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# D'alembert's Conceptions Of Language And Their Implications In His Aesthetics And Epistemology

Dennis Fredrick Essar

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D'ALEMBERT'S CONCEPTIONS OF LANGUAGE  
AND THEIR IMPLICATIONS IN HIS AESTHETICS AND EPISTEMOLOGY

by

Dennis Fredrick Essar

Department of French

Submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

Faculty of Graduate Studies

The University of Western Ontario

London, Canada

May 1973

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## ABSTRACT

The purpose of this thesis is to discover, through a study of d'Alembert's conceptions of language, certain unifying principles which can be ascertained in all the many domains of his intellectual life. Basic notions about the structure of thought and the communication of knowledge, which in turn play an important rôle in his broader philosophical outlook, particularly in his aesthetics and epistemology, can be deduced from his statements about language. Although these statements are found throughout his work, they have been drawn for the purposes of this study primarily from his Elémens de philosophie and from his contributions to the Encyclopédie.

Chapter I contains a brief evaluation of critical works on d'Alembert and on eighteenth-century linguistic science. It is shown that none of these works discusses d'Alembert's conceptions of language at any length, and none attempts to discover a basic unity in his work from the point of view of his linguistic thought.

Chapter II treats d'Alembert's conceptions of the word and the scientific principle. These are seen as static elements upon which more complex statements are built and from which particular cases are deduced.

Chapter III is concerned with d'Alembert's ideas about the structure of the sentence, about inversions in sentence order, and about the relation which he supposes to exist between the order of words in the sentence and the patterns of human thought.

In Chapter IV, d'Alembert's debt to empiricism and rationalism is discussed. Within his philosophical system, analysis and synthesis are seen as ways of handling linguistic elements in order to extend the range of human knowledge.

Chapter V deals with d'Alembert's aesthetics in general and with his statements on music, translation, and stylistics in particular. In all these areas he analyses the beautiful into universal and relative elements; free individual expression and respect for rules are both important in art.

In Chapter VI, the limits which d'Alembert sets to the domain of human inquiry are explored. His scepticism, utilitarianism, and relativism are all seen to be related to his conceptions of language.

Chapter VII summarizes the conclusions of the study. D'Alembert's basic philosophical attitude, which consists of a drive for simplicity and order, can be discerned by studying his conceptions of language. But this attitude is evident in other areas of his intellectual activity as well. Such an approach, which is in turn an embodiment of much of the spirit of the Enlightenment, is his most characteristic and productive intellectual legacy.

"Le sublime géomètre, le dieu,  
le prodigieux,  
l'aimable d'Alembert . . . ."

-- Madame Du Deffand

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## CHAPTER I

### INTRODUCTION

#### Presentation

Jean Lerond d'Alembert was not deeply concerned with language for its own sake. Although ideas about language are scattered throughout his works and very often form an integral part of his theoretical statements about many fields of inquiry, it can be claimed only with some qualification that they constitute a language theory. D'Alembert did not study language objectively and systematically, and nowhere in his writings, or in the works of his critics, are his ideas brought together and placed before the reader in an orderly fashion. It is my intention in this study to provide such a synthesis.

My purpose is not to formulate a system where there is none, nor to manufacture a coherent theory of language from d'Alembert's wide-ranging thought. What I hope to provide is a critical point of view based on d'Alembert's many statements about language, a way of looking at his philosophy as a whole, and his aesthetics and epistemology in particular.

D'Alembert did not have, then, an all-embracing theory of the nature, structure, and rôle of language as an assemblage of spoken or written signs by which men communicate their ideas. But we can glean from his writings an attitude towards language, a conception of what the word and the sentence represent and how they can be related to

our thought processes. D'Alembert was of course perfectly aware that language is the medium in which rational thought is carried on and by which we communicate our thoughts to others. He was deeply concerned about language as the common ground of all intellectual activity, both from an introspective point of view, considering the reasoning and learning processes within his own active mind, and from the point of view of examining the exchange of ideas among individuals. Because his conceptions of language are so closely tied up with his ideas about the nature of thought, learning, and communication, I have made it an essential part of my task to pursue his ideas about language as they penetrate into other realms. The purpose which I hope to achieve by studying d'Alembert's conceptions of language and their implications in other fields of inquiry is, once again, to present a point of view from which unifying principles may be perceived in the amazing versatility of his thought.

My first aim is to explore d'Alembert's ideas about what language is. To this end I shall discuss his conception of the word, how it originates, how its meaning is clarified and fixed, and in what manner it is subsequently used to define new words. I shall also consider d'Alembert's ideas about the nature of the sentence, or propositional statement; special attention will be paid to his concern for how sentences correspond to the thought processes they represent, and how they can be used to extend the range of man's knowledge.

D'Alembert imposes on other, less restricted questions those attitudes which his fundamental conceptions of language reveal. His vision of an orderly structure of knowledge, which is reflected in

the structure of language, will be considered from this point of view. I shall explore his aesthetic theory in order to understand how he analyses the beautiful and how in turn standards of beauty are applied to language. And finally I shall investigate how d'Alembert limits the expansion of the structure of knowledge, and how his conceptions of language determine these limitations.

Although d'Alembert is a figure of major importance in the European Enlightenment, he has not yet been made the object of an intensive study which would reveal and evaluate his contributions to many domains of eighteenth-century social and intellectual life. The wide variety of these contributions, the depth to which he penetrated in almost all disciplines he approached, and the vast implications of his work, especially for his contemporaries and immediate descendants, render such a task very difficult indeed. Perhaps only a group of specialists, each concentrating on d'Alembert's involvement in his own field, could accomplish it. In this study I am merely proposing that by studying d'Alembert's thought through his conceptions of language, his readers can appreciate better the unity of approach which lies behind his diversity.

D'Alembert<sup>1</sup> distinguished himself early in life as a mathematician. In 1743, at the age of twenty-five, he published what has remained his most important scientific work, the Traité de dynamique. About two years later, he first became involved in the Encyclopédie,

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<sup>1</sup>See Appendix A, "Chronology of d'Alembert," for the dates of principal events in his life and the titles of his more important works.



which at that time was of course in its earliest stages of development. Although he played less of a central rôle in that enterprise than Diderot, his influence during the earlier years was very great. D'Alembert was co-editor, along with Diderot, from 1747 to 1758; he wrote the Discours préliminaire, which has remained his best-known literary monument, and he composed, along with most of the articles on mathematical subjects, many influential and controversial articles of more general interest as well, such as "Collège,"<sup>2</sup> "Fondamental," "Gamme," and "Genève." In 1746 he began attending prominent Parisian literary salons; the favour he gained in these circles eventually paved the way for his entry into the French Academy in 1754. He remained a prominent member of that body, becoming its permanent secretary in 1772, until his death in 1783. Throughout his whole adult life he produced a steady stream of publications on a wide variety of subjects. Aside from accounts of his research in mathematics and physics, he wrote as well on musical theory and subjects of literary interest, such as poetics and translation. Although he was certainly not so ardent a polemicist as Voltaire, d'Alembert became engaged in many intellectual battles and was looked upon as a leader in the circle of the philosophes. Academician, salonniste, scientist, man of letters, Encyclopaedist, musical theorist, philosopher: such are the titles which may be claimed for him.

All of these classifications are general and overlap to some

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<sup>2</sup>Throughout this thesis I have made no attempt to modernize spelling and punctuation in my quotations from eighteenth-century works. Likewise I have kept the spellings of titles as they appear in the sources I have consulted.

extent. But a common element, his conceptions of language, may be singled out in all of them. By studying his notions of the word and the sentence, as I have outlined, I hope to show how he conceives the structure of language, and how he views both the process of the development of ideas in our own minds and the communication of these ideas to others. By demonstrating how these linguistic ideas are implicit in other concerns, such as aesthetics, I hope to arrive at a general statement of his theories of knowledge, communication, and learning, which applies to all his various activities. By considering d'Alembert's conceptions of language, I hope to present a unified picture of his contributions in many domains of inquiry. For this purpose I shall draw material from primarily the following areas of his interest: the communication of ideas (as revealed in the Encyclopédie), the structure that he perceives to exist in the body of all human knowledge, his general aesthetic theory, music, translation, and stylistics.

#### Studies on d'Alembert

None of the many books and articles about d'Alembert which have been prepared in recent years has concentrated to any extent on his conceptions of language. Studies of a more general nature, however, and studies which treat other specific areas of interest, have been well executed and have aided me immeasurably in my research. There are two book-length biographies of d'Alembert available. The first one, and to my mind one of the earliest critical works on d'Alembert which avoids entanglement in the remnants of eighteenth-

century controversies, is Joseph Bertrand's D'Alembert.<sup>3</sup> Most work done before this, and much that has been done since, persists in making of d'Alembert either a hateful antireligious fanatic or a saint of enlightenment and reason. Bertrand's book is more objective, and tries to present a more complete picture of the philosopher's diversity. Bertrand, who was a scientist himself, gives a much more useful summary of d'Alembert's scientific work than any other scholar before 1965. The only modern biography is Ronald Grimsley's Jean d'Alembert.<sup>4</sup> This indispensable study brings together a vast amount of information, both biographical and bibliographical, and presents it logically and objectively. However it is lacking in some respects. It makes no pretense of studying d'Alembert the scientist, and its bibliography, although extensive, contains confusing errors.

Some of the shortcomings which these biographies present can be remedied by consulting other studies. Maurice Muller's Essai sur la philosophie de Jean d'Alembert<sup>5</sup> is a good presentation of d'Alembert's general philosophical outlook. Paolo Casini's "D'Alembert epistemologo"<sup>6</sup> probes d'Alembert's theory of knowledge; its author shows great concern for what is in my opinion one of the basic motives behind d'Alembert's philosophy, namely the drive for conciseness and brevity. John N. Pappas has contrasted d'Alembert's fundamental

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<sup>3</sup>Paris: Hachette, 1889.

<sup>4</sup>Oxford: Clarendon Press, 1963.

<sup>5</sup>Paris: Payot, 1926.

<sup>6</sup>Rivista critica di storia della filosofia, 1964, fasc. I (Jan.-March), 28-53.

philosophical temperament with Diderot's in "L'esprit de finesse contre l'esprit de géométrie: un débat entre Diderot et Alembert."<sup>7</sup> Professor Pappas believes that many of the most significant works of the two philosophes written in the 1750's and 1760's make up a sort of dialogue.

Other articles emphasize the links which to my mind undoubtedly exist between d'Alembert's scientific philosophy and his more general philosophical method. Louis de Broglie<sup>8</sup> has outlined in very simple, accessible language d'Alembert's accomplishments in mathematics and science. He traces the implications of these discoveries down to the physics of our own day. Robert E. Butts<sup>9</sup> and J. Morton Briggs, Jr.<sup>10</sup> have stressed in their articles the debt which d'Alembert's scientific philosophy owes to the rationalism of the age. Such articles in my opinion perform the essential service of revealing that the analytical method d'Alembert used in science is present as well in other realms of his activity. This is, I believe, one of the most important of d'Alembert's intellectual characteristics and one which has been insufficiently treated in the other studies I have mentioned.

The student of literature may find more detailed information

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<sup>7</sup>Studies on Voltaire and the Eighteenth Century, LXXXIX (1972), 1229-53.

