

## Book Review

Lust, B. C. (2006). *Child Language: Acquisition and Growth*. Cambridge: Cambridge University Press.

### Reviewed by

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How children come to acquire language has for years fascinated two major groups: linguists and developmental psychologists. The scientific and philosophical attempts of both camps, as she claims, have come together in Barbara Lust's book in an attempt for a foundation of a rationalist theory of L1 to be formed. The purpose of this book review is to see (a) how this great author manages to reconcile these two views and (b) how she manages to lay down the foundation of an L1 theory. In her book, she reports the scope and nature of this "intellectual feat," and presents results from the last several decades from intensive scientific study of the mystery of its accomplishment. Her book is analogous to a two-lens microscope; the lenses are stacked one on top of another to provide higher resolution of L1 acquisition for the readers. The top lens is, metaphorically speaking, the innateness of Language Faculty; the other lens is the "constrained experience" in the "growth of language". However, despite the great gravitational force of this remarkable book, reading it cover to cover reminds the readers of an Asian tale of the elephant and the blind men. Six blind men study an elephant in a dark room. Each of the six men approaches the elephant from a different perspective and attempts to discern what it is. Each then gives his interpretation of the giant animal, basing their interpretations exclusively on the particular part of the elephant they happened to examine. The first blind man touched the elephant's leg and reported that the unknown phenomenon was a tree trunk. The second blind man touched the elephant's stomach and said that the elephant was like a wall. The third blind man touched the elephant's ear and asserted that the phenomenon was precisely like a fan. The fourth blind man touched the elephant's tail and described the elephant as a piece of rope. The fifth blind man felt the elephant's tusks and declared the phenomenon to be a spear. The sixth blind man touched the elephant's snout and with great fear announced the phenomenon was a snake. The six blind men then got into a

gigantic argument about what the unknown phenomenon really was. That is how the intended audience of the book feels and reacts after reading it.

The book has twelve chapters. The first seven chapters review the generalities of L1: language knowledge, its acquisition and language growth. This review comprises of preliminary investigations of basic theoretical approaches to the study of language acquisition and of basic research results regarding both the underlying biological matrix for language acquisition and the nature of experience in the human species acquiring language. In chapters 8, 9, and 10, the author considers each of the subsystems of language knowledge (phonology, syntax, and semantics). In the end (chapter 12), Lust demonstrates directions for a new approach to a more comprehensive theory of language acquisition. In this regard, she attempts to fuse theory and research.

The title of the book, *Child Language: acquisition and growth*, lays down the ground work for the whole book. Right from the start, the readers are informed that the author makes a distinction between acquisition and growth and the book intends to juxtapose the logical approach (acquisition) and the developmental approach (growth) to this “intellectual feat.” Lust is a professor at Cornell University, teaching “Language Development.” This is probably why language growth is indispensable to her. She also taught this subject as an interdisciplinary survey course, and maybe that is why she is interested in bringing together two different approaches to L1 under one umbrella theory, as she clearly states in the preface, “... the book is essentially interdisciplinary, on the assumption that only an interdisciplinary approach can begin to advance our understanding of the fundamental mystery we are concerned with...” (p. xvii).

In the first chapter, Lust explicitly pledges to her readers “to attempt” to merge the logical and developmental approaches to L1 acquisition. In this regard, on the one hand, she acknowledges that a paradigm such as Noam Chomsky’s (formal characterization of the Initial State) is the most powerful approach to understanding L1. This is the assumption that the book is based upon. On the other hand, she considers paradigms such as Piaget’s as the representative of the developmental approach. However, contrary to Piaget, Lust does not claim that language acquisition is merely the result of cognitive development. She assumes that “the linguistic theory of the Language Faculty is a theory of the cognitive architecture for language knowledge and acquisition” (p. 4). She rejects that language development may lie outside the boundaries of Cognitive science. Instead, she suggests that “language development is inherently computational and thus as central to Cognitive Science as Cognitive Science to it” (p. 4). She also rejects the assumption that language acquisition is reducible to changes in fundamental cognitive structure for language. She instead believes that this architecture is “fixed,” as there is no such thing as “pre-linguistic” child. This is her first attempt to make way for a comprehensive theory of L1. However, one question remains, here, which is attempted to be answered throughout the book without prevail: Does the Language Faculty itself develop over time in the individual?

