

An Outline of Nativist and Behaviorist Theories of Language Acquisition

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Abstract—Following Noam Chomsky's 1959 critical analysis of the Empiricist BF Skinner, in his now famous book about language acquisition 'Verbal Behaviour', Chomsky developed the generative theory of language acquisition (LA). From which Chomsky eventually proposes the concept of 'Universal Grammar' (UG). Since then a number of other key approaches have been theorized, which argue both for and against the validity and defining terminology of Chomsky's seminal 'Nativist' work. This paper investigates theories related to the early stages of LA, the ongoing influence of Skinner's 'Empiricist' and Chomsky's 'Nativist' theories and touches on how the fundamental ideas in these conceptual frameworks have been refined by later linguistics research. Have the considerably diversifying modern approaches to tackling the science of LA, managed to reinforce or refute Chomsky's and Skinner's theories? The conclusion to this paper will consider whether these concepts are indeed mutually exclusive.

Keywords— Outline, Nativist, Behaviorist, Acquisition.

I. INTRODUCTION

Behaviorist Theory

The linguist B.F Skinner is recognised as championing the 'Empirically' focused Behaviourist approach firmly rooted in an understanding of LA based on observation of children, which ascertains that LA skills are learned, and that children are observed to develop LA based on their social/environmental experiences. This was the theory which was largely discounted in Chomsky's review of 'Verbal Behaviour'. Theories Chomsky argues, which are based in large part on his studies of animal behaviours.

However, there are later behavioural analysis studies which seek to demonstrate that Skinner's findings may not be entirely without merit. For example, Skinner determined that children employ imitation and mimicry to develop nuanced language skills and these are skills learned via parental teaching and external influences, whether taught explicitly or acquired unconsciously. Stephen Hayes' research on 'Relational Frame Theory' (RFT) concurs with Skinner's idea, that 'exemplars' provided in early childhood development is fundamental to developing LA.

"Empirical investigations guided by RFT may generate new procedures for establishing relational skills that correlate with the normal milestones of language and cognitive development, or whose absence correlates with impairments in these areas."

(Hayes, 2001)

Skinner also argues that early learning is built upon with conditioned responses reinforced by parents, by which children were motivated and demotivated to develop functioning language skills. There is an understanding that error correction is key component to this notion. As Rick Dale points out in 'Cognitive and Behavioral Approaches to Language Acquisition: Conceptual and Empirical Intersections'

"The conclusion in the budding cognitive sciences that behavior analysis has little to contribute to understanding language was premature, if not false." (Dale, 2004)

There is a central conclusion that one might also choose to consider in Skinner's theory, according to Chomsky, he concludes that in fully understanding the conditioned response understanding of LA, the knowledge could be used to benefit some idea of social engineering based on the manipulation of the human environment. Chomsky's review of Skinner's 'Verbal Behaviour' states,

"In other words, the goal of the book is to provide a way to predict and control verbal behavior by observing and manipulating the physical environment of the speaker." (Chomsky, Review of Skinner's Verbal Behavior, 1959)

II. NATIVISM

Chomsky published his generative understanding of LA 'Aspects of the Theory of Syntax' in 1965. As earlier outlined, the LAD is an innate pre-programmed ability for humans to genetically share a common human trait, an idea Chomsky calls the 'Language Organ' and is a facility for the complex processing of communication. From this understanding, he goes on to theorize that humans possess an innate, inherited neuro-structural capacity which is neither explicitly taught nor implicitly experienced - Chomsky's 'Universal Grammar Theory' (UG). He initially established this understanding in his 'Review of Verbal Behaviour'.

"The fact that all normal children acquire essentially comparable grammars of great complexity with remarkable rapidity suggests that human beings are somehow specially designed to do this, with data-handling or "hypothesis-formulating" ability of unknown character and complexity" (Chomsky, Review of Skinner's Verbal Behavior, 1959)

Chomsky argues language is 'stimulus independent', that children have the capability to rapidly develop semantically and pragmatically rich language skills, and recall them as required, within meaningful syntactic sequences, to produce infinite meanings, which are not required to have been seen or

experienced. Issues of lexical and grammatical accuracy (or inaccuracy) are recognised and considered within terms of developmental processes, but that intended meaning can be expressed without having mastery of either vocabulary range or grammatical forms.

