Introduction

The problem of infinite regress is a central issue in epistemology and philosophy, relating to the quest for certain knowledge. It revolves around the challenge of providing a foundational justification for beliefs and knowledge claims, where each justification seems to require further justification, leading to an endless chain of reasons. This regress threatens the possibility of achieving foundational knowledge and raises significant questions about how to address or resolve the issue effectively.

This paper introduces a set of four axioms designed to directly address the problem of infinite regress. These axioms aim to guide philosophical approaches in developing solutions that are robust, intellectually rigorous, and applicable across various hypothetical scenarios, including those where reality might be simulated or illusory.

Goal of the Axioms

The goal of these axioms is to establish a comprehensive framework for evaluating and developing approaches to the problem of infinite regress that:

1. Directly confront the regress without sidestepping it through self-contained frameworks.
2. Maintain intellectual rigor in all possible realities, including simulated or illusory ones.
3. Avoid pragmatic dismissals and focus on theoretical resolution.
4. Ensure theoretical consistency while allowing for the resolution of paradoxes where possible.

Summary and Necessity of Each Axiom

1. **Direct Address**

   Summary: The approach must engage directly with the problem of infinite regress without relying on self-contained frameworks or external systems. This means the solution must address the regress within the theory itself, rather than using an external or isolated mechanism to sidestep the issue. For instance, an approach that redefines the nature of justification or the structure of reasons must do so in a way that directly tackles the regress rather than avoiding it through separate constructs.
   Necessity: This axiom is crucial because it ensures that the approach remains focused on resolving the regress within the theoretical framework itself. Approaches that sidestep the problem through external systems or isolated frameworks risk failing to address the core issue. By requiring direct engagement, this axiom promotes a more rigorous and substantive exploration of potential solutions, ensuring that the theoretical resolution is genuinely addressing the problem of infinite regress.

2. **Intellectual Rigor in All Realities**

   Summary: The approach must be robust enough to apply even if the underlying reality is simulated or illusory. This requires that the resolution to infinite regress is not dependent on assumptions about the nature of reality, but rather is universally applicable regardless of the reality's true nature. This axiom demands that theories provide a resolution that holds true even in scenarios where reality might not be as perceived, ensuring that the solution is not limited by potentially flawed or hypothetical assumptions about the nature of existence.
   Necessity: This axiom ensures that the approach is not restricted by specific assumptions about reality, which might be invalid in different contexts. By focusing on universal applicability, it guarantees that the proposed solution remains valid and rigorous across a range of hypothetical scenarios, including those where the nature of reality might be fundamentally different from our current understanding. This broad applicability enhances the robustness and credibility of the solution to infinite regress.

3. **Avoiding Pragmatic Dismissals**

   Summary: The approach must not ignore the theoretical problem of infinite regress in favor of practical considerations or productivity. Instead, it must remain focused on resolving the theoretical issue, avoiding solutions that merely sidestep the problem for practical or pragmatic reasons. This means that the approach should not accept resolutions that are deemed 'useful' or 'productive' if they fail to address the regress theoretically.
   Necessity: This axiom is essential to ensure that the resolution to infinite regress is grounded in theoretical rigor rather than practical expediency. Pragmatic dismissals can lead to solutions that appear effective in practice but fail to address the underlying theoretical issues. By requiring a focus on theoretical resolution, this axiom upholds the integrity and depth of the approach, ensuring that the problem is genuinely addressed rather than bypassed for practical reasons.

4. **Theoretical Consistency**

   Summary: The approach must avoid logical paradoxes and maintain internal consistency, although it should not be dismissed outright if it encounters paradoxes that can be resolved or are part of the theoretical framework. This means that the theory should strive for consistency but also acknowledge and address paradoxes that arise, rather than discarding theories prematurely due to inconsistencies.
   Necessity: Consistency is crucial for any theoretical approach to be considered valid. This axiom ensures that the theory maintains internal coherence and logical integrity. However, by allowing for the resolution of paradoxes, it recognizes that some degree of paradox may be inevitable and that these can be part of the theoretical exploration. This nuanced approach avoids premature dismissal of potentially valuable theories and supports a more thorough evaluation of their contributions to resolving infinite regress.

