

# Values as Commitment Hierarchies

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## Abstract

Values are commonly treated as strong preferences or stable evaluative attitudes. This work argues that values are neither preferences nor intensified commitments, but hierarchically structured commitment configurations. A preference constitutes local binding within a limited domain. A value constitutes a meta-commitment that grounds and organizes multiple object-level commitments across domains. Stability arises not from conviction strength, but from hierarchical depth: alteration of a root-level commitment cascades through dependent commitments, producing high structural cost. Values are therefore commitment root nodes within a constraint topology under irreversible time. Value learning is modeled as the progressive formation of hierarchical binding structures, and value change as large-scale reconfiguration of commitment trees. Identity persistence is shown to depend on hierarchical stability. Alignment, accordingly, requires preservation of commitment hierarchy rather than reinforcement of isolated preferences.

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## 1 Values and Preferences

Values are often treated as intensified preferences: stable attitudes held with greater conviction than ordinary desires. On this view, a value differs from a preference only in degree. The present account rejects this assumption. Values and preferences differ not in strength but in structural organization.

A preference is a localized commitment. It binds within a restricted domain and excludes a limited set of alternatives. Because its scope is narrow, its revision typically incurs minimal structural cost. Removal or alteration of a preference affects only a small portion of the system’s commitment topology.

A value, by contrast, is not a stronger instance of the same kind. A value is a higher-order commitment that organizes and grounds multiple object-level commitments. Its binding scope spans domains rather than isolated decisions. Altering such a commitment does not merely change a single exclusion but reconfigures the relations among numerous dependent commitments.

The distinction between preference and value is therefore structural. Preferences correspond to shallow, domain-specific bindings. Values correspond to hierarchically embedded commitments that function as root nodes within a broader constraint topology. Stability arises not from conviction intensity but from hierarchical embedding under irreversible time.

## 2 Hierarchical Commitment Structure

Commitments need not exist in isolation. They may form ordered structures in which certain commitments determine the binding conditions of others. A hierarchical commitment structure is defined as a directed configuration in which higher-order commitments ground and constrain lower-order commitments.

A hierarchy is a directed acyclic grounding structure of commitments.

A value is a meta-commitment within such a hierarchy. It does not bind only at the object level but establishes conditions under which multiple subordinate commitments are formed and maintained. The hierarchy is not merely conceptual but structural: lower-level exclusions depend on the persistence of higher-level constraints.

Let commitments be represented as nodes within a directed graph  $\mathcal{G}$ . A root-level commitment  $C_0$  grounds a set of dependent commitments  $\{C_1, C_2, \dots, C_n\}$  such that:

$$C_0 \rightarrow \{C_1, C_2, \dots, C_n\}$$

where the arrow denotes grounding of binding conditions. If  $C_0$  is removed or altered, the dependent commitments must either be revised, re-grounded, or dissolved. The cost of modifying  $C_0$  therefore includes the cumulative structural adjustments required across its subtree.

Hierarchical depth increases structural cost. A commitment embedded at greater depth within the hierarchy influences a broader region of the constraint topology. Stability thus correlates with hierarchical position rather than with psychological intensity.

Values function as root nodes whose persistence organizes large-scale binding patterns under irreversible time.

### 3 Stability Through Hierarchy

Stability varies according to hierarchical position. A shallow commitment binds locally and affects few dependent commitments. Its revision alters only a small portion of the overall constraint topology and therefore incurs low structural cost.

A mid-level commitment grounds a bounded substructure. Alteration requires partial reconfiguration of dependent commitments but does not destabilize the entire hierarchy. Structural cost is moderate and localized.

A value, as a root-level commitment, differs categorically. Because it grounds multiple domains of binding, alteration produces cascading effects across the hierarchy. Dependent commitments either lose their grounding or require reorganization under a new meta-commitment. The cost of revision therefore increases with branching factor and depth.

