Peirce’s Theory of Signs is a dense, rather difficult book, in which the author makes no concessions to the reader. Short has a thorough knowledge of Peirce’s work and supports his points of view quite clearly, mainly when he argues against the vision of other commentators. Short does not assume that the reader has any specialist knowledge, whether of Charles Sanders Peirce’s philosophy or of contemporary philosophy, yet he cannot claim that it is easy reading. The structure of the language is dialogic, written in the style of Peirce and one notices a mark of humor from the author among the titles and subtitles of the work.

In the Preface the author explains his attempt to show how contemporary discussions in the philosophy of mind and science might benefit from a deeper study of Peirce’s ideas: the purpose of the book is to say what Peirce’s theory of signs is. Short emphasizes that Peirce’s mature semeiotic was developed in an attempt to explain, on a naturalistic basis, what we call “intentionality” of mind. In the author’s opinion, Peirce was bold in many ways, mainly for the ontological depth of his theory of final causation, which challenges contemporary philosophy’s unexamined conceptions of the physical.

The book is divided in twelve chapters and according to the author’s classification, the first two chapters (1. Antecedents and Alternatives; 2. The Development of Peirce’s Semeiotic) are introductory. The following three (3. Phaneroscopy; 4. A Preface to Final Causation, 5. Final Causation) lay the foundations to the mature semeiotic, which is developed systematically in the succeeding four chapters (6. Significance; 7. Objects and Interpretants; 8. A Taxonomy of Signs; 9. More Taxa). The last three chapters seek to apply the foregoing to contemporary issues (10. How Symbols Grow; 11. Semeiosis and the Mental; 12. The Structure of Objectivity).

The purpose of the first chapter, Antecedents and Alternatives, is to put Peirce’s semeiotic into context. The author starts by drawing a short biography of Peirce. He then follows discussing sources of Peirce’s semeiotic in Locke and Kant: Peirce’s theory of signs had its origin in Kant’s theory of knowledge; however, the term “semeiotic” was used by Locke, who included both words and ideas among signs, words being “signs of ideas”, although that wasn’t Peirce’s conception. Short then argues the philosophy of Brentano, Husserl and Continental phenomenology, generally to be a major alternative to Peirce’s mature semeiotic. Peirce rejected all dualisms on the principle that, by positing inexplicables, they block the road of inquiry. As a corollary, he proposed a doctrine of “synechism”. The
first chapter also examines the influence of Aristotle, the Stoics and St Augustine in Peirce’s work.

The second chapter, The Development of Peirce’s Semeiotic, serves several purposes. The first is to show that Peirce’s 1868-9 doctrine of thought-sign was deeply flawed, and that he corrected them in divers steps over many years, a process completed in 1907. The second purpose is to demonstrate that Peirce’s semeiotic was developed with an eye to theories of knowledge and of mind, an issue which adds more value to the book. As expected, the chapter deals with nominalism versus realism and the theory of reality in the context of the years 1859-1877. Yet, which would be the three flaws in the 1868-1869 Doctrine of thought-sign? The first one derives from the doctrine that every thought-sign interprets the preceding sign and that all thought-signs are general. The other two problems derive from the doctrine that every thought-sign is interpreted in a subsequent thought-sign. For Short, that infinite progressus is not itself a problem. Problem is that if a sign’s significance depends on its actually being interpreted and the arbitrariness of the sign related to it, a topic in Peirce’s work which is not clear: significance depends on translation. Summing up, the three main problems of Peirce’s early semeiotic are: it makes the object signified to disappear; it makes significance to be arbitrary; and it fails to tell us what significance is. The first paradox was corrected between 1877-1885 with the new conceptions of 2ndness and of indices. In 1988 he adopted Scotus’ term “haecceity”. The discovery of the index brought up several consequences among which the strengthening of the theory that every cognition is preceded by a preceding cognition ad infinitum. The discovery of the indices led to the development of new classes of signs, interpretants and interpreters other than human and eventually, significance is triadic for Peirce. The second paradox of arbitrariness was corrected based on the idea that signs may be interpreted and reinterpreted ad infinitum, but their being interpreted is not necessary to their having significance, hence, to their being signs. There is a fundamental difference between ultimate interpretant and final, or ideal. And, eventually, the last flaw was corrected in 1907, meaning is not an endless translation of sign into sign, there must always be an interpretant that is ultimate in the sense of not being yet another and there is a difference between ultimate interpretant and final, the final interpretant is the truth sought, but any statement, true or false, final or provisional, must be meaningful, hence, it must have and ultimate interpretant.

The third chapter is about Phaneroscopy, name originally given by Peirce to phenomenology. With the development of an architectonic philosophy, first used by Kant, Peirce emphasized the social aspect of knowledge’s architecture and its evolution over time.
The idea of architectonic is itself teleological and the engine of that development was phenomenology, which in itself required a new model of analysis of the elements and a new way of philosophizing to guide the reader to his/her own experience, and not to the words in themselves, therefore, the experience becomes the center and when analyzing the work of Peirce, one notices that the flow of reasoning becomes clearer and more appropriated. The third chapter introduces the categories 1stness, 2ndness and 3rdness, being the formal structure of phenomenology an elaborated system where, on one hand the categories apply to one another, and on the other, they subdivide endlessly. From the point of view of the metaphysical interpretation of the categories, Peirce distinguishes between reality and existence. The existing is instantaneous, here and now, but there would be no reality without existence, reality refers to the laws which govern actual reactions.