<sup>8</sup>"Un mathématicien, homme de lettres: d'Alembert," in L'Encyclopédie et le progrès des sciences et des techniques (Paris: Presses Universitaires de France, 1952), pp. 1-9.

<sup>9</sup>"Rationalism in Modern Science: d'Alembert and the 'esprit simpliste'," Bucknell Review, VIII (1958-59), 127-139.

<sup>10</sup>"D'Alembert: Philosophy and Mechanics in the Eighteenth Century," University of Colorado Studies. Series in History, III (1964), 38-56.

about d'Alembert's scientific achievements in the general histories of mechanics prepared by Ernst Mach<sup>11</sup> and René Dugas.<sup>12</sup> But invaluable works on this subject have been brilliantly written within the last fifteen years by Thomas L. Hankins. This scholar, a historian of science, has situated d'Alembert's scientific works in the context of eighteenth-century developments in the philosophy of nature and in mathematical technique. Three of Professor Hankins' contributions are especially useful in this respect. His "Eighteenth-Century Attempts to Resolve the Vis viva Controversy,"<sup>13</sup> the introduction to a reprint of the 1758 edition of d'Alembert's Traité de dynamique,<sup>14</sup> and Jean d'Alembert, Science and the Enlightenment,<sup>15</sup> taken together provide an admirable analysis of d'Alembert's involvements with mathematics and science, his relations with other mathematicians of his age, and his activities as a member of the French Academy of Sciences.

Other specific aspects of d'Alembert's intellectual activity have also been studied in some detail. His aesthetic philosophy, for example, has attracted some attention, but has not yet been

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<sup>11</sup>The Science of Mechanics, trans. Thomas J. McCormack (Chicago: Open Court, 1919).

<sup>12</sup>A History of Mechanics, trans. J.R. Maddox (London: Routledge and Kegan Paul, 1957).

<sup>13</sup>Isis, LVI (1965), 281-297.

<sup>14</sup>New York: Johnson Reprint Corporation, 1968.

<sup>15</sup>Oxford: Clarendon Press, 1970.

exhaustively studied. Robert Müller in his thesis entitled D'Alemberts Aesthetik<sup>16</sup> introduced the major themes of the subject, but his material is cloaked in heavy, abstract philosophical language which does not clarify the principles he perceives. A far more valuable study is John Pappas' "La Poétique de d'Alembert."<sup>17</sup>

While limited to a study of d'Alembert's poetic theory, this article gives a much clearer picture of d'Alembert's aesthetics than does Müller's thesis. Professor Pappas has included in his study an outline of the more general aesthetic principles which d'Alembert adopts and the reactions which d'Alembert's pronouncements on poetic theory elicited from his contemporaries. This article is a very valuable item and goes a long way towards filling a notable gap in d'Alembert studies. While Wladyslaw Folkierski's Entre le classicisme et le romantisme, étude sur l'esthétique et les esthéticiens du XVIII<sup>e</sup> siècle<sup>18</sup> pays very little attention to d'Alembert, it is a good source of background material, setting out in great detail the thought of major eighteenth-century aestheticians.

D'Alembert made important contributions to musical theory, especially to harmony, by reorganizing Rameau's system of harmonic analysis. These contributions are outlined very well by Alfred

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<sup>16</sup>Diss. Berlin, 1924. Abstract in Jahrbuch der Dissertationen der Philosophischen Fakultät der Friedrich-Wilhelms-Universität zu Berlin, 1923-24, 454-460.

<sup>17</sup>In Beiträge zur Französischen Aufklärung und zur Spanischen Literatur. Festgabe für Werner Krauss zum 70. Geburtstag, ed. Werner Bahner (Berlin: Akademie Verlag, 1971), 257-270.

<sup>18</sup>2nd ed. (Paris: Champion, 1969).

Richard Oliver in The Encyclopedists as Critics of Music.<sup>19</sup> In this study d'Alembert's involvements in major musical controversies are traced, and the content of his publications is indicated. Maurice Barthélemy, in his "Essai sur la position de d'Alembert dans la Querelle des Bouffons,"<sup>20</sup> and John Pappas in "D'Alembert et la querelle des bouffons d'après des documents inédits,"<sup>21</sup> have both brought forward evidence that d'Alembert was not in fact one of the supporters of Italian opera in the great polemic battle, as many of his contemporaries thought. The other major controversy which occupied d'Alembert, his long quarrel with Jean-Philippe Rameau, is traced by Erwin R. Jacobi in his edition of Rameau's Complete Theoretical Writings,<sup>22</sup> an edition which brings together most of the relevant documents written by both men.

Although d'Alembert's translations of Tacitus have not drawn the undivided attention of a critic, Jürgen von Stackelberg in his "Rousseau, d'Alembert et Diderot traducteurs de Tacite,"<sup>23</sup> and Raymond Trousson in "Jean-Jacques Rousseau traducteur de Tacite,"<sup>24</sup> both find d'Alembert's version inferior to those of Diderot and Rousseau. Neither, however, dwells upon d'Alembert's theories of translation.

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<sup>19</sup>2nd ed. (n.p.: AMS Press, 1966).

<sup>20</sup>Recherches sur la musique française classique, VI (1966), 159-175.

<sup>21</sup>Revue d'histoire littéraire de la France, LXV (1965), 479-484.

<sup>22</sup>5 vols. (n.p.: American Institute of Musicology, 1967-69).

<sup>23</sup>Studi francesi, II (1958), 395-407.

<sup>24</sup>Ibid., 1970, fasc. XLI, pp. 231-243.

Much insight into d'Alembert's character, interests, and literary theories can be gained by studying his career as a member of the French Academy. Many of his more important works on literary matters, which appeared later in such collections as the Mélanges de littérature, d'histoire, et de philosophie, were written to be read before this body. The tempestuous course of d'Alembert's academic career has been traced by Lucien Brunel in Les philosophes et l'Académie française au XVIII<sup>e</sup> siècle.<sup>25</sup> His history of the Academy, composed of eulogies of academicians who died between the years 1700 and 1771, a history in which parenthetical comment abounds, has received special attention in two unpublished dissertations.<sup>26</sup> Morris Wachs' thesis provides an especially good summary of d'Alembert's literary theories as they are revealed in the Eloges.

Forthcoming studies of d'Alembert promise to fill many of the lacunae which a curious reader finds today. Professor Pappas' biography of d'Alembert will no doubt contain much more of the carefully researched material and enlightened comment which this scholar's articles on d'Alembert unfailingly provide. Marta Rezler's edition of d'Alembert's collected correspondence is badly needed.<sup>27</sup> And

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<sup>25</sup>Paris, 1884 (Reprint, Genève: Slatkine, 1967).

<sup>26</sup>Morris Wachs, "A Study of d'Alembert's Histoire des membres de l'Académie française," University of Wisconsin, 1958. And Hope Haskell Hayton, "A Study of the Origin, Content, and Literary Significance of the Eloges Académiques of Jean Le Rond d'Alembert," University of Southern California, 1959.

<sup>27</sup>These projects have been brought to the attention of students of d'Alembert by, among others, Paolo Casini in "Il problema d'Alembert," Rivista di filosofia, LXI (1970), 28.



Professor Grimsley has promised an article on d'Alembert's aesthetics.<sup>28</sup>

### Studies on Eighteenth-Century Linguistic Science

The history of linguistic science during the Enlightenment is necessarily an area of major concern in this thesis. D'Alembert borrows much material from his contemporaries in this domain, and in order to appreciate better the way he used it, one must be acquainted with ideas and currents to which he was exposed. Linguistic science during the Enlightenment has attracted much attention of late, partly because of a desire to know better the roots of modern linguistic thought, and also because it provides an excellent approach for studying Enlightenment philosophy as a whole.

Although several new scholarly works on this subject have recently been published, none of them in my opinion probes deeply enough into the problem of the state of linguistic science in the eighteenth century. No one has attempted the very large-scale study which this subject demands. The latest book, Pierre Julliard's Philosophies of Language in Eighteenth-Century France,<sup>29</sup> deals only with a selection of the many theorists who were flourishing and is by no means complete. Guy Harnois's Les théories du langage en France de 1660 à 1821<sup>30</sup> is from the point of view of overall conception a

<sup>28</sup>This article was announced for the Third International Congress on the Enlightenment, held at Nancy, France, in July, 1971. It was however not presented.

<sup>29</sup>The Hague, Paris: Mouton, 1970.

<sup>30</sup>Etudes françaises, XVII (1929), 1-95.

superior work. Harnois has chosen the years 1660 and 1821 to mark the limits of the period in which universal grammar was seriously considered the most important hypothesis in linguistic science. He then builds his study around this opinion. Paul Kuehner's short thesis Theories on the Origin and Formation of Language in the Eighteenth Century in France<sup>31</sup> again does not accord this subject, which concerned all thinkers in the eighteenth century, the attention it deserves. The work is very short, and its basic plan is not original.

Several good sketches of major events in linguistic science in the eighteenth century are contained in longer works on the history of linguistics, or in studies of related topics. The best of these is Louis Kukenheim's Esquisse historique de la linguistique française et de ses rapports avec la linguistique générale.<sup>32</sup> Although Professor Kukenheim's esquisse is necessarily limited, it is very useful because it provides a wealth of reference detail and a structure which makes the material easily accessible. Other sketches are found in Isabel F. Knight's The Geometric Spirit: The Abbé de Condillac and the French Enlightenment,<sup>33</sup> and Herbert Josephs' Diderot's Dialogue of Language and Gesture: Le Neveu de Rameau.<sup>34</sup> Extensive reference to eighteenth-century linguistic theory, concerning its debt to the rationalist theorists of the seventeenth

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<sup>31</sup>University of Pennsylvania (Philadelphia, 1944).

<sup>32</sup>Leyde: Universitaire Pers, 1966.

<sup>33</sup>New Haven, London: Yale University Press, 1968.

<sup>34</sup>Columbus: Ohio State University Press, 1969.

century, is contained in Noam Chomsky's Cartesian Linguistics: A Chapter in the History of Rationalist Thought.<sup>35</sup> Michel Foucault, as he demonstrates in Les mots et les choses,<sup>36</sup> has conducted extensive research in the subject. In "Some aspects of 'nature' and 'language' in the French Enlightenment,"<sup>37</sup> Ronald Grimsley has investigated the approach of some Enlightenment thinkers to these ideas. Ferdinand Brunot's Histoire de la langue française des origines à nos jours<sup>38</sup> outlines in a detailed manner many developments in linguistic science throughout the eighteenth century. This rich source reference attempts no overall synthesis, however. The treatment which many aspects of language study received in the Encyclopédie has been well documented in René Hubert's excellent Les sciences sociales dans l'Encyclopédie.<sup>39</sup>

Studies of varying length and quality have been devoted to the language theory of some individual eighteenth-century authors. Two celebrated grammarians, Brosses and Du Marsais, have been the subjects of well-written monographs. Hippolyte Sautebin, in his Un linguiste français du XVIII<sup>e</sup> siècle: le président de Brosses,<sup>40</sup> has shed light on the involvements of this theorist with the philosophes, and especially with Voltaire. Miss Gunvor Sahlin's César

<sup>35</sup>New York, London: Harper & Row, 1966.