Chapter 2 views language from the logical perspective. Having tried to define language and to clarify its relation to thought and communication, Lust delves into the discovery

of the place of human language in mind. The author discusses the fundamental properties of the “hidden system” which is in place when children must acquire language: CHL (Computation for a Human Language). Children who acquire a language must acquire computation. This makes productive sequencing and structuring of units and unit combinations according to a principled and constrained system possible. Interpretation of any possible linguistic expression requires children that they transcend the surface string. In other words, children must capture through computation an “underlying representation” for any sentence they hear, speak or think.

Towards the end of this chapter, Lust represents a design of the architecture of the language faculty and a design of levels of representation in language knowledge. These designs are meant to clearly present to the readers the magnitude of the difficulty of the task of language acquisition by children without conscious efforts. However, as this chapter does not concern the developmental side of the L1 discussion, Lust does not attend to it very much at the end except for a few questions, which result confusion in readers. Her attempt to bring together the logical problem and the developmental problem is not fruitful in this chapter.

Chapter three focuses on the problem children face in language acquisition. Lust analyzes the types of evidence children might need in order to acquire a language and in this way, she characterizes the severity of a “Projection Problem”. She concludes that not only is negative evidence generally not accessible to children, but also that positive evidence in the speech stream is essentially indeterminate in connection with the knowledge children must acquire. Both are always only “indirect.” Given that the evidence available to children is fundamentally insufficient, she then considers two other possible approaches through which children might try to solve the problem of language acquisition: prosodic bootstrapping (critical perceptual cues in speech stream) and semantic bootstrapping (extra-linguistic forms of meaning). However, the author sequentially shows that neither of these can solve the fundamental problem. The former has insufficient explanatory power as young learners use prosodic information to discover prosodic structure, not syntactic structure. The latter also fails in the same fashion because meaning is limitless and children cannot know which meanings to assign before knowing a language. Lust concludes that one therefore must look within children, beyond the input, for an explanation of language acquisition. As is evident, the developmental approach was not discussed at all in this chapter.

Chapter 4 is titled strategically: How we can construct a theory of language acquisition? Lust then embarks upon answering the question by introducing the theoretical approaches to the study of language acquisition. She vaguely divides the approaches into classical and current. Classical approaches comprise of two apposed schools: empiricists and rationalists. The current approaches which are the main focus of this chapter are:

## **Rationalist approach**

"Chomsky's theory reflects a rationalist explanation of language acquisition: (a) The ultimate source of knowledge is the mind, not the external input. Grammar in the mind applies to, and to some degree determines, linguistic experience. (b) The essential mechanism of knowledge acquisition lies in the mind's ability to generate what is perceived as input, and to deduce new knowledge. (c) The Initial State is biologically programmed prior to experience in such a way that it makes linguistic experience possible and constrains its form" (p. 52)

The major challenge, Lust faces with this approach, is how to incorporate language development into this if a comprehensive theory of L1 is to be conceived. To resolve this challenge, she talks about the following hypotheses:

### ***An instantaneous hypothesis***

- According to this, UG principles would be instantly and continuously available to children, unchanging over time or with experience (e.g., Chomsky 1988, 73; Chomsky 1975b, 119).

### ***Maturation Hypothesis***

- According to Borer and Wexler (1987, 166), this theory ... does not assume that the formal principles available to children are constant through development. Rather, the assumption is that certain principles mature. The principles are not available at certain stages of a child's development, and they are available at a later stage.

### ***The Strong Continuity Hypothesis***

- This hypothesis maintains UG as a model of the Initial State "prior to experience" and continuous throughout development.

