Finding 6: Efference Copies Layered Protocol Findings

Statement

Progressive perturbation of forward models through music-based training produces measurable improvements in proprioceptive accuracy, error recovery, and pressure tolerance.

Mechanism

The Efference Copies Protocol uses five layers of music-based perturbation to deliberately disrupt the nervous system's forward model (internal prediction of sensory consequences). Each layer adds complexity: forward model calibration, perturbation with recovery gate, inception error plus perturbation, occurrence uncertainty, and concurrent somatic stabilization.

By progressively perturbing the forward model, the nervous system is forced to recalibrate. Each layer produces a new level of forward model accuracy. By the end of the protocol, the nervous system has reorganized to tolerate perturbations that would have caused acute error pre-training.

Key Implications

- **Forward model recalibration is trainable**: Specific, measurable improvements in proprioceptive accuracy
- **Protocol is replicable and scalable**: Any athlete can follow the five-layer progression
- **Somatic stabilization is essential**: Layer 5 maintains parasympathetic tone during sympathetic load

Practical Applications

1. Start with Layer 1 at baseline tempo (110 BPM)
2. Progress through layers sequentially, spending 2-3 weeks per layer
3. Include somatic stabilization (deep C-G-C drone) throughout
4. Measure improvements in proprioceptive accuracy and error recovery

Competitive Context

Athletes who complete the full protocol show measurable improvements in match performance, particularly in high-pressure situations. They maintain accuracy and consistency even when opponent tempo varies unpredictably.

Study 001 — Control Loop Framework Research
The Unfinished Athlete — Scott Felluss, PhD