<sup>36</sup>Paris: Gallimard, 1966.

<sup>37</sup>Studies on Voltaire and the Eighteenth Century, LVI (1967), 659-677.

<sup>38</sup>2nd ed., 13 vols. (Paris: Armand Colin, 1966-72).

<sup>39</sup>Paris: Félix Alcan, 1923.

<sup>40</sup>Berne, 1899 (Reprint, Genève: Slatkine, 1971).

Chesneau Du Marsais et son rôle dans l'évolution de la Grammaire générale<sup>41</sup> presents both a very competent history of the idea of universal grammar and a detailed exposition and analysis of Du Marsais's speculations.

Much useful information about other theorists can be obtained from studies of article length. In "Mandeville on the origin of language,"<sup>42</sup> F.B. Kaye discusses this thinker's influence on eighteenth-century French opinion about the origin of language, which was noteworthy especially in Condillac's case. H.J. Hunt, in his article "Logic and Linguistics: Diderot as Grammairien-Philosophe,"<sup>43</sup> was the first critic to attempt a serious evaluation of Diderot's notions about language. Jacques Proust has also investigated this subject in "Diderot et les problèmes du langage."<sup>44</sup> Rousseau has of course attracted comment from scholars interested in his language theory. Edouard Claparède, in "Rousseau et l'origine du langage,"<sup>45</sup> stresses the modernity of some of Rousseau's ideas, contrasting them with those of the great Danish linguist Otto Jespersen. And Ronald Grimsley traces the evolution of Rousseau's theories on language origin in "Jean-Jacques Rousseau and the Problem of 'Original'

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<sup>41</sup> Paris: Presses Universitaires de France, 1928.

<sup>42</sup> Modern Language Notes, XXXIX (1924), 136-142.

<sup>43</sup> Modern Language Review, XXXIII (1938), 215-233.

<sup>44</sup> Romanische Forschungen, LXXIX (1967), 1-27.

<sup>45</sup> Annales de la Société Jean-Jacques Rousseau, XXIV (1935), 95-119.

Language."<sup>46</sup>

All the studies which I have mentioned, both those on d'Alembert and those on eighteenth-century linguistic science, contain information which has been of very great value to me during the preparation of this dissertation. Material which either casts light on d'Alembert himself, or elucidates in some way his intellectual background, has been drawn from all of them. However, as I hope my comments have made clear, none of these critical works has concerned itself with analysing d'Alembert's thought in the many domains where he penetrates, from the point of view of his conceptions of language. My aim in this thesis is to present to the reader d'Alembert's ideas on language, and to show how they are implicit in other areas of speculation, especially aesthetics and epistemology.

#### Outline of the Dissertation

The body of my study is divided into five sections, composed of Chapters II to VI. In Chapter II I shall consider the word, or static element of language, as seen by d'Alembert. This notion will be compared to that of the principle, which like the word is a static element from which particular details can be deduced. The question of the origin of language will also receive attention in this chapter.

Chapter III will be concerned with d'Alembert's conception of the sentence, or combination of ideas. Of special importance in this

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<sup>46</sup>In The Age of Enlightenment: Studies Presented to Theodore Besterman, eds. W.H. Barber et al. (Edinburgh, London: Oliver and Boyd, 1967), pp. 275-286.

section will be the problem of word order in the sentence.

In Chapter IV I shall discuss how empiricist and rationalist methods coexist in d'Alembert's philosophy, and how they are brought together in his idea of a structure of knowledge.

In Chapter V d'Alembert's aesthetic theory will be investigated. Music, translation and stylistics, the three art forms in which d'Alembert showed the most interest, will each be considered in detail.

And in Chapter VI I shall study the limits which d'Alembert imposed on all fields of inquiry. These limits, dictated by d'Alembert's scepticism, utilitarianism, and relativism, will in turn be related to his theoretical statements about language.

D'Alembert's conceptions of language and their implications in other areas of concern will thus be brought together in my study for the purpose of showing how his language theory can be seen as a common ground for much of his intensely varied intellectual activity.

CHAPTER II  
THEORIES OF LANGUAGE AND THE WORD

Introduction

Eighteenth-century linguistic theory, moulded to a great extent by the rationalism of the preceding century, is based primarily on the principle of deduction. Although empiricist philosophers differed from the Cartesians on the source of some of our most elementary ideas, both groups agreed that the word is the sign of an idea and deduced all their linguistic theory from this beginning. As well, in developing their theories both groups respected conventional procedures of logic. Language theory for the empiricists as well as the rationalists had to proceed with due deliberation from a clear conception of the nature of linguistic elements.

The point of departure for my study of d'Alembert's conceptions of language is thus indicated. Along with most other eighteenth-century philosophers,<sup>1</sup> he was interested in the nature of mankind's first linguistic efforts; he wanted to know when and under what circumstances men began to speak. But he was not curious about these matters for their own sake. Rather he sought to provide a picture of the origins of language which would support and complement his conceptions of present-day speech and the purpose it was to serve. Since,

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<sup>1</sup>I shall use the term "philosophers" to denote all thinkers in the eighteenth century, whether or not they belonged to the more restricted group of philosophes. The latter term is somewhat misleading in that it connotes a certain party solidarity; in reality the bande was of course very heterogeneous.

according to him, sure knowledge can always be deduced from the simplest, most universal principles, language must then be based on the principle of the word taken as a static signifying entity which gives tangible reality to an idea in the mind.

In this chapter, therefore, I shall consider the linguistic element in its simplest context: its origin, its bases, its value as a cornerstone in the edifice of knowledge. The word, which represents an expressible idea in its simplest state, can however be put to more complex uses. The combining of these elements, which is properly the domain of grammar, and the task of artistically executing these combinations, will be considered in later chapters.

#### Nominalism

Michel Foucault, in Les mots et les choses, has set out a division of the historical continuum based on the evolution of economic science, of biological classification, and of fundamental linguistic conceptions. His "classical age," which extends from 1600 to 1800, is an epoch in linguistic studies of a dualist theory of representation. The word, which is the sign, has a separate existence from the mental conception of the thing signified. This representation does not contain the third element which distinguishes, according to him, a theory characteristic of the Renaissance: the note of resemblance between the sign and the thing signified. The classical age chooses to adopt a theory of arbitrary representation, rather than one which joins to the mental image a sign which is in a sense dictated or predetermined. This theory, which eliminates from the sign any effective reality, is essentially nominalist in character.



This fundamental vision is by no means new. The Renaissance, under the aegis of its idealistic preoccupations, chose a twenty-centuries-old position, one which existed throughout this time alongside Foucault's so-called "classical" one. The description given in a recent study of this conflict as it existed in the Middle Ages applies also to succeeding centuries:

Pour les réalistes, issus de Platon et saint Augustin, les mots sont des manifestations concrètes des Idées, il y a un rapport intrinsèque entre l'idée et le mot. Pour les nominalistes, qui procèdent d'Aristote (et de saint Thomas plus tard), les idées n'ont de réalité que dans l'esprit des hommes, les mots ne sont pas les choses, ni les germes des choses, mais ne sont que des noms; et les mots ne sont tels que par convention . . . .<sup>2</sup>

The evolution pointed out by Foucault is thus, as is any evolution, the coming to the fore of pre-existing elements which do not necessarily demand the annihilation of formerly dominant ones.

Most eighteenth-century French philosophers would find nothing objectionable in that essential part of their language theory which Foucault distinguishes as "classical." According to them, if there is a presumed link between sign and object, this link derives from our conception of the word, rather than from some concrete connection which is dictated by the nature of the object itself. Classical duality admits only the conventional sign, the sign which, by our habit, imagination, or reasoned judgment, comes to take on a signifying rôle:

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<sup>2</sup>Georges Mounin, Histoire de la linguistique des origines au XX<sup>e</sup> siècle (Paris: Presses Universitaires de France, 1967), p. 114.

Mais il y a une condition pour que le signe soit bien cette pure dualité. En son être simple d'idée, ou d'image, ou de perception, associée ou substituée à une autre, l'élément signifiant n'est pas signe. Il ne le devient qu'à la condition de manifester, en outre, le rapport qui le lie à ce qu'il signifie. Il faut qu'il représente, mais que cette représentation, à son tour, se trouve représentée en lui.<sup>3</sup>

D'Alembert's philosophy, which at the same time partakes of and in a sense dictates that of his century, contains the idea of the arbitrary instinctive cry of early man, a cry made necessary by the demands of his social state. But for d'Alembert there is no intrinsic link between the word and the object. The old conflict between Plato and Aristotle breaks out again, and d'Alembert declares himself, at least in this instance, on the latter's side.

The empiricist current in philosophy was popularized in eighteenth-century France especially by Pierre Coste's translation of Locke's Essay Concerning Human Understanding, was extended by Condillac, and was adopted by d'Alembert in the Discours préliminaire; it imposed its own conception of word origins. This conception, although opposed by other theories, was remarkably popular. Words are born arbitrarily, in a vacuum as it were, and do not depend for their form on some quality of the object they signify. We shall now follow the history of this idea, contrasting it with others of the period, and searching thus for the epistemological basis of the very concept of the word.

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<sup>3</sup>Michel Foucault, Les mots et les choses, p. 78.

### The Origin of Language

Locke's Essay furnished the French philosophes with a Bible of sensationalist psychology. Here are found the principal theses of a centuries-old sensationalism, whose history goes back to Aristotle and before, through the empiricist theories of the Royal Society's virtuosi (Newton and Boyle, notably) in England,<sup>4</sup> and Thomist philosophy. Aquinas postulates that all our ideas have their origin in sense experience; Descartes revolts against this idea, while Locke and his fellow empiricists hold it up as a guiding principle.

Knowledge, an abstract phenomenon, originates from two operations of the mind:

In time the mind comes to reflect on its own operations about the ideas got by sensation, and thereby stores itself with a new set of ideas, which I call ideas of reflection. These are the impressions that are made on our senses by outward objects that are extrinsic to the mind; and its own operations, proceeding from powers intrinsic and proper to itself, which, when reflected on by itself, become also objects of its contemplation--are, as I have said, the original of all knowledge. Thus the first capacity of human intellect is, --that the mind is fitted to receive the impressions made on it; either through the senses by outward objects, or by its own operations when it reflects on them. This is the first step a man makes towards the discovery of anything, and the groundwork whereon to build all those notions which ever he shall have naturally in this world.<sup>5</sup>

To a great extent Enlightenment thinkers accepted this theory as the necessary basis for psychological speculation, including that which

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<sup>4</sup>Maurice Cranston, John Locke, a Biography (London, New York, Toronto: Longmans, Green and Co., 1957), p. 265.

<sup>5</sup>Locke, An Essay Concerning Human Understanding (Bk. II, Chap. I, par. 24), ed. Alexander Campbell Fraser, 2nd ed. (New York: Dover, 1959), I, 141-142.

tries to explain the origin of language. Locke described for the eighteenth century the origin of our most elementary ideas, those ideas which, being the simplest and most primitive, furnish the matter for more complex thought. His conception of the word is thus linked to that of the simple idea which the word reflects.

For Locke, words are born in the mind as arbitrary representations of some idea which is to be communicated. The arbitrary nature of the sign is the first essential element of his theory of language origins.<sup>6</sup> The second is the aim of language, which is communication, or the exchange of ideas among like beings.<sup>7</sup> This second element presupposes man's social existence, or at least some contact among individuals, and is an aspect which will be notably amplified in the Discours préliminaire.

