Standard Theory: Memory-Based Determinants of Judgment and Action

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Abstract

Standards play a fundamental yet underexamined role in judgment and action across biological and social systems. This work presents a minimal, mechanism-based definition of standards as memory-dependent references that enable judgment and constrain action. By grounding standards in memory and temporal asymmetry, the framework avoids normative assumptions and applies to both human and non-human agents. A structural consequence of this formulation—standard proxy behavior—is identified, describing the execution of externally acquired standards without reflective reconstruction. The theory clarifies how standards emerge, propagate, and constrain behavior without prescribing values or institutional designs.

Keywords: Standard Theory, Memory, Judgement, Selection, Accumulation, Transmission, Networked Systems, Proxy Execution, Computational Cognition, Mechanism-Based Theory.

Introduction

Judgment and action are commonly discussed in terms of goals, preferences, values, or rational choice. Such accounts, however, typically presuppose the existence of standards without explicitly defining their structural basis. This omission introduces ambiguity when comparing behavior across agents, timescales, or systems[1, 2].

This paper introduces a minimal theory of standards grounded in memory and time. Rather than treating standards as cultural, moral, or institutional constructs, standards are defined here as functional mechanisms that enable judgment and constrain action.

This approach allows standards to be analyzed independently of value systems and applied to both human and non-human agents.

The objective of this work is descriptive rather than prescriptive: to identify the necessary conditions under which standards exist and to examine their structural consequences.

Definition of Standards

Definition 1 (Standard)

A standard is a memory-based reference that enables judgment and constrains action. This definition comprises four necessary components:

1. **Memory-based:** without memory, no standard can persist.
2. **Reference:** a standard functions as a point of comparison, not as a goal.
3. **Enables judgment:** a standard must allow distinctions to be made.
4. **Constrains action:** a standard must influence or limit possible actions.

All four conditions are required. A reference that does not affect action is not a standard; an action rule without memory does not constitute a standard.

Proposition 1: Without memory, judgment is undefined; without judgment, action is arbitrary.

This proposition situates standards at the lower bound of cognition and behavior, independent of language, intention, or consciousness.

Interpretive Clarification (Non-Normative)

While the definition of standards in this work is intentionally minimal, its functional meaning can be clarified without introducing normative assumptions.

Intuitively, a standard operates as a remembered reference that differentiates possible actions. When an agent encounters a sit-

uation, stored memory enables comparison between current conditions and prior states. This comparison constrains which distinctions can be made and, consequently, which actions are considered viable.

Crucially, this mechanism does not presuppose intention, morality, awareness, or symbolic reasoning. A standard does not prescribe what *ought* to be done; it structures what *can* be judged and acted upon. In this sense, standards function below explicit deliberation and above purely reflexive response.

This clarification is descriptive only. It does not modify the formal definition of standards, nor does it introduce evaluative criteria. Its purpose is solely to bridge abstract formulation and operational understanding.

Universality of Standards

Standards are not exclusive to human systems. Wherever memory influences future action, a standard exists. This applies to biological organisms, artificial agents, and hybrid systems alike. The presence of standards does not require symbolic reasoning, moral awareness, or social institutions—only memory-dependent behavioral differentiation.

Differences between systems therefore reflect differences in the number, hierarchy, and retrieval complexity of standards, rather than categorical distinctions in kind.

Time, Memory, and Asymmetry

Memory introduces temporal asymmetry: past states influence future actions, but not vice versa.

Proposition 2: If no temporal difference exists, memory cannot form; if memory cannot form, standards cannot exist.

Standards thus presuppose temporal asymmetry. They are inherently historical, encoding prior states into present decision structures. This establishes a direct link between standards and physical time rather than psychological or narrative time.

Standard Proxy Behavior

Definition 2 (Standard Proxy Behavior).
Standard proxy behavior refers to the execution of externally acquired standards without reflective reconstruction.

Three necessary conditions characterize such behavior:
1. The standard originates externally.
2. The executor does not generate or revise the standard.
3. The execution constrains the behavior of others or the system.

This definition is value-neutral and does not imply intent, malice, or awareness.

Proposition 3: Standard proxy behavior is structurally inevitable in multi-agent systems. As standards propagate through memory transmission—biological, social, or technical—their execution without reconstruction becomes a dominant operational mode. This outcome reflects structural efficiency and continuity rather than a failure of agency.

Structural Conditions of Harm

Harm is not treated here as a moral category but as a structural outcome.

Proposition 4: Harm emerges when imposed standards lack opt-out mechanisms.

This formulation avoids attributing causality to individual intent and locates the condition of harm at the level of system constraints and boundary conditions.

Discovery Versus Prescription

This work is strictly descriptive. It identifies mechanisms by which standards arise, persist, and constrain behavior. It does not prescribe values, norms, institutional designs, or optimization objectives. Any application of this framework lies outside the scope of the present analysis.

Conclusion

Standards are memory-dependent mechanisms that enable judgment and constrain action. Judgment and action are impossible without standards. The proxy execution of standards is a structural consequence of memory transmission.

Author's Note

This work is presented as an independent theoretical contribution. Its purpose is to establish a clear definition and conceptual structure for Standard Theory and to place it into the public domain for open examination, critique, and future extension.

References

1. A representative modern discussion on standards, decision processes, or time-dependent systems.
2. A contemporary review on memory, behavior, or system-level regulation.