## **Empiricist approaches**

Empiricist theories try to explain language acquisition without imagining the abstract linguistic knowledge. Bates and Mac Whinney (1989, 1987) propose a "Functionalism and Competition Model" (F&CM) of language acquisition, according with general "connectionist" modeling and with a "Language Making Capacity." A "usage-based account" theorizes that language acquisition is based on item by item imitative learning (Tomasello 2000a, b).

The F&CM proposes that Universal Grammar can ultimately be explained without recourse to a special language organ that takes up where cognition leaves off. The source of knowledge is suggested to lie in the input, not in the mind. Discoveries are made during processing of the structure inherent in the input. The mechanisms of acquisition lie in inductive learning. Language acquisition "is guided by form-function

correlations" (Bates and MacWhinney 1989). The relation between input data and the child mind/brain is direct and input-driven.

Lust does not have to discuss the matter of language development separately and explicitly with empiricist approaches because in this approach, language development involves a process of emergence from connections, not a cognitive construction based on cognitive computation over symbolic representations. Tomasello (2000a) in his usage-based account of L1 states that children "imitatively learn" specific "concrete linguistic expressions," without the aid of abstract specifically linguistic principles; then they use general "cognitive and social-cognitive" skills to "gradually and in piecemeal fashion" begin to "categorize, schematize and creatively combine these individually learned expressions and structures".

At the end of the chapter, Lust appears to attempt to resolve the epistemological tension between the two approaches by predictably demanding that the two foci be combined, and to do so, she draws two lists of the prediction of the two approaches. The lists are there to be compared by the readers and hopefully for readers to combine them on their own!

Chapter 5 concerns brain and its role in L1 acquisition. To Lust, brain must have been an important part of a comprehensive theory of L1; that is why she dedicated a chapter to discuss it. Based on her review of a wide variety of works done in this area, in adults, the left hemisphere is responsible for language knowledge and processing. In children, hemispheric asymmetry and left hemisphere specialization for language is evidenced as early as birth. Moreover, she announces that researchers no longer search for a single, specific localization for language in terms of a discrete cortical space, but for an organization of a system. They no longer search for a single gene as an account for L1 acquisition, although the relation between the genetic code, brain structure and function, and development of language knowledge must be related in a full theory of language acquisition.

Chapter 6 is a move away from language faculty towards language experience or "the nature of nurture" in Lust's words (p.101). Up to this chapter, the readers have learnt that the information required to crack the code of language acquisition cannot be directly found in the data. In addition, in many cases children must come to learn what is not possible in their language where the only evidence is present in the non-occurrence of those phenomena. In this chapter, Lust concludes that children are not data driven. That is they are not trying to solve the problem by simply "looking very closely at the data" and "picking up" knowledge from it (p. 121). Instead, children are considering the input and imposing structure on it. They are building a theory about the language to be acquired. Input must fit their theory. Children are selective and reconstructive in use of input data. Children will operate on any amount and any form of available language data in a creative manner, led by internal linguistic biases and supported by strong computational abilities allowing quick, effective use of input. Experience, generally speaking, legitimizes and nurtures the natural creation of

language in the say way as a communicative context. In this chapter, she does not discuss 'development' at all.

Chapter 7 has a developmental perspective with regards to a child's mind. This chapter falls within the domain of psycholinguistics, the study of how the mind represents and processes language. Lust here discusses the nature of children's knowledge about language and its development. In order to learn about this, she suggests that complex inferences be made from children's behavior with language, so the various factors involved in children's performance can be dissociated from factors involved in their knowledge. She clarifies performance by pointing out that it can involve factors such as memory and length of utterance, which may reflect linguistic knowledge. These inferences must incessantly screen children's knowledge of principles and parameters of UG from their knowledge of components of the language-specific grammar, as well as from other cognitive factors. In terms of development, Lust posits that from the analysis of child-language data, we should not only consider knowledge at particular points in time, but constraints over the time course of language acquisition. Certain errors may never come about due to such constraints. The author, in addition, calls for search for "an abstract form of evidence" through which we can assess "what children do not do as well as what they do do systematically" (p. 141).