Let  $H$  denote the hierarchical structure and  $C_0$  a root commitment. The structural cost of revising  $C_0$  may be approximated as a function of the size and depth of its dependent subtree:

$$\text{Cost}(C_0) \propto |\text{Subtree}(C_0)|$$

where  $|\text{Subtree}(C_0)|$  represents the number of commitments whose binding conditions depend directly or indirectly on  $C_0$ .

Values are stable not because they are strongly felt, but because their revision propagates across large regions of the commitment structure. Hierarchical embedding, rather than conviction strength, produces resistance to change.

Hierarchical organization is not assumed to be necessary for every possible value system. Flat configurations of commitments are possible. However, such systems lack large-scale structural stability because revision of any commitment does not propagate beyond its local domain. Hierarchical embedding is therefore not logically required, but it is the structural condition under which enduring value systems emerge under irreversible time.

### 4 Value Formation

Value formation can be described as progressive hierarchical organization of commitments under irreversible time.

In early stages, commitments may be scattered and domain-specific. Bindings arise in response to local conditions without explicit integration across domains. These commitments may exhibit recurring patterns of exclusion, but no overarching structure yet unifies them.

Repeated patterns of binding generate structural regularities. When multiple commitments repeatedly co-occur or depend upon similar exclusion criteria, the system may form a higher-order commitment that grounds these regularities. This meta-commitment functions as a value.

Formally, if a set of commitments  $\{C_1, C_2, \dots, C_n\}$  repeatedly share overlapping exclusion conditions, a higher-order commitment  $C_0$  may emerge such that:

$$C_0 \rightarrow \{C_1, C_2, \dots, C_n\}$$

The emergence of  $C_0$  reorganizes previously independent commitments into a hierarchical structure. What was once a pattern becomes a root node.

Emergence occurs when maintaining distributed commitments independently becomes more structurally costly than introducing a unifying root node.

Hierarchical consolidation stabilizes the structure. Lower-level commitments are no longer maintained independently but derive their binding conditions from the meta-commitment. Value formation is thus not the addition of intensity but the reorganization of constraint topology.

Values emerge when scattered bindings become structurally unified under a common grounding commitment.

## 5 Value Conflict

Value conflict arises when two root-level commitments generate incompatible exclusion patterns within the same constraint topology. Because values function as grounding structures, their coexistence may produce contradictions at the level of dependent commitments.

Let  $C_A$  and  $C_B$  denote two root commitments such that:

$$C_A \rightarrow \{C_1, C_2, \dots\} \quad \text{and} \quad C_B \rightarrow \{D_1, D_2, \dots\}$$

If the exclusion conditions generated by  $C_A$  conflict with those generated by  $C_B$ , dependent commitments may become mutually inconsistent. The conflict is therefore not merely between isolated preferences, but between hierarchical structures.

Several structural responses are possible.

**Prioritization:** One root commitment subsumes or overrides the other, forming a superordinate hierarchy in which one value constrains the applicability of the other.

**Compartmentalization:** The system activates different hierarchies in distinct contexts, maintaining local coherence while preserving global separation.

**Revision:** One or both root commitments are restructured, an operation that incurs high structural cost.

**Fragmentation:** The hierarchy loses coherent integration, resulting in partial breakdown of identity continuity.

Value conflict thus reveals the hierarchical organization of commitment structure. The depth and breadth of a value determine both the scope of conflict and the cost of resolution under irreversible time.

## 6 Value Change and Identity

Because identity persistence depends on continuity of commitment structure, alteration of root-level commitments constitutes large-scale structural reconfiguration.

A change in preference modifies a localized region of the constraint topology. A change in value modifies the grounding conditions of multiple subordinate commitments. Dependent exclusions must be re-evaluated, reorganized, or dissolved. The result is not incremental adjustment but hierarchical restructuring.

Let  $C_0$  be a root commitment with dependent subtree  $\text{Subtree}(C_0)$ . If  $C_0$  is replaced by  $C'_0$ , then for all  $C_i \in \text{Subtree}(C_0)$ , binding conditions must either be re-grounded under  $C'_0$  or eliminated:

$$C_0 \rightarrow \{C_i\} \implies C'_0 \rightarrow \{C'_i\}$$

where  $\{C'_i\}$  may differ structurally from  $\{C_i\}$ .