Chomsky's theory of LA is not entirely directed against Skinner and contrasts with a number of influential empiricists from the early 20th century. Edward Sapir's 'Language: An Introduction to the Study of Speech', contains the following quote,

"Walking is essentially innate. Language isn't--it is cultural and learned" (Sapir, 1921)

Interestingly Sapir does in many ways support Chomsky's less explicit notions of UG, understanding that while all languages contain typological universalities, morphemes, phonemes, words and systemised sentence structures which communicate shared symbolic understanding. This does not denote a cross-cultural shared understanding of either tangible or abstract concepts of human experience. Which he determines are culturally distinguished and fundamentally different. Stating in posthumously published work 'American Indian Grammatical Categories',

"It would be naïve to imagine that any analysis of experience is dependent on pattern expressed in language." (Edward Sapir, 1946)

III. INNATENESS

Chomsky's concept of 'innateness', suggests that specific dynamic aspects of individual languages, the concept of 'how language works' – not merely a biological capacity for the ability to learning languages; which is one of the most fiercely disputed concepts in his theory of the 'Language Organ' whether to accept that innateness exists at all, and if so, to what extent. Leading researchers to design methods to try and prove to what degree innateness exists or disprove this idea entirely.

To explain his statement in simpler terms, Chomsky is suggesting that language is pre-programmed in the brain, like the operating system of computers, that LA is inherent, not just the hardware - the neurological facility. This computer analogy seems particularly useful in understanding the central principle. The concept of software (languages) being the nuanced specifics of language, individual to cultures; but developed in relation to the innate UG (the operating system), and processed by the hardware (the brain) of the individual. (Chomsky, Recent Contributions to the Theory of Innate Ideas: Summary of Oral Presentation, 1967)

Stephen Pinker, supports Chomsky's Nativist beliefs of innateness, which he terms the 'Language Instinct' and he wrote a book about it. In his later work the 'How the mind works' Pinker make this claim about the foetal development of the human brain,

"It is more like a kind of genetic data compression or a set of internally generated test patterns. These patterns can trigger the cortex at the receiving end to differentiate, at least one step of the way; into the kind of cortex that is appropriate to processing the incoming information." (Pinker S., 1997)

The underlying arguments for innateness are that children

quickly become skilled in LA without explicit teaching, via parental exemplars and reinforcement or by their observation of their experiences. Generative linguistic theory considers the understanding of competence in terms of deep and surface grammar structures in language, but fails to provide either definitive proof of these structures; or amongst those researching this issue, agree on a precise understanding of what UG actually is becoming concepts for on-going debate.

Generative theory has clear areas of agreement, that languages themselves are not part of UG, but the grammar rules are in some ways passed down genetically. Studies have tried to examine and reach conclusions about what these might be but have failed to achieve the desired results and generally seem to fall back on the 'Poverty of Stimulus' argument- we don't know what it UG but it's clear that UG exists.

Stephen Krashen's Language Acquisition Hypothesis states, "The first way is language acquisition, a process similar, if not identical, to the way children develop ability in their first language. Language acquisition is a subconscious process; language acquirers are not usually aware of the fact that they are acquiring language, but are only aware of the fact that they are using the language for communication. The result of language acquisition, acquired competence, is also subconscious." (Krashen, 1982).

IV. CONCLUSION

Since first being raised, it seems that the arguments made by both the Empiricist' and Nativist' theorists have failed to reach any conclusive proof in terms of the early stages of Language Acquisition. The scientific understanding of conducting falsifiable research, knowledge of worldwide languages and technological advances in being able to study neurological function has advanced immeasurably since these infamous concepts were first published.

The fact that this new information and ability to research the topic has not lead to a clear understanding is interesting in itself. The arguments from both sides seem focused on a requirement for scientific evidence. With the Nativists caught in a quandary of not having sufficient technology capable of refined neurological exploration, although this has been carried out to a degree given the limited research equipment available.

I tend to agree, that the lack of resolution might well indicate that both Nativists and Empiricists are indeed correct, but each in their own ways to a limited degree. A more comprehensive understanding of this issue will eventually be developed. Until then I am firmly of the belief that both theories are valid to a certain point and that they can coexist when parameters are defined for each.

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