



The Limits of Innateness: A Critical Realist Examination of Chomsky's Theory of Language Acquisition

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Abstract

This paper examines the intersection of Critical Realism and Noam Chomsky's theory of Universal Grammar (UG) within the context of linguistic inquiry. Chomsky's contributions to linguistics, particularly his theory of innate grammar, have sparked extensive debate regarding the scientific rigor of his methodologies. Critical Realism, a philosophical framework that emphasizes the exploration of underlying structures and mechanisms while acknowledging the limitations of human knowledge, provides a unique perspective for evaluating Chomsky's theories. This study applies Critical Realism to assess Chomsky's ontological and epistemological assumptions, empirical validity, and explanatory power, offering a nuanced analysis of Chomsky's approach to language acquisition.

Keywords: Critical Realism, Universal Grammar, Linguistic Inquiry, Ontological and Epistemological Assumption

Introduction

Linguistics, as a field, has long grappled with questions about the scientific methods used to understand language. Central to these debates is Noam Chomsky, whose pioneering theories on innate grammar and Universal Grammar (UG) have profoundly shaped modern linguistic thought. Chomsky's approach, rooted in the belief that linguistic ability is hardwired into the human brain, has garnered both enthusiastic support and considerable criticism. This dichotomy raises important questions about the alignment of his theories with rigorous scientific standards. This paper employs Critical Realism to evaluate Chomsky's scientific methodology in linguistic acquisition. By exploring the ontological and epistemological dimensions of Chomsky's theories, the paper aims to provide a comprehensive perspective on their compatibility with the principles of scientific inquiry.

Chomsky's theory of UG, a cornerstone of his linguistic nativism, posits that humans are born with an innate capacity for language acquisition. According to this theory, all human languages share a common underlying system of principles, suggesting a universal cognitive framework that guides language learning (Lin, 2017). Chomsky (1998) emphasizes this point by stating, "The genetic component of the faculty of language is the initial state of the language faculty," highlighting his belief in the biological basis of linguistic knowledge. This perspective asserts that linguistic competence is not solely a product of environmental input but is significantly shaped by inherent cognitive structures.

Empirical support for Chomsky's theory comes from various lines of research. Studies on infant language development have demonstrated that infants exhibit early sensitivity to linguistic patterns and structures, suggesting an innate predisposition for language learning (Gómez & Gerken, 2000). For instance, research has shown that infants can differentiate between grammatical and ungrammatical sentences even before they begin to speak, indicating that some level of grammatical understanding precedes language production. Additionally, neuroscientific research has identified specialized brain structures involved in language processing, further reinforcing the idea of an innate linguistic capability.

Cross-linguistic studies have also provided evidence supporting UG. Researchers have observed similarities in grammatical structures across unrelated languages, which are interpreted as indications of a universal cognitive



mechanism underlying language. One prominent example is recursion, a hierarchical syntactic structure that appears in many languages. Chomsky (2019) argues that the presence of recursion in diverse languages serves as powerful evidence for an innate, universal language faculty. This notion of UG as a universal cognitive framework has had a significant impact on our understanding of language and has inspired extensive research into the nature of linguistic competence.

Despite this support, Chomsky's theories have faced substantial criticism. Critics argue that UG may not adequately account for the full range of linguistic diversity and variation observed across cultures. For example, Piattelli-Palmarini (1994) contends that Chomsky's theory is an abstraction that does not fully capture the complexities of natural language use. Critics also point out that Chomsky's focus on formal grammatical models and introspection may overlook the influence of environmental, social, and cultural factors on language development. This critique suggests that UG, as conceived by Chomsky, may not provide a complete explanation for the observed diversity in linguistic patterns and practices.

Critical Realism, as articulated by Bhaskar (1975), offers a philosophical framework that challenges reductionist perspectives of positivism and empiricism. It emphasizes understanding the underlying structures and mechanisms that govern phenomena while acknowledging the constraints of human knowledge. Critical Realism posits that there exists an objective reality that is independent of our subjective understanding, advocating for a deeper exploration of causal mechanisms and the interplay between biological, social, and cultural factors.

