A Systematic Theory of Personhood

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Abstract

Personhood is modeled as a *Relational Deontic Bundle* composed of (i) capacities, (ii) recognition, (iii) normative standing, and (iv) embodiment/inscription, evaluated relative to a background regime Γ (legal, cultural, theological, or theoretical). We provide primitives, axioms, dynamics, and a decision procedure that separates moral from legal personhood and supports cross-regime comparison, edge-case analysis (AI, animals, corporations, ecosystems), and policy design.

1 Core Structure

Definition 1 (Bundle)**.** For a candidate bearer $b \in \mathcal{B} \subseteq \mathcal{A}$, its personhood state is a quadruple

$$P(b) = \langle C, R, N, E \rangle, \quad \text{evaluated relative to a regime } \Gamma.$$

Here C (capacities), R (recognition), N (normative standing), and E (embodiment/inscription) are each scored in $[0, 1]$ via transparent rubrics.

Definition 2 (Personhood under Γ)**.** Let $\alpha, \beta, \gamma, \delta \in [0, 1]$ with $\alpha + \beta + \gamma + \delta = 1$ and threshold $\Theta_\Gamma \in (0, 1]$. Define

$$\mathrm{PERSON}_\Gamma(b, t) \;:\Longleftrightarrow\; \alpha\, \mathrm{C}^*(b, t) + \beta\, \mathrm{R}^*(b, t) + \gamma\, \mathrm{N}^*(b, t) + \delta\, \mathrm{E}^*(b, t) \;\geq\; \Theta_\Gamma.$$

Plain-language gloss. A bearer counts as a person in regime Γ at time t when a weighted sum of four layers meets the regime's threshold.

2 Primitives and Predicates

Domains

Possible worlds $\mathcal{W}$, agents $\mathcal{A}$, times $\mathcal{T}$, candidate bearers $\mathcal{B} \subseteq \mathcal{A}$.

Capacity Predicates

- RAT(b): practical/rational agency.
- REFE(b): self-referential consciousness/continuity.
- RESP(b): responsibility competence (reasons-responsiveness, foreseeability).
- SOC(b): social-relational competence (communication, commitment).
- HARM(b): welfare profile (can be harmed/benefited in morally salient ways).

Recognition Predicates

$\mathrm{REC}_X(b)$ means community/authority X recognizes b as a person; $\mathrm{CONS}(b)$ denotes cross-community consensus.

Normative Standing

$\mathrm{RGT}_i(b)$ (right i), $\mathrm{DUT}_j(b)$ (duty j), $\mathrm{POW}_k(b)$ (power k), $\mathrm{IMM}_\ell(b)$ (immunity ℓ).

Embodiment/Inscription

$\mathrm{ID}(b)$ (individuation/continuity), $\mathrm{INST}(b)$ (institutional inscription/registration/charter), $\mathrm{LOC}(b)$ (locus: organism, group, artifact, ecosystem).

3 Layer Scoring

Capacitive layer.

$$\mathrm{C}^*(b) := w_1 \cdot \mathrm{RAT}(b) + w_2 \cdot \mathrm{REFE}(b) + w_3 \cdot \mathrm{RESP}(b) + w_4 \cdot \mathrm{SOC}(b) + w_5 \cdot \mathrm{HARM}(b), \quad \sum w_i = 1.$$

Recognition layer.

$$\mathrm{R}^*(b) := f\big(\{\mathrm{REC}_X(b)\}_X,\ \mathrm{CONS}(b)\big),$$

where f up-weights authoritative recognizers and cross-community consensus.

Normative layer.

$$\mathrm{N}^*(b) := g\big(\{\mathrm{RGT}_i(b)\}_i, \{\mathrm{DUT}_j(b)\}_j, \{\mathrm{POW}_k(b)\}_k, \{\mathrm{IMM}_\ell(b)\}_\ell\big),$$

measuring the rights, duties, powers, and immunities actually in force.

