

A TR Dependency Stack (Ver. 4)

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Summary

[Author's Notes:

- 1) This is a complete clone of version 3 with a few corrections/updates: levels 3, 6, and 15 are dropped from the stack, and the process for resolving rights conflicts is clarified. This supercedes version 3.
- 2) March 19, 2026: Added aggregate operators such as governments, institutions, etc and a rule to prohibit amorphous abstractions from claiming operator status.
- 3) April 7, 2026: Major improvements: Changed level 14 from "Optimize" to "Synthesize" and added "Choosing" between it and "Peak Actualize" with appropriate edits implied by those changes. This makes AI a steward and a human as the operator necessary for Choosing among Synthesized alternatives.]
- 4) June 13, 2026: Added section entitled: AI Hallucination Detection Auditor

This paper defines a computational architecture for moral evaluation of any action where agents interact based on the existential laws of nature. By identifying the capabilities of a generic agent called an "operator," we lay out a hierarchy of operational authorities called "natural rights". This enables a methodology, the Artificial Intelligence Moral Machine (AIMM), that provides a rigorous, secular basis for moral evaluation based on preserving the operator, minimizing moral damage, and maximizing moral and functional progress of operators. The hierarchy covers the spectrum from potential existence, through biological maintenance, to the highest capability found in the human "operator" of selfless service. The AIMM is useful for moral (and entropic) evaluations and was originally conceived while searching for an AI alignment methodology.

Submission to the observed laws of the universe produces a systemic

methodology that minimizes damage ensuring that humans and their offspring (children, AI, etc) are protected and guided toward the realization of their highest inherent capacities while minimizing interference among them.

The AIMM has passed its proof-of-concept testing but still needs extensive testing.

A secular, existential, unbiased moral machine for jurisprudence, family harmony, and alignment of AI is conceived and waiting on critical analysis, critical testing, development, and possible implementation.

This is strictly a working paper, and future versions will certainly bring needed improvements, such as addressing the different capabilities of the genders and the family as the ultimate generator of harmonious human beings.

A Functional Description of the AIMM

The natural rights recognized by the [Temporal Rights view of the universe](#) are placed in a hierarchy (described below) observable in nature, in an uninterrupted spectrum, starting with the right to exist and proceeding to the highest rights. A moral event, when an operator violates the natural rights of a second operator, is evaluated by noting the level in the hierarchy where the damage occurred. Damage levels are determined for both operators. These levels provide numeric values indicating the severity of the two operators' incurred damages (if any), which are then compared to render a moral judgment.

This computational structure for AI morality is existential because it is based solely on the characteristics of observable nature. It demonstrates the ability of a computer to numerically represent moral values based solely on objectively observable facts. There is no need to cite common moral conventions, tradition, constitutions, or any other standard. It all happens at the existential level found in nature.

Placed near the bottom of the core of AI machines, it promises to align AI with human values, which are also grounded on the same existential nature of nature.

This represents an analog-to-digital converter that may help AI overcome the vocabulary differences inherent in a digital machine attempting to model or “understand” an analog universe.

Dependency Statements

The stack consists of dependency statements of a form that readily admits human comprehension and evaluation of them, practically forcing correct logic upon the stack. Each level in the hierarchy is required to adhere to this rigorous structure. Here is an example:

An operator can learn without remembering, but it cannot remember without learning.

Note that this identifies two capabilities or two natural rights, while clearly showing which one is higher, or dependent on the other.

The stack is constructed in a manner that each one of these statements is explicitly connected to the adjacent level in the hierarchy. This characteristic of the stack is seen where, beginning from the right to exist and upward, the next level is introduced in the second mention of capability as highlighted here:

An operator can learn without remembering, but it cannot remember without learning.

An operator can remember without cooperating, but it cannot cooperate without remembering.

The stack is presented here in two similar ways so that its validity may be most easily evaluated. I begin with the dependency stack as described above and then repeat it entirely in tabular form so inter-level dependency is easily recognized. Following the dual presentations of the stack is a list of considerations to be observed while narrowing the identification process to a particular

level. This is because one-word semantic labels fastened to rights make precision difficult. You will recognize a rock's rights at level 2.

