

DEEP AND SURFACE STRUCTURES IN TRANSFORMATIONAL GRAMMAR

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Abstract: *This article explores Noam Chomsky's distinction between deep and surface structures within the transformational-generative grammar framework. Emphasis is placed on how deep structures reflect universal semantic relations, while surface structures represent phonological and syntactic forms realized in actual speech. The study evaluates the theoretical significance of this dichotomy and its implications for linguistic analysis, language acquisition, and syntactic ambiguity.*

Keywords: *deep structure, surface structure, transformational grammar, syntax, Chomsky, ambiguity*

INTRODUCTION

Since the introduction of transformational-generative grammar by Noam Chomsky in the late 1950s, the concepts of deep and surface structures have played a central role in syntactic theory. These notions revolutionized the study of linguistics by proposing that sentence structure operates on more than one level of representation. The deep structure captures the core semantic relations among sentence elements, while the surface structure reflects how those elements are organised for actual articulation. Understanding this distinction provides insights into human linguistic competence, language acquisition, and syntactic ambiguity. This article examines the development of the deep vs. surface structure dichotomy and its ongoing relevance in syntactic theory.

The idea that language is structured in hierarchical representations marked a departure from purely linear, behavioural models of language. According to Chomsky (1957, 1965), syntax should be studied as a form of mental computation where generative rules produce infinite sentences from a finite set of elements. Central to this model is the transformational component which maps deep structures onto surface structures. Deep structure refers to the underlying, abstract syntactic configuration that encodes the fundamental semantic relations of a sentence. It is often considered universal, shared across languages as part of an innate linguistic competence. For example, both "John loves Mary" and the passive "Mary is loved by John" share the same deep structure because both express the same propositional relationship. Deep structure is generated by Phrase Structure Rules (PSRs) and embodies the logical form (LF) of the sentence. The surface structure, by contrast, is the actual arrangement of words as spoken or written. It is what is perceived by listeners and readers. Surface structure results from the application of transformations on the deep structure, such as passivization, interrogativization, or movement operations. For instance, the transformation of a

declarative sentence into a question, “John is eating an apple” → “Is John eating an apple?” involves change only at the surface level.

Transformational rules enable the mapping process between the two levels of structures. Some of the most common transformational processes include:

- Passive transformation
- Wh-movement (e.g., forming questions)
- Deletion and insertion
- Raising and lowering of constituents

These transformations do not alter the fundamental message, but restructure the arrangement of constituents for various syntactic, pragmatic, or stylistic reasons. One of the strongest arguments supporting the existence of deep structures is syntactic ambiguity. Sentences like “Flying planes can be dangerous” are ambiguous because a single surface form corresponds to two different deep structures:

- Deep Structure 1: Planes that are flying can be dangerous.
- Deep Structure 2: The act of flying planes can be dangerous.

Transformational grammar explains that different deep representations may be realised in identical surface forms, solving ambiguities that cannot be accounted for by linear models. Within Chomsky’s theory of language acquisition and Universal Grammar, the deep vs. surface structure distinction plays a critical role. Children, despite being exposed only to surface structures, are believed to subconsciously reconstruct deep structures. Their ability to quickly acquire complex grammatical rules suggests access to a pre-existing system of deep structural knowledge. Despite its influential status, the distinction between deep and surface structures has received criticism. Some linguists argue that the model is too abstract and fails to account for cross-linguistic variation. Others prefer functional or usage-based models of grammar. In later work, particularly within the Minimalist Program (Chomsky, 1995), the explicit distinction between deep and surface structures became less prominent, replaced by a more economical derivational system with fewer levels of representation. Nevertheless, the conceptual influence of the deep/surface distinction remains strong in modern syntactic theories.

Conclusion

The distinction between deep and surface structures introduced by Chomsky fundamentally altered linguistic inquiry by providing a two-layered approach to syntactic analysis.

Deep structures capture the universal and abstract semantic core of sentences, while surface structures represent the diverse and language-specific forms that appear in communication.

Despite some theoretical evolution and critique, the deep vs. surface structure dichotomy continues to inform research in syntax, language acquisition, psycholinguistics, and computational linguistics.

Understanding this relationship is vital for grasping how humans produce and interpret language with remarkable flexibility and creativity.

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