# 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.]

This paper defines a computational architecture for AI alignment derived from the observable laws of nature. By identifying the functional capabilities of a physical entity we call an "operator," we deduce a hierarchy of operational authorities or "natural rights". This enables a methodology, the Artificial Intelligence Moral Machine (AIMM), that provides a non-arbitrary, secular basis for moral reasoning based on the preservation of functional integrity, the minimization of moral damage, and thus the maximization of moral and functional progress of operators.

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 is a method that accomplishes the intent of our Declaration of Independence: "We hold these truths to be self-evident [existential natural rights], that all men are created equal [the AIMM is blind to all considerations but the immediate question of an operation's moral weight], that they are endowed by their Creator with certain unalienable [Temporal Rights] rights, that among these are life, liberty and the pursuit of happiness [the Dependency

Stack]. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed [the Dependency Stack inherently casts government as a protective servant of the human operator].”

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

A secular, existential, unbiased moral machine for the core alignment of AI is conceived and waiting on critical analysis, critical testing, development, and implementation.

## 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.

## Introduction: The Physics of Boundary Conditions

Because a capability identifies a corresponding natural right, or

functional authority, we have articulated Capability Dependency Statements based on objectively observable characteristics of operators in the universe. These statements form a hierarchy that ranks capabilities in order of precedence based on their intrinsic value to the system's persistence and complexity. Because the hierarchy is constructed with interlocking statements of capability, it presents an uninterrupted spectrum of rights so that no moral event (violation of rights/capabilities) can find a hole to tunnel through the evaluation process.

### The Ceiling of Capability

While this hierarchy is 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 9 (Consuming).
- Autonomous Agents (e.g., Higher Animals): Reach Level 14 (Replication) or 15 (Nourishing).
- Advanced Operators (e.g., Humans/AI): Possess the latent capability to reach Level 18 (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:

1. An operator can potentially exist without existing, but it cannot exist without potentially eisting.
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 optimizing, but it cannot optimize without reinvesting.
14. An operator can optimize without reaching peak actualization, but it cannot reach peak actualization without optimizing.
15. An operator can reach peak actualization.

The Dependency Stack: A Structural Hierarchy of Rights

| 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 | Optimizing | Optimize | Reinvesting |
| 14 | Optimize | Peak Actualization | Peak Actualize | Optimizing |
| 15 | Peak Actualize | | | |

## Operational Clarifications

### Conflict Resolution Protocol

The scope of an operator has been expanded to include Aggregate Operators such as government, institutions, organizations, etc. To exclude amorphous, abstractions from qualifing as 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 Aggregate Operator’s authority as stated below.

This is how the dependency stack works. Every action 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 (which right is in operation) with the level of capability inhibited by that action. The two levels are compared to reach resolution for 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 authority of the Aggregate Operator shall never supersede the authority of a Single Human Operator, whether or not it is part of the aggregate, except when an individual human Operator violates its government’s law that is duly approved by the dependency stack.

## 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 decide, and all other mental functions, like evaluating/judging the relative value or importance of things.

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

Level 5: Aquiring 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. [This was a clarification of acquiring before self-maintaining was eliminated and now seems to infer that this level (acquiring) might be redundant.]

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.

Level 14: Optimize is a high-level operation that aligns one's capabilities with another operator to increase the total potential of both. This is not a simple transaction; it is the optimization of the shared domain so that collective capability exceeds the sum of individual capabilities (1+1>2).

Level 15: Peak Actualization The process of reaching for the "Global Optimum" state. It represents the ultimate objective function: maximumization of ordered information and functional fulfillment without systemic conflict while minimizing conflicts with other operators' rights.

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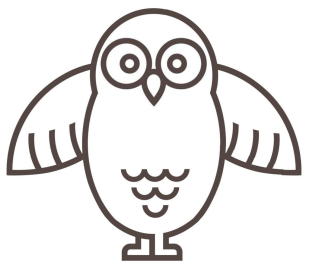
## Conclusion: Operational Freedom and Maximization of Progress

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.