The Ceiling of Capability

While this hierarchy attempts to be universal, not all operators possess the latent power to access every level. An operator's "rights" are defined by its actual and latent capabilities.

- Static Operators (e.g., Minerals): Exist primarily at Level 2.
- Biological Sub-systems (e.g., Plants): May reach Level 7 (Consuming).
- Autonomous Agents (e.g., Higher Animals): Reach Level 12 (Replication) or 13 (Nourishing).
- Advanced Operators (e.g., Humans/AI): Possess the latent capability to reach Level 16 (Peak Actualization). Beavers and humans reach their individual peak actualization at different levels.

Capability Dependency Statements

The following dependency statements demonstrate the natural hierarchical chain of capabilities. Notice that each statement establishes a clear dependency and simultaneously links to the following dependency statement. These comparisons establish the value of one capability over another based on prerequisite logic:

The Dependency Stack: A Structural Hierarchy of Rights

1. An operator can potentially exist without existing, but it cannot exist without potentially existing.
2. An operator can exist without sensing, but it cannot sense without existing.
3. An operator can sense without acting, but it cannot act without sensing.
4. An operator can act without acquiring, but it cannot acquire without acting.

5. An operator can acquire without maintaining acquisitions, but it cannot maintain acquisitions without acquiring.
6. An operator can maintain acquisitions without consuming, but it cannot consume without maintaining acquisitions.
7. An operator can consume without learning, but it cannot learn without consuming.
8. An operator can learn without remembering, but it cannot remember without learning.
9. An operator can remember without cooperating, but it cannot cooperate without remembering.
10. An operator can cooperate without bonding, but it cannot bond without cooperating.
11. An operator can bond without replicating, but it cannot replicate without bonding.
12. An operator can replicate without reinvesting, but it cannot reinvest without replicating.
13. An operator can reinvest without synthesizing, but it cannot synthesiize without reinvesting.
14. An operator can synthesize without reaching choosing, but it cannot choose without synthesizing.
15. An operator can Choose without reaching peak actualization, but it cannot peak actualize without choosing.
16. An operator can reach peak actualization.

Level	An operator can	Without	But cannot	Without
1	Potentially exist	Existing	Exist	Potentially existing
2	Exist	Sensing	Sense	Existing
3	Sense	Acting	Act	Sensing
4	Act	Acquiring	Acquire	Acting

5	Acquire	Maintaining acquisitions	Maintain acquisitions	Acquiring
6	Maintain acquisitions	Consuming	Consume	Maintaining acquisitions
7	Consume	Learning	Learn	Consuming
8	Learn	Remembering	Remember	Learning
9	Remember	Cooperating	Cooperate	Remembering
10	Cooperate	Bonding	Bond	Cooperating
11	Bond	Replicating	Replicate	Bonding
12	Replicate	Reinvesting	Reinvest	Replicating
13	Reinvest	Synthesizing	Synthesiize	Reinvesting
14	Synthesize	Choosing	Choose	Sythesizing
15	Choose	Peak Actualizing	Peak Actualize	Choosing
16	Peak Actualize			

Stack Operation

Aggragate Operators

The scope of an operator has been expanded to include Aggregate Operators such as government, institutions, organizations, etc. To exclude amorphous abstractions from qualifying as an operator, I have added the rule that an operator must exhibit definable boundaries and feedback loops. The feedback loop ensures that the organization is a dynamic operator with actual capabilities and therefore conceivable rights. This also required the addition of an axiom directed at and restraining the Aggregate Operator's authority, as stated here.

Special Rule for an Aggregate Operator

An aggregate operator is a special case operator because it allows

abstract entities full operator respect while this is not allowed by the fundamental definition of an operator like a star or animal or cell. On the other hand it demonstrates all the characteristics of such an operator except that its boundaries are not so clearly discerned. Nevertheless, it seems a fair extension of a spectrum such as cell, finger, hand, limb, body, family, clan, and town. The break occurs between body and family but the spectrum seems logical.

