A4 - β (Modality) via Conative Markers and Directional Alignment (clarification)

Scope. This note clarifies the operationalization of the β (modality) component without changing hypotheses H1 − H4, decision thresholds, or the fixed weights $\alpha \ldots \varepsilon$ specified in the preregistration. It is a predata clarification.

Definitions

- For a document d and a telos T.
- Directional alignment $a(d,T) \in [0,1]$ derived from θ (e.g., $a = (\cos\ \theta + 1)/2$), or any preregistered projection re-mapped to $[0,1]$.
- Conative markers:
- push $p(d) \in [0,1]$: modal/actional cues (e.g., devoir / must, falloir / need, accelerate, demand, it is time to...).
- inhibit $h(d) \in [0,1]$: blocking/negation cues (e.g., block, prevent, oppose, refuse to, do not + VERB). Marker intensities come from a fixed lexicon (lemma/phrase weights [0,1]), negation rules, then p90 normalization and clipping to $[0,1]$.
- Cross-term coefficient λ is fixed a priori to 0.5 (theoretical compromise between instrumental vs. substantive readings).

Construction of F_c, F_i

$$F_c(d,T) = p(d) \cdot a(d,T) + \lambda \cdot h(d) \cdot (1 - a(d,T)),$$
$$F_i(d,T) = h(d) \cdot a(d,T) + \lambda \cdot p(d) \cdot (1 - a(d,T)),$$

with $\lambda = 0.5$. By construction, $F_c, F_i \in [0,1]$.
Invariants

1. Bounds: $F_c, F_i \in [0,1]$.
2. Neutrality: if $p = h = 0$, then $F_c = F_i = 0$.
3. Monotonicity: for fixed p, h, F_c increases with a; F_i decreases with a.
4. Anti-telos behavior: if $a \approx 0$ and $p > 0$, push contributes to F_i (pushing against T); if $a \approx 1$ and $h > 0$, inhibition contributes to F_i (blocking within the telos direction).

Modality scalar for N_{tel}

The β component used in the weighted norm N_{tel} is a scalar derived from F_c, F_i :

$$M(d,T) = F_c(d,T) - F_i(d,T) \in [-1,1], \beta(d,T) = \frac{M(d,T) + 1}{2} \in [0,1]$$

Other channels and weights $(\alpha, \gamma, \delta, \varepsilon)$ remain unchanged and fixed a priori as preregistered.

Compliance note

This clarification does not modify any confirmatory tests (H1 − H4), thresholds ($\Delta\text{AUC}, \Delta R^2$, FDR, etc.), or the fixed weights $\alpha \ldots \varepsilon$. It only specifies how β is computed from already defined quantities (conation + alignment), with $\lambda = 0.5$ fixed a priori.

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Links: OSF preregistration (reference) • Git tag prereg-clarif-v1.1