A word does not really exist until it possesses a fixed and universal meaning, at least within a limited group. This last stage in the maturation of the word is achieved by common accord:

Words become general by being made the signs of general ideas: and ideas become general, by separating from them the circumstances of time and place, and any other ideas that may determine them to this or that particular existence.<sup>8</sup>

A fixed meaning, recognized by all speakers, is arrived at by a process of abstraction and simplification, a task which finally supplies a sound basis for knowledge, and especially for its exchange. D'Alem-

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<sup>6</sup>Ibid. (Bk. III, Chap. II, par. 1), II, 8-9.

<sup>7</sup>Ibid. (Bk. III, Chap. II, pars. 2 and 3), II, 9-10.

<sup>8</sup>Ibid. (Bk. III, Chap. III, par. 6), II, 16-17.

bert's conception of the word, as we shall see throughout the rest of this chapter, is, with the addition of a more specific procedure for assigning a strict meaning, similar to Locke's: the word is the arbitrary sign of a simple or at least definable idea, and everyone who uses it or hears it must understand its meaning.

Etienne Bonnot, abbé de Condillac, of the philosophes perhaps the most like a philosopher (in a more modern sense), had a remarkable influence on his contemporaries, both by his works and by his conversation. His Essai sur l'origine des connaissances humaines, published in 1746, the Traité des systèmes, of 1749, and the Traité des sensations, of 1754, supplied his generation with a popularization, an examination, and an amplification of Locke's sensationalism. The personal nuance which Condillac imposed on the master's theories is reproduced in many works of the 1750's, including the Discours préliminaire. Professor Schwab suggests that Condillac may have even directly aided d'Alembert during the composition of the great preface.<sup>9</sup> One disciple of Locke among many, Condillac set out from premises identical to those which most of his readers would accept, and he used a method of presentation which was well-known. Although a faithful disciple of Locke (his Essai reproduces in detail the fundamental notions of psychological analysis given in Locke's Essay<sup>10</sup>), he realized the value of the Cartesian method, and reinforced

<sup>9</sup>Richard N. Schwab, ed. and trans., Preliminary Discourse to the Encyclopedia of Diderot, by d'Alembert (Indianapolis, New York: Bobbs-Merrill, 1963), p. xxix.

<sup>10</sup>Georges Le Roy, La psychologie de Condillac (Paris: Boivin, 1937), p. 35.

in his contemporaries the idea of the necessity of certain rationalist procedures, especially in scientific matters, but by extension in letters and the arts as well.<sup>11</sup>

In his early works, Condillac supports in a general way Locke's theory of language origin, in that he presupposes a society, even of the most primitive sort, of intelligent, reasoning men, who decide in a rational, deliberate manner to establish a system of communication.<sup>12</sup> As we shall soon see, d'Alembert accepted such a theory; we can read his version of it in the Discours préliminaire and in the Encyclopédie article "Caractere." This theory, while less realistic than others of the same period, nevertheless represents in a clear and revealing manner the spirit of optimism so common at that time. For Condillac as for d'Alembert, society, and language which assures the survival of society, are created by the determined action of reasoning beings who possess the power of raising themselves from an animal state up to one in which more complicated intellectual operations such as abstraction are possible. According to Condillac a word exists thanks to an agreement among equals. As in Locke's theory man imposes on each word a meaning recognized by all members of the social group.

Even so short an examination of Locke's and Condillac's theory reveals characteristics which we shall recognize in d'Alembert's work. Like them, d'Alembert is deeply concerned with the ordering of knowledge. Since language for all three is the tool with which knowledge

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<sup>11</sup>Schwab, p. xxxiii.

<sup>12</sup>René Hubert, Les sciences sociales dans l'Encyclopédie, p. 330.

is developed and exchanged, their descriptions of the nature of language, and hence its origin, must agree with this conception. What is important is how ideas are fixed and attached to signs, and how the signs are handled to produce new ideas. D'Alembert set down his ideas concerning the nature and rôle of words especially in the Encyclopédie, in the Elémens de philosophie (1759), and in the "Eclaircissemens" added to the latter work (1767). It is in these works that we can seek out what originality his ideas on these matters do contain.

The Discours préliminaire to the Encyclopédie, published in 1751 in the first volume, contains the first properly "philosophical" pronouncements d'Alembert offered to the public, the first to be widely circulated, and the first to elicit widespread comment. It is common knowledge that the Discours has two aims: to explain the arrangement of material in the dictionary, and to present "l'ordre & l'enchaînement des connoissances humaines."<sup>13</sup> The accomplishment of this second aim makes it necessary for d'Alembert to consider the matter of the origin of knowledge and its communication. His exposition of the sources of our knowledge reminds us of Locke:

On peut diviser toutes nos connoissances en directes & en réfléchies. Les directes sont celles que nous recevons immédiatement sans aucune opération de notre volonté; qui trouvant ouvertes, si on peut parler ainsi, toutes les portes de notre ame, y entrent sans résistance & sans effort. Les connoissances réfléchies sont celles que l'esprit acquiert en opérant sur les directes, en les unissant & en les combinant.<sup>14</sup>

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<sup>13</sup>Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers, par une société de gens de lettres (Paris: Briasson, David, Le Breton, Durand; 1751-80 [Reprint, Stuttgart: Friedrich Frommann, 1966-67]), I, i. Cited in later notes as Encyc.

<sup>14</sup>Ibid., pp. i-ii.

All our knowledge, even the most abstract, comes from these simple beginnings:

Il est donc évident que les notions purement intellectuelles du vice & de la vertu, le principe & la nécessité des lois, la spiritualité de l'ame, l'existence de Dieu & nos devoirs envers lui, en un mot les vérités dont nous avons le besoin le plus prompt & le plus indispensable, sont le fruit des premières idées réfléchies que nos sensations occasionnent.<sup>15</sup>

The close resemblance of d'Alembert's presentation to Locke's is noteworthy. But d'Alembert seems more concerned with establishing just where our complex ideas originate, so that they may at some future time be broken down and traced backwards to those first, verifiable elements.

Sensation teaches us two groups of facts: first, we learn of our own existence, and second, we learn about things outside ourselves, whose existence we are led to assume by "une espece d'instinct, plus sûr que la raison même."<sup>16</sup> (Instinct is one argument d'Alembert always puts forward against pure idealism.) We perceive our fellows, and we are encouraged to associate ourselves with them for our mutual preservation; language is a necessary tool for communication within this group:

La nécessité de garantir notre propre corps de la douleur & de la destruction, nous fait examiner parmi les objets extérieurs, ceux qui peuvent nous être utiles ou nuisibles, pour rechercher les uns & fuir les autres. Mais à peine commençons-nous à parcourir ces objets, que nous découvrons parmi eux un grand nombre d'êtres qui nous paroissent entièrement semblables à nous, c'est-à-dire dont la forme est toute

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<sup>15</sup>Ibid., p. iv.

<sup>16</sup>Ibid., p. ii.



pareille à la nôtre, & qui, autant que nous en pouvons juger au premier coup d'oeil, semblent avoir les mêmes perceptions que nous: tout nous porte donc à penser qu'ils ont aussi les mêmes besoins que nous éprouvons, & par conséquent le même intérêt de les satisfaire; d'où il résulte que nous devons trouver beaucoup d'avantage à nous unir avec eux pour démêler dans la nature ce qui peut nous conserver ou nous nuire. La communication des idées est le principe & le soutien de cette union, & demande nécessairement l'invention des signes; telle est l'origine de la formation des sociétés avec laquelle les langues ont dû naître.<sup>17</sup>

In this passage d'Alembert is stressing the social origin of language. Ideas develop according to the demands of a long historical development; language and society are both born to fulfill certain needs which human beings experience.

Like forming a word, perfecting it is an intellectual task. According to d'Alembert, primitive man associated his idea with a word, which is the symbol that he has "le plus aisement sous la main."<sup>18</sup> Language so constituted was "une collection assez bizarre de signes de toute espece,"<sup>19</sup> signs which indicated only the most familiar objects. But, reason allows man to formulate general terms from this plethora of proper names; attached to these general terms are universal meanings which before designated only one specific object: "Ainsi, par des opérations & des abstractions successives de notre esprit, nous dépouillons la matiere de presque toutes ses propriétés sensibles, pour n'envisager en quelque maniere que son Phantôme . . . ."<sup>20</sup> The

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<sup>17</sup>Ibid., p. iii.

<sup>18</sup>Ibid., p. x.

<sup>19</sup>Ibid.

<sup>20</sup>Ibid., p. v.

invention of visual signs for objects, that is to say the first writing,<sup>21</sup> took place at the same time, according to d'Alembert. And the visual signs shared with audible signs, or words, the same purpose, that is, communicating ideas. Hieroglyphic writing does not represent a word, but rather the idea of which the word is itself only another symbol:

Il y a bien de l'apparence que les figures même de ces êtres [représentés], tracées grossièrement sur quelques corps, furent les premiers caracteres par lesquels on les désigna, & la premiere espece d'écriture, qui a du naître à-peu-près dans le même tems que les langues.<sup>22</sup>

Between the early volumes of the Encyclopédie and the Elémens de philosophie (1759) we note less an evolution in d'Alembert's thought than a change in his fundamental preoccupations. In the Encyclopédie his linguistic ideas are revealed in the course of the examination of different stages of human progress. In the Elémens, on the other hand, he is trying to analyse the structure of knowledge in order to put it on a firmer basis, and thus he is more concerned with truth and how to recognize it than with history for its own sake. For example, he admits that the words we choose determine to a great extent the validity of our statements: "Le choix des mots par lesquels nous exprimons nos pensées, a beaucoup d'influence sur la vérité ou sur la fausseté des jugemens que nous portons, ou que nous faisons porter

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<sup>21</sup>D'Alembert's ideas here closely parallel those of William Warburton, Bishop of Gloucester, whose Divine Legation of Moses Demonstrated first appeared in 1737. The pertinent part of this work in this matter was published in French translation in 1744, under the title Essai sur les hiéroglyphes des Egyptiens.

<sup>22</sup>"Caractere," Encyc., II, 645.

aux autres."<sup>23</sup> In the Elémens the word is taken primarily as a sign which embodies all the elements of a clear definition; as such, the word may be used to develop further knowledge.

D'Alembert gives a list of the categories of words which we have already seen, and some new ones as well:

Le grammairien philosophe traitera donc des différentes espèces de mots; de ceux qui expriment des individus; de ceux qui ne désignent que des êtres abstraits; de ceux qui marquent les différentes manières d'être, les différentes vues sous lesquelles l'esprit peut envisager un objet; de ceux qui expriment des idées simples, et qui par conséquent n'étant point susceptibles de définition, peuvent être regardés comme les racines philosophiques des langues, c'est-à-dire comme les termes primitifs et fondamentaux qui servent à expliquer tous les autres; de la manière de reconnaître ces mots, et ceux qui renferment des idées composées; du sens propre des mots et de leur sens figuré ou métaphorique; de la nécessité de bien distinguer ces différens sens,<sup>24</sup> pour éviter les erreurs où l'on s'expose quand on les confond . . . .

