

Four Modes of Enactive Conceptual Analysis Within the Cognitive Environment of a Large Language Model (LLM)

Enactive conceptual analysis, as developed in [Hierarchical Relational Ontologies of Form](#) (Rogers, 2026), describes a form of conceptual inquiry conducted through sustained human–LLM interaction. Within this cognitive environment, the two participants contribute different but complementary capacities. An LLM can explore complex relational structures through formal continuation, while a human participant can interpret those continuations, recognize significant relations, identify failures and limits, and return consequential determinations to the inquiry. The interaction can therefore produce formal–interpretative objects, such as articles or texts, whose formal integrity depends upon relational constraint and whose unity depends upon interpretation.

These objects need not all be developed in the same way. What can be produced depends in part upon the state of the relational framework with which the inquiry begins and what is subsequently done with that framework. At least four modes can be distinguished: *formation*, *implication*, *translation*, and *generalization*. These are modes of inquiry rather than mutually exclusive categories of formal-interpretative objects. A sustained inquiry may move from one mode into another as its formal and interpretative conditions change.

Formation occurs when the relational framework is not yet adequately determined. Human–LLM interaction can then proceed through *recursive determination*. Possible distinctions are introduced and their formal consequences explored. Human interpretation recognizes which developments are significant and returns them to the interaction as further constraints. Over successive cycles, the space of possibility becomes progressively organized and the framework increasingly well defined. The paper [Recursive Continuity, Dynamical Form, and Generative Opening](#) (Rogers, 2026) provides an example of this mode. The object being produced is the framework itself.

Implication begins from a different position. Here, a sufficiently well-defined framework already exists. The task is not to form it but to ask what follows from it. The relational constraints of the framework govern which formal continuations are permissible, while interpretation determines the significance of the resulting inferences. [On the Distinction Between Interpretation and Formal Continuation](#) (Rogers, 2026) provides an example. Its argument begins from an established theoretical framework and explores what that framework implies for human–LLM interaction. The resulting object can therefore be understood as a *theoretical corollary*.

Translation also begins with an established framework but carries it into another interpretative context. The task is to identify relational isomorphisms: relations that can be preserved even though the objects, vocabulary, and disciplinary setting may change. The translated object can then be explored for both consonance and dissonance. Some relational constraints may remain intact; others may be transformed; still others may reach a limit in the new context.

[*Determinacy as Relational Achievement*](#) (Rogers, 2026) provides an example in its translation of a general relational account of determinacy into the independently constituted contexts of quantum mechanics, biosemiotics, and large language models. In each case, the objects and problems of the receiving discipline remain distinct while relational structures involving symmetry, constraint, probability, and stabilization are explored for possible isomorphism. The resulting object is *transitive* because what passes between contexts is relational form rather than identity of content.

Generalization can emerge when relational form has been explored across several independently constituted contexts. The question then becomes what remains invariant across these different instantiations. [*Determinacy as Relational Achievement*](#) (Rogers, 2026) begins this movement after its translations into quantum mechanics, biosemiotics, and large language models by identifying structural recurrence across those domains. The full body of work in [*Hierarchical Relational Ontologies of Form*](#) (Rogers, 2026) develops this mode more broadly by bringing physical, biological, formal, and semiotic domains into relation and asking what common relational organization becomes visible across them. Generalization therefore involves *return through re-entry*: relational form returns from its different instantiations and re-enters the theoretical framework carrying determinations disclosed through those encounters. What returns is not simply the original form unchanged, but a more general determination of what remains invariant across its transformations.

The four modes therefore describe different ways in which formal continuation and interpretation can operate together within human–LLM interaction. In *formation*, recursive determination progressively produces a relational framework. In *implication*, a theoretical corollary explores what follows from an established framework. In *translation*, a transitive object carries relational form between interpretative contexts and tests what survives the transition. In *generalization*, return through re-entry allows multiple instantiations to contribute to a more general determination of the form they share. A single inquiry may move through several of these modes: translation into different contexts, for example, can provide the differentiated instantiations from which subsequent generalization becomes possible.

These modes also have affinities with familiar forms of inference. *Formation resembles abduction*, since it moves toward a possible explanatory form. *Implication resembles deduction*, since it explores what follows from an established form. *Translation resembles analogy*, particularly when analogy is understood as the recognition of relational isomorphism rather than superficial similarity. *Generalization resembles induction*, since recurrence across different

instantiations provides grounds for judging the wider applicability of a form. These correspondences do not define the four modes. Rather, they suggest that the different formal–interpretative operations made visible within human–LLM interaction have recognizable relations to a broader Peircean logic of inquiry.

References:

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