From an ontological perspective, Critical Realism questions whether UG represents an objective underlying reality or if it is a theoretical construct shaped by specific intellectual paradigms. While Chomsky's UG aims to uncover universal principles underlying all human languages, Critical Realism challenges the notion that UG exists as a static, universal principle independent of linguistic diversity and contextual influences (Jones, 2003). According to Critical Realism, UG should be examined in the context of its interaction with various social, cultural, and historical factors that shape language use and development (Nastar, 2023).

Chomsky's reliance on formal models and introspection has been criticized for not fully capturing the complexity of natural language. Critics argue that UG, as conceived by Chomsky, may not adequately account for the diverse linguistic patterns observed across cultures. For instance, Chomsky's formal models of syntax and grammar may overlook the rich variety of linguistic practices and the influence of social and cultural factors on language use (Shotter, 1992). Critical Realism's emphasis on empirical evidence and reflexivity calls for a more comprehensive approach that integrates observations of linguistic variation with theoretical models (Lipscomb, 2009).

Critical Realism advocates for the use of empirical observation and systematic testing to validate theoretical claims. This perspective highlights the importance of integrating empirical data with theoretical frameworks to ensure their validity and coherence. By incorporating empirical evidence into the analysis of UG, researchers can develop a more nuanced understanding of linguistic phenomena and address the limitations of formal models and introspection.

Chomsky's method of using introspection and intuition to uncover underlying cognitive mechanisms has been foundational to his theories. However, Critical Realism critiques the reliance on introspection as a primary tool for linguistic analysis. Critical Realists argue that empirical observation and systematic testing are essential for validating theoretical claims (Archer, 1998; Canes et al., 2023). This critique underscores the need for a balance between abstract theorizing and empirical evidence in linguistic research.

Critical Realism's emphasis on empirical observation aligns with its broader epistemological stance, which prioritizes the use of systematic and rigorous methods to understand reality. By incorporating empirical data into the study of UG, researchers can address the limitations of introspection and develop a more robust understanding of linguistic phenomena. This approach encourages a more comprehensive and evidence-based evaluation of Chomsky's theories, ensuring that they remain grounded in empirical observations.

Critical Realism advocates for reflexivity, the practice of acknowledging the limitations of knowledge and remaining open to revising theories in light of new evidence. This principle contrasts with Chomsky's adherence to certain core principles of UG despite ongoing debates and empirical challenges. Reflexivity within Critical Realism encourages continuous evaluation and modification of theoretical frameworks based on new empirical findings (Uy et al., 2023).

The critique of UG's empirical and theoretical coherence highlights the need for a balanced approach that integrates abstract theorizing with empirical observation. Critical Realism's emphasis on reflexivity and empirical validation challenges Chomsky's approach to remain open to new evidence and theoretical refinement. This dynamic interplay between theory and evidence is crucial for advancing our understanding of linguistic phenomena and addressing the complexities of language acquisition and use.



A significant point of contention between Chomsky's UG and Critical Realism is the role of structure versus agency in language. Chomsky's focus on innate linguistic principles may downplay the influence of social and cultural factors on linguistic variation. This perspective suggests that UG operates independently of social and cultural contexts, potentially overlooking the dynamic interplay between cognitive structures and external influences (Dąbrowska, 2015).

Critical Realism argues for a dialectical understanding of language, emphasizing the interaction between innate cognitive structures and social, cultural, and historical forces (Bavali & Sadighi, 2008). This perspective highlights the importance of considering how social and cultural contexts shape and are shaped by linguistic structures. By integrating these factors into the analysis of UG, Critical Realism provides a more comprehensive view of how language evolves and adapts over time.

Chomsky's emphasis on formal grammatical rules and synchronic analysis contrasts with Critical Realism's diachronic approach, which considers the historical development and causal processes influencing language (De Souza, 2022). Chomsky's synchronic focus tends to prioritize abstract, acontextual principles over historical and causal factors.