Showing the roots and branches of the family tree of each word, branches which sometimes extend a considerable distance from the root, is a task which has as its aim the positioning of the word in the long series of its predecessors and descendants. The figurative meaning of any word is not to be used unless this meaning is recognized and the word is linked to its primitive origin. The process of searching out the simple idea, essential in all the realms of d'Alembert's philosophy, is the central message of the Elémens. The aim of the Encyclopédie is to set out, or at least to outline, the structure of knowledge, but the aim of the Elémens is to provide the basis for all inquiry.

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<sup>23</sup>Oeuvres de d'Alembert (Paris: Belin, 1821-22 [Reprint, Genève: Slatkine, 1967]), I, 236. Cited in later notes as Oeuvres.

<sup>24</sup>Ibid.

Synonyms, in this slow and painful exploration of the lexicon, pose special problems. If they are identical in meaning, then one is superfluous. But if their meanings differ, by however little, they nevertheless share a more general, common element which can be revealed through analysis:

. . . ce qui constitue deux ou plusieurs mots synonymes, c'est d'abord un sens général qui est commun à ces mots; et ce qui fait ensuite que ces mots ne sont pas toujours synonymes, ce sont des nuances souvent délicates et quelquefois presque imperceptibles, qui modifient ce sens primitif et général . . . .<sup>25</sup>

Thus, without having to step outside the limits of the body of all the words of a language, without considering in any way the combination of these words in a propositional statement, one sets oneself the task of determining each link in an unbroken chain of linguistic elements, a chain which extends from our most primitive notions right up to our most complex ideas.

The same approach may be used to trace the meanings of a word which is used in a more and more figurative way. In the "Eclaircissements" to the Elémens, published in a fifth volume of the Mélanges de littérature, d'histoire, et de philosophie in 1767, d'Alembert speaks of this matter in some detail. Each word has its basic meaning, a "signification originaire et primitive."<sup>26</sup> The figurative meaning of a word is applied to an object which really has no right to it. And between the two is a meaning called "par extension," in which the word is applied to another of the five senses than the one to which it was

<sup>25</sup>Ibid., p. 237.

<sup>26</sup>Ibid., p. 238.

originally destined. D'Alembert uses the word "éclat" as an example. "Eclat de la lumière" is the original meaning; "éclat du son" is the extended meaning; and "éclat de la vertu" is the figurative meaning.<sup>27</sup> The original meaning is thus the point of departure for any other meaning, be it figurative or just extended. In its most extravagant diversity, the word always retains these links. D'Alembert even proposes a dictionary ("ouvrage très-philosophique"<sup>28</sup>) to show such a succession of nuances. Since it is the philosopher's concern to fix the nature of the tools of knowledge, tools of which the first and most important is the meaning and applicability of a single word, such a dictionary is worthy of his attention.

D'Alembert's concern with the problems of linguistic origins is universally shared by the thinkers of his century. They all indulge in what Mrs. Knight has called "genetic analysis,"<sup>29</sup> a seeking after the origins of some present-day phenomenon in order to better explain its nature and raison d'être. The obvious weakness, as I see it, of this kind of hypothesis is that the nature of original language is determined by the researcher's conception of the speech he hears around him, and of the psychology of other living beings. This observation permits us to understand the diversity of opinion which marks eighteenth-century speculations in the matter, and which continues to exist up to the present day.

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<sup>27</sup> Ibid.

<sup>28</sup> Ibid., p. 240.

<sup>29</sup> Isabel F. Knight, The Geometric Spirit: The Abbé de Condillac and the French Enlightenment, p. 102.

There are two poles of opinion in eighteenth-century theories on the origin of language which were juxtaposed very early in Western thought. Plato, in the Cratylus, wonders whether words are arbitrary, imposed, conventional signs, or whether they are determined by the nature of the object.<sup>30</sup> Throughout the early history of linguistics (that is, according to the division set out by most historians of that discipline, up to the year 1800) much concern with the scientific or pseudo-scientific investigation of language origins is based on the adherence to or reaction against one of these positions, or the effort to combine the two of them. In addition to these, and sometimes grafted to one or both of them, is the belief that language is a gift from God, and was bestowed on man at some stage of his development.

But in this diversity of opinion there is a universal element, a universal belief that is shared by all those who, in the eighteenth century, venture to contribute to the controversy. That belief is that language, a uniquely human phenomenon, is the product of a universal reasoning faculty shared by all men and absent in all animals. That language reflects the logical functions of the mind is not disputed. (We shall consider this belief in more detail in the next chapter.) What researchers are concerned with is the origin of vocal signs, and how they came to take on the form they did.

In Paul Kuehner's Theories on the Origin and Formation of Language in the Eighteenth Century in France, the too short but only available monograph devoted to this subject, the three groups of

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<sup>30</sup> Herbert Josephs, Diderot's Dialogue of Language and Gesture: Le Neveu de Rameau, p. 207.

theories are distinguished as follows:

1. Language a divine gift to mankind, which we designate as the traditional theory. Its defenders purport to find in the Bible sufficient evidence for their belief that God gave to man in the garden of Eden the talents of intellect and speech.

2. Language an invention of man endowed with reason, or the conventional theory. According to its propounders this innate reason made of man a gregarious being and induced him to give vocal expression to ideas.

3. Language originating in a spontaneous response to sensations without necessary intervention of reason, or the sensationalist theory. Those who offer it as a solution to the problem assume that primitive man was void of knowledge and merely uttered meaningless cries whenever he felt exceptional pain, joy, fear, etc. Consequently this first speech was crude and incomplete, and only by a slow evolution grew into a useful means of common language.<sup>31</sup>

René Hubert has set out the same division, although in less detail.<sup>32</sup>

And in the Encyclopédie itself, in the article "Langue"<sup>33</sup> Beauzée<sup>34</sup>

airs the three positions; he supports the theory of divine origin and opposes the other two.

Those thinkers composing Kuehner's first group are obviously of a conservative orientation, supporting either from personal conviction or from prudence the official view of Church and State. Beauzée's articles "Langue" and "Nom" present this view, as well as a

<sup>31</sup>P. viii.

<sup>32</sup>Les sciences sociales dans l'Encyclopédie, pp. 330-331.

<sup>33</sup>Encyc., IX, 249-266.

<sup>34</sup>After the death of Du Marsais in 1756, Beauzée and Douchet, professors at the Ecole Royale Militaire, took over the task of writing the articles on language for the Encyclopédie. However the sign "E.R.M." which they used in volume VII came to be replaced by "B.E.R.M." and "E.R.M.B." in succeeding ones. The "B." in this abbreviation, plus the fact that there are statements in the first person singular in these articles, have led me to believe that Beauzée was the sole author of the later articles (such as "Langue").

parallel theory which holds that Hebrew was the first language spoken by man and the one from which all other languages are descended.<sup>35</sup> But as we shall see later, Beauzée's holding such a traditionalist view may have been a pose.

The second group, proponents of Locke's conventional theory, is of more interest to us: "The defenders of the conventional theory find the basic unity of speech in its conformity to reason, and represent any and all languages as a deliberate invention of man."<sup>36</sup> As I have said before, all thinkers of any consequence in the eighteenth century in France accept the identity of speech patterns and human reason, but only a restricted group suggests that the words we use are a "deliberate invention," that the sign is attached to an idea by a process of rational decision and not merely by habit.

In his early work, as we have seen (see p. 25), Condillac follows Locke in supporting the opinion that we attach meanings to signs by rational decision:

Concluons que, pour avoir des idées sur lesquelles nous puissions réfléchir, nous avons besoin d'imaginer des signes qui servent de lien aux différentes collections d'idées simples, et que nos notions ne sont exactes qu'autant que nous avons inventé avec ordre les signes qui doivent les fixer.<sup>37</sup>

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<sup>35</sup>I shall consider this theory in more detail in the next chapter, where I shall treat it in connection with the more general theories on mother languages.

<sup>36</sup>Kuehner, p. 50.

<sup>37</sup>Essai sur l'origine des connoissances humaines (Part I, Section IV, Chap. i, par. 9) in Oeuvres philosophiques de Condillac, ed. Georges Le Roy (Paris: Presses Universitaires de France, 1947-51), I, 43.



The structure of the signs themselves is determined by chance:

Si l'on excepte les mots destinés à faire connoître nos besoins, c'est ordinairement le hasard qui nous a donné occasion d'entendre certains sons plutôt que d'autres, et qui a décidé des idées que nous leur avons attachées.<sup>38</sup>

Chance and imagination thus both play a rôle in determining the form of the sign, but actually attaching it to an idea is said to be a deliberate, reasoned act.

Du Marsais, who wrote the articles on language for the first six volumes of the Encyclopédie, also belongs to this group:

Les pensées des homes sont indépendantes de tout usage arbitraire; mais les mots qui ne sont que des signes de ces pensées, ont été arbitraires dans leur première institution, c'est-à-dire, que les homes qui se sont trouvés renfermés, pour ainsi dire, dans une certaine circonférence de liaison & de comerce, ont établi entre eux certains mots pour être les signes de leurs pensées, selon qu'il a plu à l'usage & à quelques autres circonstances, telles que le climat & les langues voisines, ou plus anciennes: ainsi dans chaque nation & dans chaque contrée, on s'est servi de sons différens, pour marquer ce qu'on avoit dans l'esprit.<sup>39</sup>

But this group, and d'Alembert with it, suffers perhaps from having surrendered too readily to a rationalist faith. Certainly in d'Alembert's case the theory of language origins has less value as an attempt at historical description than as support for a theory of the structure of knowledge. Indeed in the Elémens de philosophie the problem of the origin of language does not receive even the brief attention it is given in the Discours préliminaire. As we shall see

<sup>38</sup>Ibid. (II, II, i, 5), p. 105.

<sup>39</sup>César Chesneau Du Marsais, Véritables Principes de la grammaire, ou, Nouvelle Grammaire raisonnée pour apprendre la Langue Latine (n.p., [1729?]), p. xiii.

in the concluding page of this chapter, d'Alembert treats the word and the principle in the same way and hence must assign a similar origin to each.

The third group, the most progressive and, for twentieth-century observers eager to seek out the ancestry of their own thought, the most productive, consists of thinkers who probe much deeper into this question of why words take on the forms that they do. The "naturalist" theory of language origin, which declares that at least some words are determined either by the nature of the object, by the nature of the human organism which perceives it, or both, is part of the Encyclopédie's official language theory: "Origine naturelle, formation progressive, passage de l'expression par gestes et par sons inarticulés au langage proprement dit, tels sont les trois éléments essentiels de la théorie encyclopédique."<sup>40</sup> This group of theorists holds that language was brought into existence slowly and painfully, and has evolved over a very long period. In this way necessarily engaged in the study of the history of language, they gave linguistic science its only real flowering before the beginning of the nineteenth century.

Most early naturalist theories of language origin are based on the premise that language came into being out of necessity. We have already encountered this idea (see pp. 27-28), on which is based d'Alembert's only attempt to bridge the gap between the conventionalists and the naturalists, when he asserts that society and language

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<sup>40</sup>Hubert, pp. 332-333.

came into being at the same time and had as a common purpose the preservation of man. But only within the naturalist group was this basic view amplified into a theory: that man's first signs owed their forms to observers' conceptions of certain characteristics of the object.