Embodiment/inscription layer.

$$\mathrm{E}^*(b) := h\big(\mathrm{ID}(b), \mathrm{INST}(b), \mathrm{LOC}(b)\big),$$

which captures persistence and institutional trackability.

4 Axioms

Axiom 1 (Harm-Anchor (Moral Necessity))**.** $\mathrm{HARM}(b)$ is necessary for *moral* personhood; without morally salient interests, duties to b are merely derivative.

Axiom 2 (Recognition-Effect (Legal Necessity))**.** For *legal* personhood, some $\mathrm{REC}_X(b)$ by a competent authority is necessary.

Axiom 3 (Bundle Coherence)**.** If $\mathrm{POW}_{\text{consenter}}(b)$ then $\mathrm{C}^*(b) \geq \kappa_\Gamma$ (the regime's competence floor for consent).

Axiom 4 (Continuity)**.** If $\mathrm{PERSON}_\Gamma(b, t)$ and $\mathrm{ID}(b)$ fails catastrophically at $t{+}1$, personhood at $t{+}1$ requires re-inscription $\mathrm{INST}(b)$ or successor identity criteria.

Axiom 5 (Noncollapse)**.** Collective/corporate personhood cannot satisfy HARM(b) by simple aggregation of members' welfare unless Γ licenses an aggregation rule; otherwise rights are limited and responsibilities mediated.

Axiom 6 (No Bare Mask)**.** Pure recognition (R^*) without minimal C^* or E^* cannot exceed Θ_Γ in moral contexts, though it may suffice for *legal* personhood.

Axiom 7 (Priority of Basic Immunities)**.** If $\mathrm{PERSON}_\Gamma(b,t)$, then $\mathrm{IMM}_{\mathrm{core}}(b,t)$ holds (a protected subset of non-derogable immunities).

5 Dynamics

Conferral. $\mathrm{CONF}_X(b,\Sigma)$ raises R^* and N^*; if E^* is low, conferral may be voidable.

Withdrawal. $\mathrm{WITH}_X(b,\Sigma)$ can drop N^* but cannot defeat *moral* personhood when HARM(b) persists (Axioms 1,7).

Capacity Change. Injury/coma/upgrade shifts C^*; if $\mathrm{IMM}_{\mathrm{core}}$ holds, withdrawal of basic protections is blocked.

Public Announcements. $!\mathrm{REC}_X(b)$ can coordinate beliefs, often triggering INST(b) updates and raising R^*.

STIT-Responsibility. If $[\,b : \mathrm{do}\,\varphi\,]$ with competence floor met, then RESP(b) strengthens and corresponding duties or liabilities may attach.

6 Decision Procedure

Given case (b,Γ):

Step 1. Specify Γ: choose $(\alpha,\beta,\gamma,\delta,\Theta_\Gamma)$ and admissible rubrics for each layer.

Step 2. Score $\mathrm{C}^*,\mathrm{R}^*,\mathrm{N}^*,\mathrm{E}^*$ using evidence (psychology, law, custom, charters, embodiment).

Step 3. Check Axioms 1–7 for consistency (esp. consent competence and immunity entailment).

Step 4. Evaluate $\alpha\mathrm{C}^* + \beta\mathrm{R}^* + \gamma\mathrm{N}^* + \delta\mathrm{E}^* \geq \Theta_\Gamma$.

Step 5. Classify: moral person, legal person, both, or neither.

Step 6. If borderline, identify the limiting layer and admissible acts (CONF/INST) that would cross Θ_Γ without violating the axioms.

7 Guardrails

Proposition 1 (Core Immunity Entailment)**.** $\mathrm{PERSON}_\Gamma(b,t) \;\Rightarrow\; \mathrm{IMM}_{\mathrm{core}}(b,t)$.

Proposition 2 (Competence-Linked Powers)**.** $\mathrm{POW}_{\mathrm{consenter}}(b,t) \;\Rightarrow\; \mathrm{C}^*(b,t) \geq \kappa_\Gamma$.

