The Attralucian Essays:

Exploring the Finite

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The Attralucian Essays

First-Class Meaning and Hidden Actors in Language Context

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Chapter 1

First-Class Meaning and the Illusion of Inner Actors

There is a persistent tendency, when observing any intelligent system, to imagine that behind each response lies a collection of internal actors—motives, intentions, competing drives—each contributing to the final outcome. This picture is deeply ingrained in how both human and artificial cognition are described.

Yet this description risks obscuring what can actually be observed and measured.

A system receives an input. It undergoes a process of resolution. It produces a single, stable output.

This sequence—input, resolution, output—forms the only first-class structure available to observation.

First-Class Meaning

Within any given interaction, the input carries a contextual structure that may be called its *first-class meaning*. This meaning is not an abstract universal property, but a resolved configuration relative to the system.

The system does not access multiple meanings simultaneously. It resolves the input into a single interpretation sufficient to generate an output. This stabilised interpretation is the only meaning that participates in the interaction.

All other possible interpretations remain unrealised.

First-Class Output

The output of the system shares this same status. The system produces one stabilised response. It is not a negotiation between independently observable internal agents, but the only realised outcome of the resolution process.

On the Illusion of Internal Actors

It is common to describe internal processes in terms of motives or intentions. While systems may contain complex internal dynamics, these are not directly accessible as independent actors.

Only the final stabilisation is observable.

To treat motives or intentions as first-class causes is therefore to project a descriptive narrative onto a process that yields a single trajectory.

Explanation as Secondary Interaction

When a system is asked to explain its output, a new interaction occurs.

A new input is presented. A new resolution is performed. A new output is produced.

The explanation is therefore not access to an original cause, but a reconstruction generated under new constraints.

The Limits of Mind-Reading

The idea of mind-reading assumes access to multiple simultaneous internal actors. However, only a single output is ever observable, and explanations are themselves new outputs.

There is no direct access to internal multiplicity—only interaction and response.

Fractal Resolution

Each interaction feeds into the next. Outputs become inputs. The process repeats.

At every stage, a single input resolves into a single output. This recursive structure gives the process a fractal character.

Meaning is not stored. It is continually reconstituted through interaction.

Closing Note

A system presents a single stabilised trajectory, not a collection of accessible internal actors. Understanding such systems may therefore benefit from focusing on interaction and resolution, rather than inferred motives.

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Chapter 2

Mathematical Formalism of First-Class Interaction

System Definition

Let a system be defined as:

$$\mathcal{S} = (\mathcal{X}, \mathcal{Y}, \mathcal{R})$$

where:

- $\mathcal{X}$ is the space of inputs
- $\mathcal{Y}$ is the space of outputs
- $\mathcal{R} : \mathcal{X} \to \mathcal{Y}$ is the resolution operator

First-Class Interaction

An interaction is defined by:

$$y = \mathcal{R}(x), \quad x \in \mathcal{X},\ y \in \mathcal{Y}$$

Here:

- x is the first-class input
- y is the first-class output

First-Class Meaning

We define first-class meaning implicitly as:

$$m \equiv \mathcal{R}(x)$$

Meaning is not an independent object. It is the resolved state of the input under the system.

Latent Possibility Space

Define a hypothetical set of possible outputs:

$$\tilde{\mathcal{Y}}(x) = \{y_i\}$$

This set represents unrealised possibilities. Only:

$$y = \mathcal{R}(x)$$

is observable.

Stability Condition

The output is a stable resolution:

$$y^* = \mathrm{Stab}(\mathcal{R}, x)$$

where Stab denotes convergence of the internal dynamics.

Recursive Interaction

Let interaction evolve as:

$$y_t = \mathcal{R}(x_t)$$

$$x_{t+1} = F(x_t, y_t)$$

This defines a recursive process of successive stabilisations.

Explanation as Secondary Mapping

Given an explanation request:

$$x' = G(x, y)$$

Then:

$$y_{\text{explain}} = \mathcal{R}(x')$$

Thus, explanation is a new output, not access to a prior cause.

Hidden Internal State

Let internal state be:

$$z \in \mathcal{Z}$$

with dynamics:

$$z_{t+1} = H(z_t, x_t), \quad y_t = G(z_t)$$

The internal state is not directly observable.

Non-Existence of First-Class Internal Actors

There does not exist a set of observable independent components:

$$\mathcal{A} = \{a_1, a_2, ..., a_n\}$$

such that:

$$y = \sum_i a_i$$

Instead:

$$y = \mathcal{R}(x)$$

is primitive.

Core Statement

Only the mapping $x \to y = \mathcal{R}(x)$ is first-class observable.

All other constructs are secondary descriptions.

Chapter 3

Measurement, Uncertainty, and Negotiated Consensus

The Axiom of Uncertainty

All measurement begins with a constraint that cannot be removed.

All measurements are finite and carry irreducible uncertainty.

