAI shares its plan to develop super AI). The only feasible way to achieve that is to build AI systems grounded in tension processing: systems that treat every unexpected event, conflict of objectives, or performance gap as something to analyze, learn from, and respond to. In essence, our redefinition is a blueprint for what *kind* of intelligence such an AGI must have – not just fixed problem-solving algorithms, but a living process of *tension-driven self-improvement*. This connects deeply with the ethos of both Holacracy and PowerShift: an organization (whether run by humans, AIs, or both) can become an evolving algorithm unto itself, if it is designed to relentlessly ferret out tensions and iterate solutions. That is organizational intelligence in action.

Conclusion

In conclusion, intelligence can be definitively defined in a way that spans neurons to nations and algorithms to artists – capturing what all these forms have in common. It is not merely about solving predefined problems, but about being *alive* to problems that aren't yet fully formed, to conflicts of goals, and to gaps between reality and potential – and then having the wherewithal to transform those tensions into resolutions. This synthesis of computational and humanistic insights presents intelligence as an adaptive, emergent phenomenon that thrives on challenge and change.

Definitive Definition (One Sentence): *Intelligence is the capacity to navigate and optimize within complex tension spaces by continuously identifying, engaging, and resolving discrepancies, conflicts, or challenges as opportunities for growth and innovation.* (The Core Concepts, Benefits and Limitations of Holacracy) (Is the universe a computer? (with Joscha Bach) | Clearer Thinking with Spencer Greenberg — the podcast about ideas that matter)

This single sentence encapsulates our tension processing paradigm. Each term is loaded: *capacity* implies an ability that can develop; *navigate* and *optimize* imply strategic movement in a landscape (not just one-step answers); *complex tension spaces* acknowledges multiple, interrelated problems rather than isolated tasks; *continuously* stresses the iterative, ongoing nature; *identifying, engaging, and resolving* outlines the process from perception to action to learning; and *opportunities for growth and innovation* reframes what might seem like "problems" as fuel for development and creativity. This definition is intended to guide both theoretical discourse and practical application in the user's work – it can be unpacked into metrics for AI development, curricula for education, or principles for organizational design, serving as a foundational **Defined Term** for intelligence moving forward.