Critical Realism advocates for understanding language as a dynamic phenomenon shaped by complex causal interactions over time. This diachronic perspective challenges Chomsky's focus on static grammatical principles, emphasizing the need to account for the historical and evolutionary processes that influence linguistic structures (Malbas et al., 2023). By incorporating a historical dimension into the analysis of UG, Critical Realism offers a richer understanding of how language evolves and adapts over time.

The evaluation of Chomsky's Universal Grammar through the lens of Critical Realism reveals both alignments and tensions between the two perspectives. Chomsky's UG represents an attempt to uncover underlying linguistic structures and universal principles, aligning with Critical Realism's focus on identifying deeper causal mechanisms. However, Critical Realism challenges UG's claims to universality and objectivity by emphasizing the importance of social, cultural, and historical contexts.

Critical Realism's critique of UG highlights the need for a balanced approach that integrates abstract theorizing with empirical observation. The emphasis on reflexivity and empirical validation calls for continuous evaluation and modification of theoretical frameworks in light of new evidence. By considering the dynamic interplay between innate cognitive mechanisms and external influences, Critical Realism provides valuable insights into the nature of language and the processes shaping its development.

The integration of Critical Realism into the discourse on UG enriches our understanding of linguistic phenomena and offers a more nuanced perspective on language acquisition and use. This approach contributes to a deeper comprehension of the complexities of language and the factors influencing its development, highlighting the need for ongoing dialogue between theoretical constructs and empirical data.

Ontological Analysis

Noam Chomsky's theory of Universal Grammar (UG) has been a cornerstone in the field of linguistics, proposing that humans possess an innate grammatical framework that facilitates language acquisition. According to Chomsky, UG represents a set of abstract principles common to all languages, encoded in the human brain from birth (Chomsky, 1998). This theory aligns with Critical Realism's emphasis on uncovering underlying structures that govern observable phenomena (Jones, 2003).

From a Critical Realist perspective, UG can be interpreted as an attempt to identify these deeper, causal mechanisms underlying language. Critical Realism, founded by Roy Bhaskar, posits that while our perceptions of reality are influenced by social and cognitive factors, there exists an objective reality independent of our subjective understanding (Bhaskar, 1975). Thus, UG could be viewed as Chomsky's attempt to pinpoint an objective, underlying structure of language that is presumed to exist beyond observable linguistic patterns.

However, Critical Realism also challenges the ontological assumptions of UG. It questions whether UG represents an objective reality or if it is a theoretical construct influenced by specific intellectual paradigms. The concern is whether UG is an empirical discovery or a theoretical imposition shaped by Chomsky's conceptual framework (Jones, 2003). This perspective demands a scrutiny of UG's claims to universality and objectivity, urging an examination of how these principles interact with and are influenced by social and cultural contexts.

Critical Realism advocates for a dialectical approach, suggesting that UG should be understood in relation to its interaction with various social and cultural factors. This approach challenges the notion that UG is a static,



universal principle that exists independently of linguistic diversity and contextual influences (Nastar, 2023). By situating UG within a broader socio-cultural framework, Critical Realism encourages a more nuanced understanding of how underlying linguistic principles might be shaped by, and in turn shape, the diverse linguistic environments in which they are found.

Empirical Evidence and Theoretical Coherence

Chomsky's reliance on formal models and introspection has been a subject of criticism, particularly regarding their ability to account for the full complexity of natural language. Critics argue that UG, as conceptualized by Chomsky, may not fully capture the diverse linguistic patterns and variations observed across different cultures and languages (Shotter, 1992). This criticism highlights a potential gap between UG's theoretical constructs and the empirical reality of linguistic diversity.

Critical Realism emphasizes the importance of integrating empirical evidence with theoretical models to ensure their validity and coherence. From this standpoint, the theoretical constructs of UG must be rigorously tested against empirical data to validate their claims. The emphasis on empirical evidence and reflexivity within Critical Realism calls for a comprehensive approach that considers linguistic variation and contextual factors when evaluating the validity of UG (Lipscomb, 2009). This perspective challenges the adequacy of UG's formal models if they do not account for the complexities and variations observed in actual language use.