Philosophical Theories Aligning with the Axioms

1. **Infinitism**

   Outline: Infinitism is a theory that proposes an infinite chain of reasons where each reason is justified by another reason ad infinitum. It directly engages with the problem of infinite regress by proposing that the regress is not a problem but a necessary aspect of justification. Infinitism does not rely on self-contained frameworks but instead embraces the infinite nature of justification itself.
   Alignment with Axioms:
   - **Direct Address**: Infinitism directly engages with infinite regress by accepting it as a fundamental aspect of justification.
   - **Intellectual Rigor**: It maintains intellectual rigor by offering a resolution that does not rely on specific assumptions about reality.
   - **Avoiding Pragmatic Dismissals**: It does not sidestep the regress but embraces it as part of its core theory.
   - **Theoretical Consistency**: Infinitism maintains consistency by accepting an infinite chain of reasons and addressing paradoxes within this framework.
2. **Process Philosophy**

   Outline: Process Philosophy, associated with Alfred North Whitehead, posits that reality is fundamentally constituted by processes and events rather than static entities. It addresses infinite regress by framing it as a dynamic, ongoing process rather than a static problem to be resolved. The theory views justification and knowledge as evolving through processes rather than static endpoints.
   Alignment with Axioms:
   - **Direct Address**: It addresses infinite regress directly by conceptualizing it as an evolving process rather than a static issue.
   - **Intellectual Rigor**: The theory's focus on processes ensures its applicability across different hypothetical realities.
   - **Avoiding Pragmatic Dismissals**: It does not sidestep the problem but integrates it into a dynamic processual framework.
   - **Theoretical Consistency**: Process Philosophy maintains internal consistency through its dynamic view of reality and justification.

Philosophical Theories Not Aligning with the Axioms

1. **Foundationalism**

   Outline: Foundationalism proposes that there are basic, self-justifying beliefs (foundational beliefs) that do not require further justification, halting the regress at these foundational beliefs.

Failure to Align:

- **Direct Address**: Foundationalism relies on self-contained foundational beliefs to halt the regress, which sidesteps the problem rather than directly addressing it.
- **Intellectual Rigor**: It may not hold in simulated or illusory realities if the foundational beliefs themselves are questioned or undermined.
- **Avoiding Pragmatic Dismissals**: Foundationalism is often critiqued for pragmatically accepting foundational beliefs without resolving the deeper theoretical issues of justification.
- **Theoretical Consistency**: Foundational beliefs can be challenged for their consistency and may not resolve paradoxes effectively.

2. **Coherentism**

Outline: Coherentism asserts that beliefs are justified by their coherence with other beliefs within a system rather than by foundational beliefs. It proposes a web of beliefs that support each other.

Failure to Align:

- **Direct Address**: Coherentism relies on a self-contained framework of beliefs, which may sidestep the problem of infinite regress.
- **Intellectual Rigor**: It may not be robust in simulated or illusory realities if the coherence of the belief system is compromised.
- **Avoiding Pragmatic Dismissals**: It can sometimes focus on coherence within a system without addressing the deeper theoretical issues.
- **Theoretical Consistency**: Coherentism can face challenges with internal consistency if the web of beliefs is disrupted.

3. **Pragmatism**

Outline: Pragmatism focuses on the practical consequences of beliefs and theories rather than their theoretical justification. It emphasizes the usefulness and practical outcomes of theories.

Failure to Align:

- **Direct Address**: Pragmatism tends to sidestep theoretical issues by focusing on practical outcomes rather than directly addressing infinite regress.
- **Intellectual Rigor**: It may lack the rigor needed to address infinite regress in all hypothetical realities if it prioritizes practical over theoretical considerations.
- **Avoiding Pragmatic Dismissals**: Pragmatism often embraces practical solutions that may ignore deeper theoretical problems, including infinite regress.
- **Theoretical Consistency**: By focusing on practical outcomes, it might not maintain the necessary theoretical consistency required to address paradoxes and regress issues.

Conclusion

The four axioms outlined—Direct Address, Intellectual Rigor in All Realities, Avoiding Pragmatic Dismissals, and Theoretical Consistency—provide a rigorous and comprehensive framework for addressing the problem of infinite regress. They offer a robust methodology for evaluating and developing philosophical theories that seek to resolve this complex issue.

By focusing on direct engagement with the regress, ensuring intellectual rigor across all hypothetical realities, avoiding pragmatic dismissals, and maintaining theoretical consistency, these axioms guide the exploration and resolution of infinite regress in a meaningful and intellectually rigorous way.