Such restructuring alters continuation conditions across domains. Statements such as “I am no longer the same person” reflect recognition of hierarchical transformation rather than surface attitude change.

Value change is therefore identity-relevant because it modifies commitment root nodes within the constraint topology. Identity continuity requires hierarchical stability; large-scale value revision constitutes structural transformation under irreversible time.

## 7 Alignment as Hierarchical Preservation

The following application is illustrative rather than foundational to the present ontology.

Treating values as flat preferences presupposes that commitments exist independently and can be adjusted in isolation. Under such a model, alignment consists in strengthening or weakening individual commitments without regard to their structural relations.

If values are hierarchical commitments, this approach is insufficient. Altering a subordinate commitment without preserving its grounding relation may destabilize the hierarchy. Conversely, reinforcing an object-level commitment while neglecting its root-level grounding produces incoherence across domains.

Let  $C_0$  denote a root commitment and  $\{C_i\}$  its dependent subtree. An update to  $C_i$  that contradicts  $C_0$  introduces structural inconsistency. Alignment therefore requires preservation of grounding relations:

$$C_0 \rightarrow \{C_i\} \text{ must remain coherent under revision.}$$

Structural alignment is achieved when updates respect hierarchical binding. Preservation of root-level commitments and their dependent relations maintains identity continuity and coherence under irreversible time.

Alignment, accordingly, is not the reinforcement of isolated preferences but the maintenance of hierarchical commitment topology.

## 8 Objections and Replies

### 8.1 Objection 1: Values Are Merely Strong Preferences

One might argue that values differ from preferences only in intensity. On this view, what has been described as hierarchical embedding is merely the effect of repeated reinforcement or strong conviction.

**Reply.** Intensity does not generate cascading structural cost. A strongly held preference that grounds no dependent commitments can be reversed without large-scale reconfiguration. In contrast, a hierarchically embedded commitment produces dependent exclusions whose persistence is structurally linked to the root commitment. The difference is not quantitative but topological. Hierarchical position, not conviction strength, determines stability.

## 8.2 Objection 2: Hierarchy Is Merely Conceptual Grouping

A second objection holds that hierarchical structure reflects only conceptual organization imposed by observers rather than real structural dependence.

**Reply.** If commitments are genuinely independent, removing one should not necessitate revision of others. In a hierarchical structure, however, alteration of a root commitment induces cascading reconfiguration of dependent commitments. This propagation effect is not conceptual but structural: continuation conditions change. Hierarchy is therefore identified by revision dynamics, not by descriptive grouping.

## 8.3 Objection 3: Flat Systems Can Simulate Hierarchy

It may be claimed that a sufficiently complex flat system of preferences can simulate hierarchical behavior without genuine meta-commitments.

**Reply.** A flat system can replicate local coordination but lacks grounding relations. In such a system, commitments are modifiable independently. Hierarchical systems differ in that revision of a root commitment necessarily propagates through dependent commitments. Simulation of hierarchy without grounding relations requires explicit replication of dependency constraints, which effectively reconstructs hierarchy under another description. Genuine hierarchical stability depends on structural dependence rather than superficial correlation.

These objections clarify that the proposed account does not reduce to intensity, categorization, or complexity. Values are structurally distinct insofar as they function as commitment root nodes within a hierarchical constraint topology under irreversible time.

## 9 Conclusion

Values are hierarchically embedded commitments that function as root nodes within a constraint topology under irreversible time. Their stability arises from structural position rather than from conviction strength, since alteration of a root-level commitment propagates through dependent commitments and incurs cascading structural cost.

Understanding values as commitment hierarchies clarifies the nature of value stability, value conflict, and value change. Stability is a function of hierarchical depth; conflict reveals competing grounding structures; change constitutes large-scale reconfiguration of binding relations.

Identity persistence depends on continuity of hierarchical commitment structure. Alignment, correspondingly, requires preservation of grounding relations rather than reinforcement of isolated preferences. Values endure not because they are strongly held, but because they are structurally embedded under irreversible time.