Chapter four, *A Preface to Final Causation*, prepares the ground to final causation (the subject of the subsequent and fifth chapter), where Short revises literature on final causation, citing Plato and Aristotle among others. Human actions are done for the sake of an end or in order to bring it about. Aristotle extended the same way of thinking to natural processes. By “teleology” it is meant such a doctrine as Aristotle’s, that there are final causes in nature. According to Peirce, final causation is not against modern science, but lies implicit in some theories like Darwin’s for example. The author emphasizes the difference between purposes (they are general) and desires (they are particular, psychological). A purpose is a general consequence of that what is desired. Still for this topic, the term mechanical is used in opposition to teleological. There are philosophers who insist that a mechanistic explanation must cite particular mechanisms that “bring about” the effects explained, thus final cause is excluded by our having made mechanistic explanations of particulars always to be by particulars. For a final cause is never a particular.

In the fifth chapter, *Final Causation*, Short inquires if teleology has a future and if it should be excluded by modern science? For the author, in Peirce’s work, some parts suggest that types of outcome play an explanatory role in some science and that this is the key to making final causation inteligible. The analysis of final causation is discussed in term of irreversible phenomena. This is one of the most difficult chapters of the book, in terms of the concepts as much as for the point of view of the examples discussed. The argument on evolution and entropy connected to final causation is important and elucidating. The chapter also discusses the difference between the final causation conception in Peirce and in Aristotle. Yet, the strong point lies on the comparison with contemporary authors including Braithwaite, Ayala, Monod, and Mayr among others. Peirce’s conception of final causation attributes
power to the type itself, independently of that type’s being the nature of any existing individual or being otherwise embodied.

The sixth chapter, **Significance**, studies “sign” and “significance”. In Short’s opinion, the systematic reconstruction of Peirce’s mature semeiotic as a science relies on various aspects of the final causation conception, thus, the “sign” becomes a technical term justified by the power of the system of semeiotic to illuminate a wide variety of phenomena. Short then presents his own definition of “sign” compared to Peirce’s many definitions of “sign”, culminating with the analysis of the 1907 manuscripts where Peirce formulated the differences between final (triadic) and mechanical (dyadic) action.

The seventh chapter, **Objects and Interpretants**, deals with various trichotomies trying to clarify the distinctions between dynamic and immediate object and the immediate, dynamic, final, emotional, energetic and logical interpretants. It might be supposed that a discussion on immediate and dynamic objects leads to Peirce’s realism. Short ends the chapter emphasizing that Peirce’s conception of dynamic object is a contribution implying that it has not a merely conventional or subjective structure.

Chapter eight, **A Taxonomy of Signs**, describes a subject which will continue in the next chapter. According to Short, Peirce initiated his works on sign taxonomy in 1903, but never completed it. The chapter begins with the qualisign, sinsign and legisign, the three basic trichotomies. Next, the author introduces the dichotomy icon, index and symbol. Still, the chapter’s strongest point is the attempt to demystify arguments of scholars like Jakobson (1985) or Eco (1976), mainly concerning to the real meaning of genuine versus degenerate sign. A discussion on the trichotomy rheme, decisign and argument ends the chapter.

Chapter nine, **More Taxa**, argues the relations implied in each trichotomy in terms of categories. We can not avoid mentioning that it is a polemical chapter, mainly due to the difficulties pertaining to Peirce’s classifications, as well as the ones of the topics related to the assertion theory, besides authors like Austin and Goodman among others.

In chapter ten, **How Symbols Grow**, Short discusses the growth of symbols and Peirce’s conception of “meaning” in comparison to the term’s reference in analytical philosophy. The discussion includes the conditions for signical and accuracy abstraction, besides to the contribution of pragmatism to understand how symbols grow considering that a symbol’s meaning lies in its potentiality.

In the eleventh chapter, **Semeiosis and the Mental**, Short begins by stating that Peirce’s early semeiotic was a theory of mind: it identified thoughts as signs interpreting signs. The author then explores the richness of Peirce’s semeiotic by means of a counterpoint...
with the contemporary theories (including Dennet, Fodor, and Putnam). The subject of the self is also brought up for discussion in this chapter, in the context of concepts as consciousness, generality and self-control, establishing a link with the preceding chapters.

The twelfth and final chapter, The Structure of Objectivity, examines the structure of objectivity in opposition to foundationalism, for which Peirce developed his reality, inquiry and perception theories, grounded on the conception of truth and reality.

Peirce’s Theory of Signs is an important and necessary work for the student of Peirce, although rather difficult to recommend for beginners. The author demonstrates a sure grasp with polemical subjects and mainly boldness for bringing up Peirce’s semeiotic for a contemporary discussion.