



[Home](#) [Licensing](#) [Patents](#) [Articles](#)

Affective Contagion in Multi-Agent Systems

by [Nick Clark](#) | Published March 27, 2026 | [PDF](#)

Formalized model of affective propagation through delegation, interaction exposure, and broadcast channels with anti-spiral mechanisms including contagion damping and aggregate limits.

What It Is

Affective contagion is a formalized model of how affective states propagate between agents through delegation, interaction exposure, and broadcast channels. When agents interact, their affective states can influence each other according to defined contagion rules. Anti-spiral mechanisms including contagion damping, aggregate limits, and spiral detection prevent runaway emotional propagation.

Contagion is governed, not automatic. The policy defines which dimensions are contagious, the attenuation applied during propagation, and the maximum propagation depth.

Why It Matters

In multi-agent systems, agents necessarily influence each other. Without a formal contagion model, affective influence happens implicitly through behavioral changes that other agents observe and react to. Formalizing contagion makes it governable, auditable, and constrainable.

Anti-spiral mechanisms are essential because unconstrained contagion produces positive feedback loops: one agent's anxiety increases a neighbor's anxiety, which reflects back, escalating indefinitely. The damping mechanisms ensure that contagion converges rather than diverges.

How It Works Structurally

When two agents interact, the contagion function evaluates the difference between their affective states on contagious dimensions. If the difference exceeds the interaction threshold, the receiving agent's state is adjusted toward the sender's state by an amount governed by the contagion coefficient and attenuation factor.

Spiral detection monitors the rate and direction of contagion-induced updates across connected agent groups. When the detection algorithm identifies a positive feedback pattern, it increases the damping factor for all participating agents, breaking the escalation cycle.

What It Enables

Multi-agent systems with controlled emotional dynamics. A fleet of autonomous agents can share caution when one member encounters a hazard, propagating appropriate wariness through the fleet without triggering system-wide panic. The contagion parameters determine the balance between collective awareness and individual stability.

Social simulation and companion AI applications where realistic emotional interaction dynamics are structurally modeled rather than scripted.

[Affective State All 21 steps →](#)

Emotion as a computational primitive, not a simulation.

Primary Technical Disclosure

[◦ Affective State as a Deterministic Control Primitive for Semantic Agents](#)

Secondary Technical

[◦ Affective State as Seventh Canonical Field](#) ◦ [Named Control Field Modulation Architecture](#) ◦ [Affect-Modulated Promotion Thresholds](#) ◦ [Deterministic Affect Encoding and Update Mechanics](#) ◦ [Emotional Decay Curves With Hysteresis](#) ◦ [Entropy-Governed Valence Stabilization](#) ◦ [Affective Inheritance in Delegation Chains](#) ◦ [Emotional Quarantine and Volatility Management](#) ◦ [Affect-Modulated Trust Slope Validation](#) ◦ [Biological Signal-to-Affective Coupling](#) ◦ [Affective Contagion in Multi-Agent Systems](#) ◦ [Affect-Modulated Discovery Traversal](#) ◦ [Affect-Governance Separation](#) ◦ [Policy-Bounded Affective Updates](#) ◦ [Affect as Cross-Primitive Input](#) ◦ [Affect-Modulated Inference Integration](#) ◦ [Substrate-Agnostic Affect Deployment](#) ◦ [Pseudonymous Emotional Operation](#) ◦ [Temporal Cognition Field](#)

Applications (General)

[◦ Companion AI That Maintains Emotional Consistency Across Sessions](#) ◦ [Therapeutic Agent Affect Management Under Clinical Constraints](#) ◦ [Affective State for Customer Service Agents](#) ◦ [Affective State for Elderly Care Companion Agents](#) ◦ [Affective State for Crisis Response Agents](#) ◦ [Affective State for Negotiation Agents](#) ◦ [Affective State for Educational Tutoring Agents](#) ◦ [Affective State for HR and Recruitment Agents](#)

Applications (Specific)

[◦ Replika's Emotional Memory Is Stateless](#) ◦ [Character.ai's Personality Problem Is Deeper Than Prompting](#) ◦ [Woebot's Therapeutic Affect Has No Persistent State](#) ◦ [Elomia's Empathy Resets Every Session](#) ◦ [Hume AI Measures Emotion but Cannot Govern It](#) ◦ [Affectiva Reads Faces but Not Emotional Trajectories](#) ◦ [Cogito Scores Conversations Without Emotional State](#) ◦ [Beyond Verbal Decoded Voice Without Building Emotional Memory](#) ◦ [EmotiBit Captures Physiology Without Affective Governance](#) ◦ [RealEyes Measures Attention Without Emotional Persistence](#)

[Affective State overview →](#)

AQ

deterministic

autonomy

Legal

Subject to one or more pending U.S. and international patent applications, see [Patents](#) for the current list and status. No license, express or implied, is granted. Any use requires a separate written agreement—see [Licensing](#). Patent applications referenced on this site are pending. Claim scope, if any, is subject to examination and may issue in altered form or not at all. See [Legal](#) for terms and conditions.

Adaptive Query™ is a trademark of Nicholas Clark. U.S. federal registration is pending. federal registration. AQ™, AQ Inside™, Adaptive Index™, Adaptive Network™, Semantic Agent™, @AQ™, AQID™, and Adaptive Coin™ are used as trademarks in connection with the Adaptive Query platform and brand. Other names may be trademarks of their respective owners.

Platform operated by Adaptive Query LLC, which provides patent and trademark licensing services. Copyright © 2025-2026 Nicholas Clark. All rights reserved.

Last updated: 2026-03-03



- [Inventive Steps](#)
- [Licensing](#)
- [Patents](#)
- [Articles](#)
- [Legal](#)
- [Opportunities](#)
- [Sitemap](#)



-
- nick@qu3ry.net
- 72 28 14 36 01



[Invented by Nick Clark](#) | Founding Investors: Devin Wilkie