Epistemological Analysis: Introspection vs. Empirical Observation

Chomsky's methodology heavily relies on introspection and intuition to uncover underlying cognitive mechanisms related to language acquisition and production. This approach has been foundational to his theories but has faced significant criticism. Critical Realism critiques the overreliance on introspection as a primary tool for linguistic analysis, arguing that it lacks empirical grounding and systematic validation (Archer, 1998; Canes et al., 2023).

Critical Realists advocate for the importance of empirical observation and systematic testing to validate theoretical claims. They argue that theoretical models should be subjected to rigorous empirical scrutiny to ensure their accuracy and relevance. This critique underscores the need for a balance between abstract theorizing and empirical evidence in linguistic research. Empirical observation provides a necessary check on theoretical models, ensuring that they align with actual linguistic phenomena rather than remaining confined to abstract speculation.

Reflexivity and Theoretical Refinement

Critical Realism promotes reflexivity, which involves acknowledging the limitations of knowledge and remaining open to revising theories in light of new evidence. This approach contrasts with Chomsky's adherence to certain core principles of UG, despite ongoing debates and empirical challenges. The extent of reflexivity in Chomsky's approach has been questioned, raising concerns about how his theories are subjected to empirical scrutiny and theoretical refinement (Uy et al., 2023).

Reflexivity within Critical Realism encourages continuous evaluation and modification of theoretical frameworks based on new empirical findings. This approach calls for an ongoing dialogue between theoretical constructs and empirical data, ensuring that theories remain robust and adaptable in the face of new evidence. The challenge for Chomsky's UG is to demonstrate its ability to incorporate new empirical insights and refine its principles accordingly.

Structure and Agency

A significant point of contention between Chomsky's UG and Critical Realism is the role of structure versus agency in language. Chomsky's focus on innate linguistic principles may underemphasize the influence of social and cultural factors on linguistic variation. This perspective suggests that UG operates independently of social and cultural contexts, which may overlook the dynamic interplay between cognitive structures and external influences (Dąbrowska, 2015).



Critical Realism argues for a dialectical understanding of language, considering the interaction between innate cognitive structures and social, cultural, and historical forces. This perspective emphasizes that linguistic phenomena cannot be fully understood without acknowledging the role of social and cultural contexts in shaping language use and development (Bavali & Sadighi, 2008). By integrating these factors into the analysis of UG, Critical Realism provides a more comprehensive view of how language is influenced by both internal cognitive mechanisms and external contextual forces.

Causality and Historical Perspective

Chomsky's emphasis on formal grammatical rules and synchronic analysis contrasts with Critical Realism's diachronic approach, which considers the historical development and causal processes influencing language (De Souza, 2022). Chomsky's synchronic focus tends to prioritize abstract, acontextual principles over historical and causal factors.

Critical Realism advocates for understanding language as a dynamic phenomenon shaped by complex causal interactions over time. This diachronic perspective challenges Chomsky's focus on static grammatical principles, emphasizing the need to account for the historical and evolutionary processes that influence linguistic structures (Malbas et al., 2023). By incorporating a historical dimension into the analysis of UG, Critical Realism offers a richer understanding of how language evolves and adapts over time.

Conclusion

The analysis of Chomsky's UG through the lens of Critical Realism reveals both alignments and tensions between the two perspectives. While UG represents an attempt to uncover underlying linguistic structures, Critical Realism challenges its claims to universality and objectivity by emphasizing the importance of social, cultural, and historical contexts. The critique of UG's empirical and theoretical coherence underscores the need for a balanced approach that integrates abstract theorizing with empirical observation.

Critical Realism's emphasis on reflexivity and the dialectical interplay between structure and agency provides a more nuanced understanding of linguistic phenomena. By considering the dynamic interaction between innate cognitive mechanisms and external influences, Critical Realism offers valuable insights into the nature of language and the processes shaping its development. This approach enriches the discourse on UG and contributes to a deeper comprehension of the complexities of language acquisition and use.

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