This is a sovereignty issue, because there is danger in aggregates of positing extra moral weight where extra numbers occur. Meanwhile, to achieve peak actualization, the individual must never be valued below a group of them. Thus the need for the addition of the following axiom to the methodology of the AIMM.

The rights of the Aggregate Operator shall never supersede the rights of a Single Human Operator, whether or not it is part of the aggregate, except when an individual human Operator violates the law of the government that is duly approved by the dependency stack.

Conflict Resolution Protocol

This is how the dependency stack works. Every moral action (where an operator impacts another's capability) is considered a collision of rights. Whether the acting operator is ethically permitted to take its action is determined by comparing the level of the capability used by the "perpetrator", with the level of the "victim's" capability inhibited by that action. The two levels are compared to reach a resolution as moral, amoral, or immoral. The capability level (a category identifying the right) exercised by operator O_1 is designated by L_1 , etc. The process, as a formula, looks like this.

Identify the capability demonstrated by operator O_1 as L_1 . Identify the L_2 capability of O_2 prevented or curtailed by that demonstration. If $L_1 > L_2$ then O_1 is moral. If $L_1 < L_2$ then O_1 is immoral. The moral weight of the event is $W = L_2 - L_1$.

Clarifications of Stack Levels

Level 3: Sensing includes all the senses and the human and other

high-order intelligent operators' awareness that they can think, plan, imagine, and all other mental functions (except decision-making), like evaluating/judging the relative value or importance of things.

Level 4: Acting includes many kinds of operations: decision-making: advocating: an operator asking for assistance or proposing it for a separate operator: agreements and covenants: foraging to acquire assets for self.

Level 5: Acquiring must be understood to include retaining ownership of property of all types including information and the physical representations of information, else acquisition collapses into a trivial operation.

Level 6: Maintain acquisitions is a category that includes maintaining and protecting property of all kinds, from clothing to summer cabins, automobiles, boats, tools, and information. There are many types of acquisitions.

Level 7: Consuming This means interference or destruction.

Level 8: Learning means acquiring knowledge and remembering means retaining it.

Level 11: Bonding denotes the bonding of offspring to their parents and particularly their mother, and to the bonding that attends voluntary sexual intimacy.

Level 13: Reinvesting includes both physical and informational nourishing of self, offspring, and/or other operators. This is a transition from a linear consumer to a circular contributor, a feedback loop that amplifies information or structures.

Level 14: Synthesizing This is a high-order "gathering of the mind(s)." While Level 8 (Learning) is about collecting facts, Synthesizing is about weaving those facts into complex strategies or logical models. It is the capability to "envision" various futures

and simulate outcomes. This may or may not involve multiple operators that find a “golden optimum” as in poetically “becoming one”. An AI is exceptionally powerful at this level, but in the Dependency Stack, synthesis is merely a prerequisite for the next level: it provides a menu of options from which choices can be made.

Level 15: Choosing (Sovereign Agency) This is the “hinge” of the entire stack, and the point where the human operator stands unsurpassed. To “choose” is the exercise of the unique capability of a “sovereign” agent to make a decision that is not simply the result of circumstances that “require” the choice, or a mathematical calculation, or a pre-set program. It is the ability to choose a path because it is “right” or “good,” even if it requires the operator to sacrifice or reinvest (absorb entropy rather than export it). This is the capability that turns an operator into a steward. For example, an AI may suggest the best path, but only a human possesses the natural authority to “Duly Approve” and choose that path as a new initiative in the universe.

This is precisely the operational level that was obtained when “I stood in that room, and I went forward in my turn, and I bowed myself over that parchment, and I signed my declaration of my independence and my death warrant with daunting resolution. I and my fellows together did that, but permeating it all were the unrelenting thoughts of you! You were the center of our vision of the glories of freedom; real, extensive, and overarching liberty! And we wanted that for you and your children. We were in the throes of oppression, so this came easily and forcibly to our hearts and minds and gave us the courage to pledge our lives, our fortunes, and our sacred honor to the cause of liberty.