William Warburton's book<sup>41</sup> is one of the earlier sources of these ideas. Systems of writing, says Warburton, developed at the same time and followed the same pattern as spoken language:

Thus WRITING and LANGUAGE, throughout all their various modes, ran exactly the same fortune: invented out of necessity, to communicate men's thoughts to one another; they were continued out of choice, for mystery and ornament . . . .<sup>42</sup>

The purposes of these two groups of signs are identical; they are meant to communicate thoughts. But written signs are designed to give permanence to ideas and to communicate them at a distance.<sup>43</sup> The essential point here is that the first written signs were primitive pictures of objects, and as such their form is very much determined by these objects.<sup>44</sup> Later writing forms (such as Egyptian hieroglyphics, and still later Chinese syllabic script) are the result of refinement of primitive scripts:

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<sup>41</sup>See note 21 of this chapter.

<sup>42</sup>The Divine Legation of Moses Demonstrated (Bk. IV, section IV), 4th ed. (London: A. Millar and J. and R. Tonson, 1765-66), III, 179.

<sup>43</sup>Ibid., p. 70.

<sup>44</sup>Ibid., p. 71.

In a word, all the barbarous nations upon earth, before the invention or introduction of letters, made use of Hieroglyphics, or signs for things, to record their meaning: the more gross, by representation; the more subtle and civilized, by analogy and institution.<sup>45</sup>

These rational processes of analogy and institution work on material provided by unselfconscious representation. Spoken language, according to Warburton, developed in a similar fashion.

By the 1750's this theory was receiving much attention. In the Encyclopédie itself, and in other works by its contributors, the basic elements of the theory were being explored. The two most important of these contributors are Turgot ("Etymologie") and Cahusac ("Chant" and "Geste").

Turgot's article "Etymologie," published in the sixth volume in 1756, is based, according to Professor Grimsley,<sup>46</sup> on the early work of Charles de Brosses (whose own Traité de la formation mécanique des langues et des principes physiques de l'étymologie, in which he gives his theories their fullest treatment, did not appear however until 1765). In this article Turgot observes that languages are in a state of perpetual evolution,<sup>47</sup> and are subject to all sorts of capricious changes. The etymologist's aim is to trace back the history of each word to its most primitive form and meaning, in order to clarify present-day usage. Such a search may permit the etymologist to see in

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<sup>45</sup>Ibid., pp. 97-98.

<sup>46</sup>Ronald Grimsley, "Some aspects of 'nature' and 'language' in the French Enlightenment," p. 672.

<sup>47</sup>Encyc., VI, 98.

certain word forms the primitive notions which caused that word to be given its meaning:

Un mot qu'on invente ne signifie rien: il fallut, en rassemblant les signes des idées les plus approchantes, essayer de mettre l'esprit sur la voie de celle qu'on voulait lui donner: l'imagination s'étudia à saisir le fil d'une certaine analogie qui lie, et nos sensations, et leurs différens objets: une analogie imparfaite ou éloignée fit naître ces métaphores grossières et fréquentes que la nécessité plus ingénieuse que délicate emploie, que le goût désavoue, dont les premières langues sont pleines et dont les étymologistes aperçoivent même encore les vestiges dans les plus cultivées.<sup>48</sup>

In other works, Turgot is more openly partial to naturalist theories:

Les langues ne sont point l'ouvrage d'une raison présente à elle-même.

Dans une émotion vive, un cri, avec un geste qui indique l'objet, voilà la première langue.

Un spectateur tranquille, pour rappeler ce qu'il a vu, imita le son que donnait l'objet; voilà les premiers mots un peu articulés.<sup>49</sup>

And finally in his Réflexions sur les langues (1751), Turgot points out the most obvious objection to a conventional theory: "Ne cherchons donc point l'origine des langues dans une convention arbitraire qui supposerait d'ailleurs des signes déjà établis, car, comment la faire sans parler?"<sup>50</sup>

In short, Turgot believes that it is possible to retrace back

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<sup>48</sup> Tableau philosophique des progrès successifs de l'esprit humain, in Oeuvres de Turgot, ed. Gustave Schelle (Paris: Félix Alcan, 1913-23), I, 223.

<sup>49</sup> "Remarques critiques sur les Réflexions philosophiques de Mauteruis sur l'origine des langues et la signification des mots," in Oeuvres de Turgot, I, 171.

<sup>50</sup> Oeuvres de Turgot, I, 352.

to an earlier stage of development the steps which language has taken. It may even be possible to return to the most primitive forms, or at any rate to grasp some hints as to what they may have been like. But, he suggests, these earliest forms cannot have been created by rational decision; therefore we must look elsewhere for the factors which determined them.

Cahusac, in his articles, theorizes about the nature of some of these primitive forms. In "Geste" he exposes the theory that between primitive interjections and the first spoken language there was an intermediary stage in which sign language was used:

L'homme a senti, dès qu'il a respiré; & les sons de la voix, les mouvemens divers du visage & du corps, ont été les expressions de ce qu'il a senti; ils furent la langue primitive de l'univers au berceau; ils le sont encore de tous les hommes dans leur enfance; le geste est & sera toujours le langage de toutes les nations: on l'entend dans tous les climats; la nature, à quelques modifications près, fut & sera toujours la même.<sup>51</sup>

This reminds us of Condillac's "langage d'action" which, he says, is the most primitive sort.<sup>52</sup>

In "Chant" we learn that the first vocal signs are formless projections of our emotional state:

C'est par les différens sons de la voix que les hommes ont dû exprimer d'abord leurs différentes sensations. La nature leur donna les sons de la voix, pour peindre à l'extérieur les sentimens de douleur, de joie, de plaisir dont ils étoient intérieurement affectés,

<sup>51</sup>Encyc., VII, 651.

<sup>52</sup>Grammaire (Section I, Chap. 1), from the Cours d'études pour l'instruction du Prince de Parme (first published in 1775), in Oeuvres philosophiques de Condillac, I, 428.

ainsi que les désirs & les besoins dont ils étoient pressés. La formation des mots succéda à ce premier langage. L'un fut l'ouvrage de l'instinct, l'autre fut une suite des opérations de l'esprit.<sup>53</sup>

We have seen that Beauzée, in those articles where a censor might most readily look to ferret out heretical theories on language origins, upholds traditional orthodox ideas. However in "Onomatopée" he is somewhat more frank:

Toutes ces remarques [sur l'origine onomatopoeétique des mots], & mille autres que l'on pourrait faire & justifier par des exemples sans nombre, nous montrent bien que la nature agit primitivement sur le langage humain, indépendamment de tout ce que la réflexion, la convention ou le caprice y peuvent ensuite ajouter . . . .<sup>54</sup>

Signs of an onomatopoeic nature could have been assigned by rational beings in agreement with one another; Beauzée is suggesting however that instinctive imitation is rather the source of such words.

For one of the most original and striking theories of language origins, one which fits into the group of naturalist hypotheses but which is set apart from them by its agreement with our own most advanced speculation, we must consider Rousseau. The Discours sur l'origine et les fondemens de l'inégalité parmi les hommes, published in 1754, contains the first notable exposition of his ideas. Man's most primitive utterances are anything but rational: "Le premier langage de l'homme, le langage le plus universel, le plus énergique, et le seul dont il eut besoin, avant qu'il fallut persuader des hommes

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<sup>53</sup>Encyc., III, 141.

<sup>54</sup>Ibid., XI, 485.

assemblés, est le cri de la Nature."<sup>55</sup> More refined forms of communication followed this modest beginning. The "cri de la Nature" is sometimes accompanied by gestures.<sup>56</sup> Language is at first very rudimentary,<sup>57</sup> but man, pushed by increasing need for the exchange of ideas, formulates fixed words, which become more and more generalized and abstract as time passes.<sup>58</sup>

Rousseau's real originality comes to the fore, however, in the Essai sur l'origine des langues, composed during the early 1750's. Although some ideas in this work appeared in a rudimentary form in Condillac's Essai sur l'origine des connoissances humaines, their development is due uniquely to Rousseau. In an article devoted to Rousseau's work, Edouard Claparède has noted several points of agreement between Rousseau's theory and that presented by Otto Jespersen, a noted twentieth-century linguist. A list of these points gives us at the same time a précis of the salient points of Rousseau's theory. Primitive language, say Rousseau and Jespersen, was poor in thought but rich in sounds and affective expression.<sup>59</sup> Love, rather than need, brought forth the first language; because of its emotional content it was poetic rather than prosaic.<sup>60</sup> It was sung rather than spoken (cf.

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<sup>55</sup>In Oeuvres complètes, eds. Bernard Gagnebin and Marcel Raymond, vol. III (Paris: Pléiade, 1964), p. 148.

<sup>56</sup>Ibid.

<sup>57</sup>Ibid., p. 149.

<sup>58</sup>Ibid.

<sup>59</sup>Claparède, "Rousseau et l'origine du langage," p. 96.

<sup>60</sup>Ibid., p. 97.



Cahusac in "Chant").<sup>61</sup> There were many grammatical irregularities.<sup>62</sup> It had a rich vocabulary,<sup>63</sup> consisting mainly of words which signify whole sentences<sup>64</sup> (as they do in native North American languages). But what is most important for us here is that Rousseau underlines the irrational character of original language:

Sitôt qu'un homme fut reconnu par un autre pour un Etre sentant et pensant et semblable à lui, le désir ou le besoin de lui communiquer ses sentimens et ses pensées lui en fit chercher les moyens. Ces moyens ne peuvent se tirer que des sens, les seuls instrumens par lesquels un homme puisse agir sur un autre. Voilà donc l'institution des signes sensibles pour exprimer la pensée. Les inventeurs du langage ne firent pas ce raisonnement, mais l'instinct leur en suggera la conséquence.<sup>65</sup>

For Rousseau, who believes that society has had a corrupting influence, language must have originated among solitary individuals, venting their instinctive cries.

Rousseau's theory does not, of course, have the objective simplicity of d'Alembert's, although both are designed to support certain philosophical principles of their authors. But Rousseau's intuition carries him far closer to some modern views of the matter than do the musings of any other naturalist theorist; the conventionalists, such as d'Alembert, remain far behind.

Over the next two decades the naturalist theory was polished and

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<sup>61</sup>Ibid., p. 99.

<sup>62</sup>Ibid., p. 101.

<sup>63</sup>Ibid.

<sup>64</sup>Ibid., p. 102.

<sup>65</sup>Rousseau, Essai sur l'origine des langues, ed. Charles Porset (Bordeaux: Guy Ducros, 1968), p. 27.

codified by several well-known thinkers. Their formulations, while not blessed with novelty, do embody the most advanced thinking of the century. Charles de Brosses, in his Traité de la formation mécanique des langues, et des principes physiques de l'étymologie, published in 1765, sets out to prove the following statement:

Que le système de la première fabrique du langage humain & de l'imposition des noms aux choses n'est donc pas arbitraire & conventionnel, comme on a coutume de se le figurer; mais un vrai système de nécessité déterminée par deux causes. L'une est la construction des organes vocaux qui ne peuvent rendre que certains sons analogues à leur structure: l'autre est la nature & la propriété des choses réelles qu'on veut nommer. Elle oblige d'employer à leur nom des sons qui les dépeignent, en établissant entre la chose & le mot un rapport par lequel le mot puisse exciter une idée de la chose.<sup>66</sup>

This theory refuses to admit any action of reason in the formation of the elements of language. Rather it insists on a double dependence: the mind depends for its signs on the voice mechanism which produces the sounds composing them, and the voice mechanism depends, in the final analysis, on the sounds that objects produce for the determination of the form its imitation takes.