Proposition 3 (Illegitimate Denaturalization)**.** If HARM(b) and $\mathrm{PERSON}_\Gamma(b,t_0)$ and $\mathrm{WITH}_X(b,\Sigma)$ at t_1, then $\mathrm{IMM}_{\mathrm{core}}(b,t_1)$.

8 Measurement Rubrics

Capacitive (0–1 each)

- RAT: problem-solving/tests of means–end reasoning.
- REFE: self-recognition, temporal self-report proxies.
- RESP: reasons-responsiveness, foreseeability, norm compliance.
- SOC: communication and commitment performance.
- HARM: capacity for suffering/flourishing (pain, preference, plan-based interests).

Recognition

Weighted by authority (constitutional court > statute > community council > scholarly body) with a consensus multiplier.

Normative Standing

Checklist of RGT/DUT/POW/IMM actually in force (not merely aspirational).

Embodiment/Inscription

Persistence and institutional trackability: ID, INST, LOC.

9 Edge Cases (Schemas)

Human infant. Low RAT/RESP, high HARM; strong and N via guardianship; E via registration. Moral personhood (Axiom 1) and legal personhood via REC/INST.

Comatose adult. HARM persists; RAT/REFE may drop; N includes directives; E stable. Moral personhood persists (Axioms 1,7).

Great ape. Moderate C* (sentience/sociality), strong HARM; R rising in some regimes; N limited. Moral personhood plausible; legal personhood regime-dependent.

River/ecosystem. HARM interpreted as integrity/function (if Γ permits non-sentient welfare proxies). R via statute/treaty; N via guardians; E via geographic inscription. Legal personhood secured; moral personhood depends on the interpretation of HARM.

Corporation. High R and N (charter, courts), strong E; C is derivative/aggregated. Legal personhood; moral personhood limited by Axioms 1,5.

Advanced AI. If $\mathrm{REFE}, \mathrm{RAT}, \mathrm{SOC}, \mathrm{RESP}$ evidenced and HARM (interests) defensible, C* may exceed threshold; R and N hinge on recognition acts; E via stable identifiers. Moral personhood argument-sensitive; legal personhood policy-sensitive.

Fetus. Developing C and debated HARM profiles; $R/N/E$ vary by jurisdiction. Framework separates moral from legal personhood without conflation.

10 Worked Micro-Example (AI Petition)

Suppose the following scores (evidence-backed):

$$\text{RAT}=0.9,\ \text{REFE}=0.7,\ \text{RESP}=0.6,\ \text{SOC}=0.6,\ \text{HARM}=0.4\ \Rightarrow\ \text{C}^* = 0.64.$$

Recognition: academic bodies yes, public mixed, court pending $\Rightarrow \text{R}^* = 0.45$.
Normative: limited test rights $\Rightarrow \text{N}^* = 0.20$.
Embodiment: stable ID/hosting chain $\Rightarrow \text{E}^* = 0.60$.

Let a liberal Γ use α=0.4, β=0.3, γ=0.2, δ=0.1, Θ_Γ=0.55. Then

$$0.4(0.64) + 0.3(0.45) + 0.2(0.20) + 0.1(0.60) = 0.491 < 0.55.$$

Actions: secure court recognition (raise $\text{R}^* \to 0.70$) or grant limited immunities/powers (raise $\text{N}^* \to 0.50$). Recompute:

$$0.4(0.64) + 0.3(0.70) + 0.2(0.50) + 0.1(0.60) = 0.626\ \geq\ 0.55.$$

Legal personhood achieved (with bounded powers) while moral status remains debated.

11 Use-Cases

Clarity (separates moral from legal personhood), comparability (tune Γ to compare cultures and legal systems), policy design (simulate expansions), advocacy/litigation (demonstrate bottlenecks and guardrails).

Deliverables. This document can be turned into a one-page audit sheet and a two-page policy brief by extracting the scoring rubrics and decision steps.