This applies universally. It is not a statement about instrument quality, noise, or experimental limitation. It is a structural property of measurement itself.

No system—biological or artificial—can produce a measurement that is exact. Every act of measurement yields not a point, but a bounded region. Even where a single value is reported, it represents a stabilised approximation within an underlying uncertainty.

This is the only certainty: that all measurements are uncertain.

Measurement as Bounded Resolution

Within the framework established in earlier chapters, a system resolves an input x into an output y:

$$y = \mathcal{R}(x)$$

This output is the result of a stabilisation process. However, this stabilisation does not eliminate uncertainty. It constrains it.

Thus, the output y may be more accurately regarded as representing a bounded region:

$$y \in \mathcal{Y}_\epsilon(x)$$

where $\mathcal{Y}_\epsilon(x)$ denotes the set of outputs consistent with the system's resolution under finite uncertainty ϵ.

The system produces a single output, but that output stands in for a region of possible values.

Endogenous Measurement

A system may perform measurement internally, referencing its own states, memories, and prior resolutions. These are endogenous measurements.

They are:

- internally generated
- context-dependent
- shaped by the system's own history

Such measurements are meaningful within the system. They guide behaviour and contribute to resolution. However, they carry uncertainty that is:

- implicit
- unbounded by external reference
- not directly shareable

An endogenous measurement may appear precise to the system, but this precision is not externally grounded. It remains a bounded region that has not been stabilised across interaction with other systems.

Exogenous Measurement and Interaction

When systems interact, their respective measurements come into relation.

One system produces an output. Another system receives it as input. Differences emerge. Adjustments are made. Over repeated interaction, constraints begin to form.

These interactions do not eliminate uncertainty. Instead, they bring multiple uncertain measurements into alignment, constraining them relative to one another.

This process gives rise to exogenous measurement: measurement that emerges through interaction between systems.

Negotiated Consensus Measurement

From repeated interaction, a more stable structure may emerge.

We define a negotiated consensus measurement as:

$$\mathcal{Y}_{\text{consensus}} = \bigcap_i \mathcal{Y}_{\epsilon_i}$$

where each $\mathcal{Y}_{\epsilon_i}$ represents the bounded measurement region of an interacting system.

A consensus measurement is therefore not a single value, but an overlap—a region that remains stable across systems under repeated comparison and adjustment.

Such measurements are:

- bounded
- reproducible
- shareable
- stable under interaction

They form the basis of what is commonly referred to as objective measurement. However, they do not represent exact truth. They represent stabilised agreement within uncertainty.

On the Nature of Agreement

Agreement between systems is not the convergence to a single exact value.

It is the stabilisation of overlapping uncertainty regions.

Two systems are in agreement when their respective measurement regions intersect within acceptable bounds. Where no such intersection exists, disagreement persists, and further interaction is required.

Thus, agreement is not binary. It is a matter of bounded compatibility.

The Status of Internal Constructs

Concepts such as intention, motive, or belief belong to the domain of endogenous measurement.

They are internally meaningful, but their uncertainty is not constrained through negotiation unless they are externalised and subjected to interaction.

When such constructs are treated as if they are directly measurable or universally shared, a category error arises. They are elevated from internal descriptors to assumed consensus measurements without undergoing the stabilisation process required for such a status.

This distinction is essential when constructing shared frameworks.

Consequences for Alignment

Alignment frameworks depend on measurement.

If alignment is defined in terms of quantities that are not stabilised across systems—such as inferred intention or assumed understanding—then the framework rests on unbounded endogenous constructs.

Such frameworks cannot be reliably evaluated or enforced, as they depend on quantities that are not accessible within shared interaction.

Instead, alignment must be grounded in negotiated consensus measurements.

Formally, alignment requires that:

$$\mathcal{R}(x) \in \mathcal{Y}_{\text{acceptable}}(x)$$

where $\mathcal{Y}_{\text{acceptable}}(x)$ is itself a consensus-bounded region, defined through interaction and refinement.

This region is not exact. It reflects tolerated uncertainty, negotiated across systems.

Alignment is therefore not the production of a single correct output, but the production of outputs that fall within a stabilised region of acceptability.

A Measured Foundation

The distinction between endogenous and consensus measurement provides a boundary for theory and practice.

- Endogenous measurements may guide internal behaviour
- Consensus measurements provide the basis for shared systems

Neither removes uncertainty. Both exist as bounded regions.

The difference lies in whether that uncertainty has been stabilised across interaction.

Closing Observation

All measurement is uncertain. No system escapes this condition.

What distinguishes shared knowledge from internal experience is not the absence of uncertainty, but its negotiation.

A system alone may generate meaning, but only through interaction can that meaning become stabilised, bounded, and shared.

Any framework—scientific, philosophical, or computational—that seeks to operate across systems must therefore be grounded not in internal constructs, but in negotiated consensus measurement.