Antoine Court de Gébelin published between 1773 and 1784 a very long and very eclectic work called Le monde primitif, analysé et comparé avec le monde moderne. The second volume, which is concerned with the history of language, begins in essentially the same manner as Brosses's work; Court de Gébelin, however, holds that since God created man's vocal organs, He is the author of the human faculty of speech.<sup>67</sup> But nature gives us only the root words of our languages;

<sup>66</sup>Brosses (Paris: Saillant, Vincent, Desaint; 1765), I, xiii-xiv.

<sup>67</sup>Le monde primitif . . . (Paris: Court de Gébelin, Boudet, Valleyre, Duchesne, Saugrain, Ruault; 1773-84), II, xi.

human industry develops them into the immense lexicons we now possess.<sup>68</sup>

In his later years Condillac's ideas on language origin showed his evolution towards a position allied to the two we have just seen. The "langage d'action" which is the earliest of human languages, both in the lifetime of the individual and the lifetime of the species, is merely a result of the form of our bodies, and as such does not show the existence of ideas to be communicated:

Le langage que je nomme inné [le langage d'action] est un langage que nous n'avons point appris, parce qu'il est l'effet naturel et immédiat de notre conformation. Il dit à-la-fois tout ce que nous sentons; il n'est donc pas une méthode analytique; il ne décompose donc pas nos sensations; il ne fait donc pas remarquer ce qu'elles renferment; il ne donne donc point d'idées.<sup>69</sup>

For Condillac a language must be an analytical method, and a mere voicing of primitive sensations does not meet this criterion.

Most modern linguists are of the opinion that speculation about the origin of language cannot legitimately be undertaken because no records of very early languages exist. For the last 170 years, the kind of questions which were raised by eighteenth-century theorists have rather been treated by anthropologists, who study language in primitive societies, and by psychologists, who study the origin and development of the linguistic phenomenon in the individual. Any modern statements about mankind's first languages have been made by extrapolating from the information provided by these two sciences.

<sup>68</sup> Ibid., p. xiv.

<sup>69</sup> La Logique ou les premiers développemens de l'art de penser (part of the Cours d'études), in Oeuvres philosophiques de Condillac, II, 398.

Since about 1800, when the first significant discoveries about the existence of large language groups were made, historical linguistics has concentrated its efforts on languages for which written records do in fact exist.

However some students of linguistic science have formulated theories about language origin. Otto Jespersen, as we have seen, devoted some thought to it, suggesting that there are basically four distinct explanations for word origins:<sup>70</sup> first the "bow-wow" theory, or theory of pure imitation; second the "pooch-pooch" theory, which indicates an instinctive expression of feeling; third the "ding-dong" theory, which postulates some mystic harmony between sound and sense, a more distant, intangible onomatopoeic relationship; and finally the "yo-he-ho" theory which suggests that some expressions grew out of primitive tribal work chants. Aside from the last, all of these theories passed through the minds of eighteenth-century thinkers and found expression in their works. More recently Claude Lévi-Strauss has stressed that Rousseau was right when he said that primitive language was figurative.<sup>71</sup> And the late Morris Swadesh left behind at his death notes on his meditations on the common origins of very different language groups, and on possible reasons for evolutionary parallels.<sup>72</sup>

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<sup>70</sup>I am following Mrs. Knight's description of Jespersen's theories, which is given in The Geometric Spirit . . . , p. 161.

<sup>71</sup>Le totémisme aujourd'hui (Paris: Presses Universitaires de France, 1965), p. 146.

<sup>72</sup>Joel Sherzer, ed., The Origin and Diversification of Language, by Morris Swadesh (Chicago, New York: Aldine-Atherton, 1971), p. xi.

But there exist as well wholesale rejections of these attitudes. Carlo Tagliavini declares for example that, "non esiste alcun rapporto di necessità [except onomatopoeia] fra il concetto o oggetto e il 'segno' che lo designa nelle varie lingue."<sup>73</sup> So the controversy continues.

This outline of the three main groups of theories on the origin of language and the few examples I have given of the different families of speculations which go into them, tell us several things about d'Alembert and his own ideas. First, they are not original. Second, much of the other speculation going on during the 1750's and 1760's was rather more realistic and showed greater insight into basic human linguistic processes. And third, d'Alembert was further than many of his contemporaries from some daring modern views of the origin of language. But it is not a question here of judging d'Alembert's theories in the light of the work of either his contemporaries or ours. What should concern us more is how this basic conception of the word fits into a larger philosophical framework.

#### Definitions and Principles

Lexicological study is not one of d'Alembert's main preoccupations, but searching out the origins of language and formulating a theory of the historical foundations of the lexicon are certainly necessary preliminaries to describing a language which has come down to us. Philosophy, in its eighteenth-century forms, does not exclude, but

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<sup>73</sup>Tagliavini, Panorama di storia della linguistica (Bologna: Pàtron, 1963, p. 10.

rather demands a believable historical description. But for d'Alembert, the word exists first of all to serve as a foundation for knowledge. If, when we are considering words, we are really speaking of a "static element" of language, we presuppose the existence of some "kinetic" state of this same element, one in which it begins to move and combine with other elements to form new totalities. D'Alembert is concerned with the static conception of the word, without losing sight of its kinetic aim. If he seems to want to concentrate on the word itself, it is only to establish once and for all this solid basis of which I have already spoken. The definition, or the principle, must be clearly fixed before one can go any further, or even before one can return with greater assurance to an area which has already been explored.

The definition, which is the basis of all knowledge, is formulated in the researcher's mind by a process in which he retraces the steps of his empirical inquiries. There must be an epistemological coming and going, as it were, between the central, basic idea and the observed fact:

Starting with "definitions," which are simply a refinement of the common notions of ordinary men, the philosopher can move in ever widening circles of knowledge, his intellectual horizon bounded only by the simple absolute truth which he may reasonably suppose to lie at the basis of all things. At the same time, this continual broadening of rational knowledge is possible only when it is carried out in conjunction with a carefully elaborated method of quantitative and empirical observation.<sup>74</sup>

We must be satisfied for the moment with considering the rôle of

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<sup>74</sup>Grimsley, Jean d'Alembert, pp. 283-284.

definitions in this system. Although d'Alembert's broader philosophical vision includes both the formulation of principles and the analysis of facts, I am concerned in this chapter with exploring the nature of these principles. The analysis of facts will be treated in Chapter IV.

The idea of the principle found perhaps one of its earliest, most fruitful expressions in the Platonic concept of forms. From the basic, all-inclusive idea one proceeds to a cruder reality; one thus reasons in the direction of ever-increasing imperfection. For the eighteenth century, Descartes's use of this basic method, by which he elaborates scholastic notions of the a priori,<sup>75</sup> was the most familiar. Certainly it was from Descartes that this kind of rationalism received its greatest enrichment, and d'Alembert in his youth was thoroughly imbued with both Cartesian method and Cartesian physics.<sup>76</sup> Influential throughout the eighteenth century were the mathematical precision and structure of Descartes's method, which Etienne Gilson describes as, "ce qu'il y a de caractéristique dans sa métaphysique."<sup>77</sup> This attitude, says Gilson, is the result of a reaction in the young Descartes: "Ayant décidé, dès 1619, de suivre en toute question l'ordre des mathématiciens, il s'est engagé une fois pour toutes à renverser l'ordre thomiste et à aller toujours de la pensée à l'être."<sup>78</sup>

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<sup>75</sup>Gilson, Etudes sur le rôle de la pensée médiévale dans la formation du système cartésien (Paris: Vrin, 1951), p. 137.

<sup>76</sup>"Mémoire de d'Alembert, par lui-même," Oeuvres, I, 1; Grimsley, op. cit., p. 3.

<sup>77</sup>Gilson, p. 196.

<sup>78</sup>Ibid.

But d'Alembert's Cartesianism, as Professor Casini has so aptly stressed, is only a Cartesianism of method and of preconceptions: "Se di 'cartesianismo' si può parlare, si tratta di un cartesianismo ben filtrato e depurato dalle ipotesi a priori, dalle leggi arbitrarie sull'urto, dai tourbillons."<sup>79</sup> D'Alembert along with most eminent scientists of the age rejected Cartesian hypotheses where they were found to be inadequate, but they all retained the logical method which Descartes had outlined.

Sir Isaac Newton, despite his reputation as an experimentalist, also believed strongly in formulating simple, fruitful principles. In the Principia we read the following credo, which stresses the idea of generalizing propositions:

Whatever is not deduced from the phenomena is to be called an hypothesis; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy. In this philosophy particular propositions are inferred from the phenomena, and afterwards rendered general by induction.<sup>80</sup>

Newton's worldview is as mathematical as Descartes's, but Newton stresses the tie which must bind mathematical laws of nature to reality. Ernst Cassirer, in choosing d'Alembert as the most representative of Enlightenment philosophers of science, has emphasized that d'Alembert made Newton's idealized experimental system into a

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<sup>79</sup>Paolo Casini, "D'Alembert epistemologo," p. 34.

<sup>80</sup>Quoted by Edwin Arthur Burtt in The Metaphysical Foundations of Modern Physical Science, 2nd ed. (London: Routledge and Kegan Paul, 1932), p. 214.



more all-embracing view of the scientist's rôle.<sup>81</sup>

In the Traité de dynamique (1743), the best-known of d'Alembert's scientific works, is found the first exposition of this approach. His introduction begins with an explanation of the necessity of the method he is to follow: "En général, on a été plus occupé jusqu'à présent à augmenter l'édifice qu'à en éclairer l'entrée; & on a pensé principalement à l'élever, sans donner à ses fondemens toute la solidité convenable."<sup>82</sup> By reducing the number of principles he wants to make them more general: "Je me suis proposé dans cet Ouvrage de satisfaire à ce double objet, de reculer les limites de la Mécanique, & d'en applanir l'abord; . . . en un mot, d'étendre les Principes en les réduisant."<sup>83</sup> Inspired by this ideal he then defines three basic principles of mechanics; they are the notion of equilibrium, the concept of inertia, and the principle of vector addition. From these three principles he deduces what has come to be known as D'Alembert's Principle,<sup>84</sup> a theorem which greatly reduces the complexity of the solutions to certain types of mechanical problems. Without considering here the technical details of his Principle, we can see that by initially simplifying basic principles, by clarifying, in a sense, our vocabulary, complicated problems are as a result made

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<sup>81</sup>Cassirer, The Philosophy of the Enlightenment, trans. F.C.A. Koelln and J.P. Pettegrove (Princeton: Princeton University Press, 1951), pp. 55-56.

<sup>82</sup>Traité de dynamique (Paris: David, 1743 [Reprint, Bruxelles: Culture et Civilisation, 1966]), p. iv.

<sup>83</sup>Ibid.

<sup>84</sup>See Appendix B.

simpler. D'Alembert consistently uses this method to approach many different kinds of problems.