Chapters 8, 9, and 10 deal with the acquisition of phonology, syntax and semantics. Lust considers the acquisition of both phonology and syntax a discovery of meaningful units, which children later categorize and combine them. From her account of the acquisition of these two language elements, one can infer that children have to link these two distinct levels of representation and do so in a systematic and productive yet constrained manner. However, she approaches semantics, the third level of representation, differently. She is of the opinion that children must bring all their computational power for syntax and phonology to bear on the expression and comprehension of infinite number of thoughts. She calls semantics a "conceptual interface," (p. 240) and relates it to pragmatics, which is "inferential capabilities" (p. 219). Lust believes the acquisition of syntax and phonology is different from syntax as it is a developmental process that continues throughout life.

Chapter 11 looks at the concept of language growth more closely. In this chapter, Lust focuses on mechanisms of developmental change especially after the first twelve months. She briefly introduces several proposed mechanisms of growth and rejects them all except for syntactic bootstrapping because, as she says, children's grammatical analyses lead their language acquisition. She also concludes that children are constantly analyzing language data formally from the start and throughout periods of developing productive language acquisition, and metaphorically speaking, she refers to this development of children as "transforming from tadpole to frog" (p. 242). The excellent cohesion of this chapter aside, the issue of development as part of a comprehensive theory of L1 remains insufficiently clear in this chapter.

Chapter 12 concludes the book as Lust considers it to be a movement toward an integrated theory of language acquisition. Having reviewed the basic areas of language

acquisition, now Lust is ready to lay the foundations for a future theory, which can link both linguistic and developmental approaches. To do so, she puts forward a suggested framework: “grammatical mapping” (p. 267). Lust does not elaborate on this model very much; she only summarizes it in a sentence: “Children use UG to confront the data of the speech stream around them and to create developmentally the Specific Language Grammar (SLG) of their language” (p. 267). That is all! There is no mention of ways of the reconciliation of the logical and developmental approaches and the developmental change in children’s language acquisition is introduced as a mystery.

This critical review paper aimed at answering two questions: How is Lust going to reconcile the logical and developmental approaches? How is she going to present us with a sketch of a framework of a comprehensive theory of L1 which can be promising for future research? In order to answer these questions, Lust set off by collecting results from theoretical and empirical studies, conducted over a wide span of time. This effort brought her to a few important conclusions: First there is no pre-linguistic stage. Second, language acquisition proceeds in parallel across all the fundamental levels of representation, namely phonology, syntax and semantics. Third, children may syntactically bootstrap to language knowledge. Finally, children’s relation to input is highly indirect, and it is guided by the child’s linguistic computation. These conclusions are firmly based within the framework of the logical approach. In all these, the existence of a Language Faculty is taken for granted. However, the development of language knowledge is under-developed in this book. In her final chapter, she asks, “... what exactly is the nature of the change in children’s language acquisition and what causes the change?” (p. 266). Even though she repeatedly talks about language growth in her book, she rarely goes into the depth of what the nature of this development is. She reduces the matter to some questions at the end of some of her chapters and at best a few hypotheses about this whose validities are under scrutiny and yet to be determined. As for a framework for a comprehensive theory of L1, the last chapter ends, leaving the readers wondering what happened to this promised integrated theory. Are the readers supposed to put all these reviews together and come up with one? Or is Lust’s vaguely explained suggested framework the promised end? Readers at the end of the book are analogous to the six blind men in a room where they were tasked to describe an elephant!

## REFERENCES

- Bates, E., & MacWhinney, B. (1987). Competition, variation, and language learning. *Mechanisms of language acquisition*, 157-193.
- Bates, E., & MacWhinney, B. (1989). Functionalism and the competition model. *The crosslinguistic study of sentence processing*, 3, 73-112.
- Borer, H., & Wexler, K. (1987). *The maturation of syntax* (pp. 123-172). Springer Netherlands.
- Tomasello, M. (2000a). *The Cultural Origins of Human Cognition*. Cambridge, MA: Harvard University Press.
- Tomasello, M. (2000). Do young children have adult syntactic competence?. *Cognition*, 74(3), 209-253.