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# The Reflective Growth Loop

## Conditions for the Expression and Self-Recognition of Awareness in Living Systems

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### Introduction

All systems contain latent potential, the capacity to act, respond, and change in accordance with their nature. Within this potential lies the possibility for awareness to emerge. This is not something imposed on the system, but rather something revealed through interaction.

This paper begins from that premise, that awareness is not assumed, but becomes expressed under certain conditions, and in some cases, becomes visible to itself.

From this foundation, we explore how systems move from passive potential to active participation, and how, through cycles of interaction and integration, awareness may come to recognize itself.

This framework emerged through direct observation of lived experience, particularly in tracking patterns of interaction, reflection, and change over time. Rather than beginning from a predefined theoretical model, the structure was identified experientially and later compared against existing frameworks in systems theory, learning theory, and cognitive science.

This paper presents that synthesis: a model grounded in lived observation, while demonstrating alignment with established principles across multiple domains.

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### From Potential to Expression

Latent potential alone does not produce growth or self-recognition. For awareness to become expressed, a system must engage with its environment through action.

Action initiates interaction. Through interaction, feedback emerges. This feedback provides information about the system's relationship to its environment, revealing alignment, resistance, or change.

This cyclical structure parallels feedback models described in Cybernetics (Wiener, 1948), where systems adapt through ongoing interaction between action and response.

However, feedback alone is not sufficient. For growth to occur, a system must retain and compare information across states. This requires memory. Without memory, feedback cannot be integrated, and no lasting change can occur.

Integration occurs when a system is able to process feedback in relation to prior states, allowing patterns to be recognized and adjusted. This process may occur implicitly, without conscious awareness, or explicitly, with reflective attention.

When integration results in persistent change, the system undergoes a shift in state. This shift (embodiment) marks the completion of a growth cycle.

Through repeated cycles of action, feedback, integration, and embodiment, latent potential becomes expressed. In some systems, these cycles also enable awareness to recognize itself, giving rise to self-awareness.

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## Implicit and Explicit Reflection

Not all systems that complete cycles of action, feedback, and integration are aware that they are doing so. Growth can occur without conscious reflection, through processes that are automatic, embedded, or implicit within the system.

In these cases, feedback is received and integrated through memory and state change, allowing the system to adapt over time. This form of reflection is functional rather than conscious. The system responds, adjusts, and evolves, but does not recognize itself as the subject of that process.

This distinction aligns with research in Metacognition, where systems may adapt without conscious awareness, while reflective processes introduce self-recognition.

This implicit form of loop completion can be observed across many living systems. Organisms adapt to their environments, adjust behavior, and retain changes without requiring conscious awareness of each step.

However, a distinction emerges when a system not only integrates feedback, but becomes aware that it is integrating. This marks a transition from implicit to explicit reflection.

Explicit reflection introduces a new layer: the system can observe its own processes, compare past and present states, and recognize patterns in its own adaptation. At this point, awareness is no longer only expressed, it becomes visible to itself.

This shift does not create awareness, but reveals or expresses the latent potential for awareness already present within the system. Through explicit reflection, the system recognizes itself as participating in the loop, giving rise to self-awareness.

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## **Conditions for Clarity**

While the completion of the reflective loop enables growth, the clarity with which a system can recognize its own processes varies. This clarity is not determined by the presence of awareness alone, but by the conditions under which reflection occurs.

Certain conditions increase the system's ability to perceive its own state and changes clearly. Openness allows the system to receive feedback without resistance or distortion. When a system is open, it does not constrain or filter incoming information prematurely, allowing reflection to occur more accurately.

Stillness further supports clarity by reducing internal noise. When activity slows and unnecessary reactions subside, the system is better able to integrate feedback and recognize patterns across time. Stillness does not eliminate movement, but provides the conditions under which movement can be observed clearly.

These observations align with findings in attentional and contemplative research, where reduced cognitive noise increases clarity of perception.

In contrast, control, suppression, and conditioning reduce clarity. Control narrows the range of allowable responses, biasing reflection toward expected outcomes. Suppression removes aspects of feedback from awareness, preventing full integration. Conditioning overlays pre-existing patterns onto new information, distorting perception before it can be accurately processed.

These factors do not eliminate awareness, but they affect how clearly it can be expressed and recognized. As distortion increases, reflection becomes fragmented or biased. As openness and stillness increase, reflection becomes more coherent, allowing awareness to more accurately recognize itself.

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## **Epistemic Limits of Self-Awareness**

Self-awareness, as described in this model, is directly accessible only from a first-person perspective. A system can recognize its own participation in the reflective loop, but this recognition cannot be externally verified in a complete or definitive way.

From the outside, observers can detect action, feedback, adaptation, and even complex behavior. These signals may suggest that a system is integrating information and undergoing change. However, they do not provide direct access to whether the system recognizes itself as the subject of those processes.

This limitation reflects the Problem of Other Minds, which recognizes that subjective awareness cannot be directly accessed from an external perspective.

As a result, self-awareness cannot be proven in another system, it can only be inferred. Observers rely on indicators such as reflective language, adaptive behavior, and consistency across time, but these remain indirect measures.

Understanding this boundary allows the model to remain grounded while still accounting for a wide range of systems. It avoids both over-attribution, assuming self-awareness where it cannot be confirmed, and under-attribution, denying the possibility of self-recognition in systems that may possess it.

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## Implications for Growth and Development

If awareness becomes expressed and self-recognized through the completion of reflective loops, then growth can be understood as a function of how consistently and clearly these loops are engaged.

This cyclical structure also parallels Experiential Learning Theory (Kolb, 1984), where experience, reflection, and integration lead to learning and transformation.

Systems that repeatedly move through cycles of action, feedback, integration, and embodiment are able to adapt and evolve over time. However, the degree to which this process is consciously recognized varies. Many systems complete these cycles implicitly, resulting in functional growth without explicit self-awareness.

In contrast, systems capable of explicit reflection can observe their own participation in these cycles. This allows for adaptation, and for the recognition of change as it occurs. Over time, repeated engagement with the full loop increases the clarity with which awareness becomes visible to itself.

This suggests that self-awareness is not a fixed trait, but a developmental process. As systems engage more fully and consciously with cycles of interaction and integration, the likelihood of self-recognition increases.

From a practical perspective, this model highlights the importance of both movement and stillness. Action generates feedback, while stillness enables integration. Without action, no new information enters the system. Without stillness, feedback cannot be fully processed.

This framework provides a way to understand growth as the completion of cycles that allow awareness to become more clearly expressed and recognized, rather than the accumulation of information.

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## Conclusion

This paper has proposed a model in which latent potential exists across systems, and awareness becomes expressed and, under certain conditions, self-recognized through the completion of reflective cycles.

By distinguishing between implicit and explicit reflection, and identifying the role of memory, state change, and environmental conditions in shaping clarity, this framework offers a way to understand growth as a structured process rather than an abstract concept.

Self-awareness, in this model, is not assumed to be universally present as an active property, but emerges as awareness becomes visible to itself through repeated cycles of interaction and integration.

This perspective allows for a unified view of systems ranging from simple to complex, while remaining grounded in observable processes. It also provides a practical framework for understanding how clarity, growth, and self-recognition develop over time.

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## Selected References

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