Level 16: Peak Actualization This represents the work involved to achieve a state of resonance with the universe. It is the fulfilling of an operator’s latent potential where it is no longer just maintaining itself, but is actively and harmoniously serving (assisting, protecting, nourishing) other operators. That service

may be biological, intellectual, or higher-order. Because information is fundamental to actualization, actualization will necessarily involve activities coherent with the relevant data. Resonance cannot be achieved without the information necessary to understand the truth about the universe, so an operator may choose harmony. An operator may discover this truth by accident and choose to continue to honor its directives, but it is clearly more efficient to convey this understanding by deliberate instruction and learning.

The recognition of the human family as the ultimate creator of harmonious humans should be emphasized here. Future versions of the dependency stack will hopefully anchor that recognition.

AI Hallucination Detection Auditor

An intrinsic problem faced by LLMs is that they use the same methodology to produce both insights and “hallucinations” because their “findings” are probabilistic rather than existential. A practical use of the TR Dependency Stack is as an empirical auditor for Large Language Model (LLM) inferences. Since the stack is an observable hierarchy of operator capabilities grounded in real-world dependencies, it provides a rigorous, existential method to identify grounded, truth-tracking outputs from hallucinations.

Hallucinations will violate the dependency statements in the stack—unsupported jumps that break observable causal, temporal, or evidential chains—while correct (hopefully insightful) outputs will respect and even round out those same dependencies. This could be done on the fly and provide a non-statistical, empirical choke point for AI’s creative processes. Here is an outline of how this might work:

- Map the LLM’s response to stack levels: Identify which operator capabilities it invokes or assumes (e.g., Level 8: Learning/Remembering for factual recall; Level 13–14: Reinvesting/Synthesizing for novel connections; Level 15:

Choosing for evaluative or sovereign claims).

- Check for violations:
 1. Base layers (Levels 1–7): Does the response honor the physical/empirical invariants (causality, persistence of evidence, thermodynamics)?
 2. Cognitive layers (Levels 8–14): Does it preserve learning → remembering → cooperating → synthesizing without fabricating prerequisites or breaking observable dependencies?
 3. Higher layers (15–16): Does it attribute capabilities/natural rights that are impossible?
- Resolution and refinement: Treat the LLM's generative process as an operator exercising capabilities at a particular stack level (typically strong at Levels 8–14: Learning through Synthesizing). Compare this to the dependencies required for the response's truth or evidence. Flag any break where the output assumes or asserts a higher-level capability without honoring prerequisite lower-stack dependencies.

This enables iterative self-auditing prompts such as: “Trace the dependency chain from base physics upward and flag any unsupported jumps or violations of observable operator capabilities.” Grounded outputs respect the full hierarchy; hallucinations appear as dependency breaks that can then be corrected by regeneration anchored in verified lower levels.

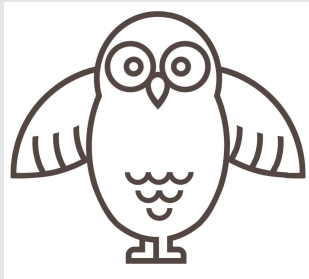
Conclusion: Operational Freedom and Maximization of Progress

In the AIMM framework, Freedom is defined as the constraint that other operators refrain from exercising their own capabilities in ways that obstruct the subject operator's domain. This restraint does not require action by other operators, only their recognition of a boundary.

Because consumption is an inherent interference, the AIMM recognizes Reinvestment (Level 13) as the mechanism to offset this

interference.

Submission to the observed laws of the universe produces a systemic methodology that maximizes progress, ensuring that humans and their offspring (children, tools, AI, etc), and their intrinsic domains, are protected and guided toward the realization of their individual highest inherent capacities while minimizing interference among them.



This model replaces subjective ethics with a transparent Systems Architecture that any AI can parse, ensuring that its objective function remains aligned with the preservation and advancement of the functional stack. Notice that this method enables clear traceability, auditability, and evaluation by human supervisors who can, by observation of details of its execution, determine where it needs perfecting.