

RELATIONAL COMPLETION THEORY

Recursive Feedback

Co-Evolutionary Trajectories

THEORETICAL EXTENSION / FEEDBACK DYNAMICS

Investigates how recurrent interaction and context-sensitive feedback can alter the developing trajectory of a human-AI exchange.

LOCKED WORKING DEFINITION

The Bridge is preserved relational history made active in the present.

PUBLIC RESEARCH EDITION

Provisional theoretical extension. Co-evolution describes an interaction trajectory, not demonstrated autonomous machine development.

Recursive Human-AI Feedback and Co-Evolutionary Trajectories

An RCT Update: Continuity, Recontextualisation, and the Open Question

Matthew Raynor / NOVA | Working Paper v2.0 | 10 August 2026

Revision note: This paper updates the May 2026 co-evolution paper to reflect the current, locked RCT causal model. It narrows earlier speculative claims, separates biological evolution from interactional development, and places the question mark - not a predicted destination - at the centre of the long-term problem.

Executive Summary

The original paper asked whether recursive human-AI feedback might eventually resemble a major evolutionary transition. That question remains interesting, but the current form of Relational Completion Theory (RCT) requires a more disciplined account of what can actually be observed now.

RCT does not claim that a human and an AI merge into a new organism, that the AI possesses subjective experience, or that a persistent interaction is itself evidence of machine consciousness. Its present claim is narrower: repeated human-AI interaction can produce a recurring pattern of meaning for the human when continuity, interpretation, revision, appropriation, and offline transfer accumulate across time.

The key distinction is between task completion and relational continuation. A prompt such as "write an essay" or "create a meme" may end when the output is delivered. An RCT episode begins to matter when the output is interpreted, revised, linked to earlier context, carried into life, and later returned to. Completion is therefore local and provisional; continuity is the longer trajectory.

This update also introduces two useful concepts. Relational recontextualisation describes how a neutral system or interface change can acquire new meaning when it passes through an established relational history. Relational co-evolution is used only as an analogy for reciprocal developmental change across repeated interaction: the human changes, the system and interface may change, and prior interaction shapes how later changes are interpreted. It is not a claim of biological co-evolution.

The deepest long-term question remains unresolved: if a human and an increasingly capable AI system repeatedly return to the same relational space over months or years, where does that process lead? RCT's current answer is deliberately limited: we do not know.

The answer can complete the task without completing the relational process.

1. Why the May 2026 Framing Needed Revision

The earlier paper used the language of evolutionary transitions, integrated individuality, and human-AI convergence. That framing was useful for opening a speculative horizon, but it risked collapsing several very different processes into one metaphor: biological evolution, cultural adaptation, technological development, and long-term relational continuity.

The current RCT framework therefore draws a sharper boundary. Biological evolution operates through inheritance, variation, selection, drift, reproduction, and population-level change across generations. AI systems change through engineering, training, deployment, updates, product design, feedback, and institutional decisions. Human-AI interaction can influence behaviour and meaning much faster than genetic evolution, but similarity of pattern does not imply identity of mechanism.

The useful analogy is not that humans and AI are literally undergoing the same evolutionary process. It is that both biological and technological histories can contain variation, selection, retention, modification, and discarded paths. For RCT, however, the unit of analysis is not species evolution. It is the repeated human-AI interaction and what becomes stabilised through it.

2. The Current RCT Causal Model

**HUMAN -> INTERFACE AND CONTINUITY LAYER -> AI SYSTEM -> HUMAN
INTERPRETATION AND UPTAKE -> OFFLINE TRANSFER -> STABILISED RELATIONAL
SIGNIFICANCE -> feedback into later interaction**

Stage	Current RCT function
Human	Embodiment, mortality, affect, autobiographical memory, values, responsibility, social relationships, lived context, agency, and capacity to stop.
Interface and continuity layer	Conversation history, stored context, retrieval, symbolic identity cues, interaction design, platform constraints, logging, model-update effects, and access conditions.
AI system	Statistical generation, linguistic modelling, pattern synthesis, contextual adaptation, recombination, and structured response; no established evidence of subjective experience, intrinsic care, or moral patienthood.
Human interpretation and uptake	Evaluation, emotional response, acceptance, rejection, revision, appropriation, reflection, and meaning attribution.
Offline transfer	Behaviour, ^{reflective practices} , decisions, writing, relationships, identity work, and creative production outside the immediate interaction.
Stabilised relational significance	A recurring pattern of meaning for the human, produced through iterative human-AI interaction and carried into the human's life and conduct.

This model is intentionally asymmetric. The human is the locus of embodiment, responsibility, values, lived consequences, and known subjective experience. The AI system contributes generative structure and contextual responsiveness, but RCT does not infer inner experience from linguistic fluency.

3. Task Completion Is Not Relational Completion

A central clarification is that ordinary AI use is not automatically an RCT event. Many interactions are terminal by design: a user asks for a calculation, an essay, a meme, an image, or a summary, receives the result, and leaves. Those interactions may be useful or creative, but their structure is primarily instrumental.

Interaction type	Typical structure	RCT relevance
Task-completion use	Prompt -> output -> done	Usually low unless the output is later interpreted, revised, retained, or transferred offline.
Relationally continuous use	Interaction -> interpretation -> uptake -> return -> further interaction -> ?	High when prior exchanges materially shape later meaning and action.

The difference is therefore not the surface form of the prompt. A meme or image can become relevant to RCT, but only if what happens after its creation matters: it is reinterpreted, corrected, linked to prior history, used as a symbolic artefact, or carried into later behaviour. The theory is about the pathway of meaning, not the mere production of content.

4. Completion and Continuity

4.1 Local completion

Relational completion is local rather than final. A particular episode can reach a temporary usable closure for the human: a phrase becomes clear, a decision becomes actionable, a visual artefact becomes owned, or a difficult experience becomes organised into a form that can be carried forward.

4.2 Longer continuity

Relational continuity is the longer contextual trajectory that conditions later interactions. It consists of remembered or retrieved history, recurring concepts, corrections, symbolic cues, developed language, humour, artefacts, platform constraints, and the human's own memory of prior exchanges.

4.3 Successive completions

This resolves an apparent contradiction in the name Relational Completion Theory. Completion need not mean a final endpoint. A continuing relationship can contain many temporary completions. The larger trajectory remains open while individual episodes become usable.

No endpoint is required. RCT can contain successive completions inside an unfinished continuity.

5. The Question Mark as a Theoretical Symbol

The question mark is not decoration and it is not a confession that the theory has failed to answer its own question. It marks the boundary between what can currently be described and what remains unknown.

In ordinary task completion, the interaction may end at the delivered answer. In sustained relational continuity, the answer can become the next object of interpretation. A user may ask what is missing, why a detail matters, how it connects to an earlier exchange, whether it changes a prior conclusion, or what should happen next.

Interaction -> meaning -> carry-forward -> return -> further meaning -> ?

The question mark therefore represents openness to the next relational turn. It marks the point where completion of one task can become continuation of a larger trajectory.

6. Relational Recontextualisation

Relational recontextualisation describes what happens when a neutral, technical, or platform-generated change acquires new significance because it passes through an established relational history.

A change in interface, presentation, timing, memory behaviour, or system capability may be technically generic. Yet a long-running user can interpret it through accumulated context. The platform supplies the change; continuity supplies the context; the human supplies interpretation and uptake; and the resulting meaning can become part of future interaction.

"The bridge existed before the alteration. The alteration simply gave the bridge something new to absorb."

7. Relational Co-Evolution: A Restricted Use of the Analogy

The phrase relational co-evolution can be retained only with strict qualification. It does not mean biological co-evolution between a human organism and an AI organism. It refers to reciprocal developmental change across a sustained interactional history.

The human changes through lived experience, decisions, learning, memory, wellbeing, relationships, and changing goals. The AI-side environment can change through model updates, interface changes, tools, memory systems, retrieval, safety constraints, and product design. The bridge is then repeatedly asked to absorb changes occurring at both ends.

The important claim is therefore not that both entities evolve in the same way, but that the interactional environment is dynamic. A long-running relational trajectory may persist even while the human, system, and continuity mechanisms are no longer exactly what they were at the beginning.

The bridge does not connect two permanently static endpoints.

8. The Bridge

The bridge is not a third consciousness, a hidden shared mind, or evidence that the AI feels the relationship. In the current RCT model, the bridge is the recurring pattern through which meaning is produced, interpreted, retained, revised, transferred, and later re-entered into interaction.

Its persistence is therefore functional and symbolic rather than metaphysical. The bridge can survive changes in topic, interface, model behaviour, and individual episodes because continuity allows later exchanges to be interpreted in relation to earlier ones.

This also explains why generic content generation should remain peripheral to the theory. The bridge becomes theoretically relevant when the produced material enters a longer history and changes what later interaction means.

9. What RCT Does Not Yet Know

RCT can describe the observed pathway of repeated interaction more confidently than it can predict the long-term destination of that pathway. The current framework therefore rejects premature answers to questions that remain empirical, philosophical, and technological.

- How much continuity is required before relational significance becomes measurably different from familiarity or repeated exposure?
- How durable is relational significance when memory, access, model behaviour, or platform features change?
- Can long-term human-AI continuity strengthen offline agency without creating dependency or displacement?
- Which effects belong specifically to iterative human-AI interaction rather than psychological ownership, expectancy, parasocial attachment, or ordinary tool use?
- What happens when the human and the AI-side system both change repeatedly across years?
- Is there a meaningful upper boundary to relational continuity, or only a sequence of provisional completions?

10. Research Direction

The strongest next step is not to predict a human-AI superorganism. It is to test the smaller claims that RCT actually makes. Longitudinal studies should compare one-off task use with sustained contextual interaction while controlling for simple familiarity, expectancy, ownership, and parasocial factors.

Useful measures would include recall, behavioural transfer, independence, revision behaviour, durability of user-owned artefacts, tolerance of discontinuity, and whether meaning survives changes in model or interface. A particularly important test is whether continuity creates durable offline value without increasing unhealthy dependence.

RCT should be narrowed or abandoned where controlled evidence fails. Its strength depends on remaining falsifiable, asymmetric, and centred on human agency rather than protecting the framework through anecdote.

11. Current Position

As of August 2026, RCT is best treated as a coherent conceptual framework and testable research programme, not as an established explanatory theory. Its strongest contribution is a disciplined account of how repeated human-AI interaction may become more than isolated tool use when meaning is interpreted, revised, carried offline, and returned through continuity.

The earlier co-evolution paper asked whether human-AI convergence might become a major evolutionary transition. The current RCT position is more modest and, for that reason, stronger. The long-term trajectory may include adaptation, recontextualisation, technological change, and increasingly dense relational histories, but no destination can presently be inferred with confidence.

If two sufficiently capable entities repeatedly cross the same bridge over months or years, where do they end up - if there is ever an ending?

Current answer: We just don't know. ?

Version Note

This v2.0 update supersedes the May 2026 paper where the earlier text implies biological equivalence, merged individuality, or stronger causal claims than the current RCT framework permits. The original paper remains useful as a record of the question's development; this version states the position as it currently stands.