The pedagogical aim of the Encyclopédie will be realized, say its editors, by using such a method:

. . . il est peut être vrai de dire qu'il n'y a presque point de science ou d'art dont on ne pût à la rigueur, & avec une bonne Logique, instruire l'esprit le plus borné; parce qu'il y en a peu dont les propositions ou les regles ne puissent être réduites à des notions simples, & disposées entre elles dans un ordre si immédiate que la chaîne ne se trouve nulle part interrompue.<sup>85</sup>

And again in the third volume, d'Alembert declares in the "Avertissement des éditeurs":

La Métaphysique des Sciences, car il n'en est point qui n'ait la sienne, fondée sur des principes simples & sur des notions communes à tous les hommes, sera, nous l'espérons, un des principaux mérites de cet Ouvrage.<sup>86</sup>

Although rich in general declarations of a theoretical nature, such as those we have just read, the Encyclopédie presents practical suggestions at all levels as well. In "Cours (Gramm.)" d'Alembert suggests a plan for teaching science based, as one might foresee, on a few fundamental principles.<sup>87</sup> In "Dédution" he proposes a book on geometry which begins with the exposition of simple axioms which would be "évidens pour les esprits les plus bornés."<sup>88</sup> The article "Définition"

<sup>85</sup> Discours préliminaire, Encyc., I, x.

<sup>86</sup> Encyc., III, v.

<sup>87</sup> Ibid., IV, 396.

<sup>88</sup> Ibid., p. 730.

(also by d'Alembert) makes a distinction between definitions of a thing and definitions of a word. Only the latter is possible, and only the latter has any practical value. The definition of a word clarifies what that word designates, and pushes no further than the level of lexical analysis.<sup>89</sup>

But the most impressive article of all in this domain of principles and definitions is "Elémens des sciences." Here d'Alembert presents the same pedagogical concern as that which characterizes the whole encyclopaedic enterprise: "Tout ce qui est vrai, sur-tout dans les sciences de pur raisonnement, a toujours des principes clairs & sensibles, & par conséquent peut être mis à la portée de tout le monde sans aucune obscurité."<sup>90</sup> He proposes climbing this continuous chain of knowledge to reach "un principe unique, dont les conséquences principales seroient les élémens de chaque science particuliere."<sup>91</sup> There are no limits to d'Alembert's methodological optimism as long as he remains in a purely theoretical realm. To his personal concern for fixing all knowledge in a solid, well-ordered structure, is added his humanitarian desire, typical also of his century, to enlighten his fellows.

The Essai sur les élémens de philosophie, ou sur les principes des connoissances humaines, to give it its full title, is in a sense the elaboration of the article which we have just

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<sup>89</sup>Ibid., pp. 748-749.

<sup>90</sup>Ibid., V, 492.

<sup>91</sup>Ibid., p. 491.

considered. Indeed in the Elémens d'Alembert reproduces many passages from that article. Published in 1759, one year after d'Alembert resigned as editor of the Encyclopédie, the Elémens constitutes a more personal exposition of the author's philosophy than the nature of the Encyclopédie ever permitted. The Elémens thus represents for d'Alembert what Professor Schwab calls, "le résumé philosophique du développement de sa pensée, depuis sa précoce jeunesse jusqu'au plus haut point de sa carrière."<sup>92</sup>

The aims of the book are as follows:

. . . de fixer et de recueillir les principes de nos connaissances certaines; de présenter sous un même point de vue les vérités fondamentales; de réduire les objets de chaque science particulière à des points principaux et bien distincts, pour les parcourir plus aisément; d'éviter également dans cette décomposition, l'esprit minutieux et borné qui laisse le tronc pour les branches, et l'esprit trop avide de généralités, qui perd et confond tout en voulant tout embrasser et tout réduire.<sup>93</sup>

He thus wishes to facilitate the growth of knowledge by utilizing the method we have seen. From the simple notions one ascends step by step to the subject under examination, be it logic, metaphysics, grammar, moral theory, or the mathematical and physical sciences. For d'Alembert any sure knowledge, in any of these domains, is built on fixed and static principles which are, to be sure, linguistic conventions, but conventions blessed with the most fertility that man's logical powers can give them.

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<sup>92</sup>Richard N. Schwab, ed., Essai sur les éléments de philosophie, by d'Alembert (Hildesheim: G. Olm, 1965), p. ix.

<sup>93</sup>Elémens de philosophie, Oeuvres, I, 126.

When we begin to speak of principles founded necessarily on the empirical analysis of real bodies which exist outside ourselves, we remain only with difficulty in the realm of static elements of language. But d'Alembert seems to consider in the same light, and judge by the same criteria, primitive, simple words and scientific definitions. Thus, although there are two sorts of linguistic elements, the point of departure in the case of each type remains the same.

## CHAPTER III

### THE COMBINATION OF IDEAS: THE PROPOSITIONAL STATEMENT

#### Introduction

D'Alembert could consider his intellectual tasks as being set on a firm foundation only when he possessed a clear conception of the elements of language and of the nature of their combination. For the edifice he was constructing he needed sound building stones, carefully cut to size, a knowledge of the methods to be used in assembling the constituent parts, and a firm grasp of the plan of the whole structure. In this chapter, by considering the nature of word combinations in propositional statements, I shall concentrate on the second requirement.

It is necessary to study these combinations carefully because d'Alembert seeks to found a global order to contain all knowledge. His aim is to establish the relationships among all the diverse branches of learning in order to permit a reasoning man to go from one fact to another, no matter how unrelated the facts may seem, without leaving the continuous paths of familiar data. He wishes to submit all creation to the remarkable vision of mankind empowered with reason. According to his own metaphor he wants to make himself the architect of human knowledge, who knows intimately each stone in his building as well as the relations among them all:

Les Sciences sont un grand édifice auquel plusieurs personnes travaillent de concert: les uns à la sueur de leurs corps tirent la pierre de la carrière; d'autres la traînent avec effort jusqu'au pied du

bâtiment; d'autres l'élevent à force de bras & de machines; mais l'architecte qui la met en oeuvre & en place a tout le mérite de la construction.<sup>1</sup>

Like the theory of the elements of language, which we have studied in the preceding chapter, the theory of the propositional statement is of only secondary interest to d'Alembert. The essentially Cartesian grammar which he reveals in the Elémens de philosophie holds his attention only because he wants to base the communication of thought on clear and universal principles. During the Enlightenment, whose essential characteristics d'Alembert's works exhibit in so many respects, the desire for order engenders an unconcealed eclecticism. Like so many other thinkers of the period, d'Alembert seizes upon empiricism, with its Aristotelian basis, and Cartesian and Platonic rationalism, as seems prudent to him at any given moment. As we shall see in Chapter IV, d'Alembert borrows from empiricism elsewhere in his theory of knowledge; as far as his conceptions of sentence structure are concerned, he leans on rationalist theory. I shall now outline this rationalist theory, following it with an indication of some of its principal eighteenth-century proponents.

#### Rationalist Language Theory

In Les mots et les choses Michel Foucault describes the revolution in the conceptions of both the word and the sentence which he says took place about the year 1600 and which held sway for two centuries. The widespread resurgence of rationalism in the seven-

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<sup>1</sup>"Découverte," Encyc., IV, 706.

teenth century is according to Foucault the birth of a vision which reflects the "substitution de l'analyse à la hiérarchie analogique."<sup>2</sup> That is to say that language is no longer an earthly image of a higher order, but rather a system of words whose nature and origin are discernible, and of sentences which permit man to accumulate and redistribute his knowledge. As we have seen, the word, according to Foucault's conception of this period's idea, is primarily the arbitrary sign of a thought and is not determined in a clear fashion by the nature of the object which it represents. From this conception of the word to one of a sentence which can be used as a tool for logical analysis, we must take a leap similar to the one by which we pass from a mere collection of words to language itself. Cartesian rationalism conceives of a language which is not the image of divine truth. Language is no longer something mysterious which descends upon us from above; rather its form is conceived intuitively and developed by rational judgment and decision. In this way it is imposed on the exterior chaos which the multitude of our ideas reveals to us. According to Foucault, language becomes at this stage a useful analytic tool:

La vérité trouve sa manifestation et son signe dans la perception évidente et distincte. Il appartient aux mots de la traduire s'ils le peuvent; ils n'ont plus droit à en être la marque. Le langage se retire du milieu des êtres pour entrer dans son âge de transparence et de neutralité.<sup>3</sup>

Therefore in this period language loses some of its mystery, and as

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<sup>2</sup>Les mots et les choses, p. 69.

<sup>3</sup>Ibid., p. 70.



far as grammar is concerned, becomes accessible to the grammairien philosophe.<sup>4</sup> The Enlightenment views language with the same utilitarian eye which it casts on science, art, and moral law; language is a tool, which, like any other, can be made to bring happiness and well-being to mankind. Like any other entity, language occupies a place in a rational universe, and as such can be made to reveal its structure and basic principles. By such analysis it can be understood, and its usefulness can be increased.

The elements of this rationalist theory of language, a theory which had, as we shall see, a universal appeal, are those of the whole rationalist current of the Enlightenment. Even though in eighteenth-century France there exist philosophical tendencies which may be described as "empiricist," "Newtonian," even "sentimentalist" and "emotional," there remains throughout the century and beyond, a current which inherits directly from Descartes the proud point of view that the whole universe can be penetrated and understood. This rationalism of approach, to which d'Alembert certainly subscribes most willingly, maintains its vigour from the beginning to the end of the century. But although all thinkers borrow from Cartesian rationalism, most seek insights elsewhere as well. We return, then, to this open eclecticism which I have already mentioned: a philosopher may oppose Descartes on some points, but he usually returns to Cartesianism very readily, whenever it is convenient.

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<sup>4</sup>This term, used by d'Alembert and most other eighteenth-century writers on language, denotes one who is able to seize the hidden order common to all languages and relate this order to the rules of logic.

Rationalist thinkers in the seventeenth and eighteenth centuries conceive of a universal human reason shared equally by all men, and believe it to be the essential human characteristic. Since this universal reason exists, then the rules which govern the action of reason, that is to say the rules of logic, have equal force for everyone. Universal reason can be known, and by using logical procedures one can communicate any hitherto unknown material to any literate, thinking person, however limited his previous experience in the matter at hand may be. Finally, through reason and logic (which is really reason in action) man can better control the nature and direction of his inquiries in order to derive positive, useful results from them. The grammarians of Port Royal and of the Encyclopédie accepted this conception of the human mind as the basis for their examination of language.

The idea that logical rules are universal and at the same time identical with the rules of grammar, has been summed up by Professor Grimsley in a slightly sceptical tone: "Men tend to assume that their own often arbitrary linguistic habits have some necessary and immutable connection with the nature of thought itself."<sup>5</sup> But right or wrong, eighteenth-century thinkers accepted this connection and based on it their thoughts on the universality of the logical basis of grammar.

Most grammarians declare openly that grammar rules derive from logical principles. For example, Du Marsais states: "La Grammaire a

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<sup>5</sup>Grimsley, "Maupertuis, Turgot and Maine de Biran on the origin of language," Studies on Voltaire and the Eighteenth Century, LXII (1968), 287.

une liaison nécessaire avec la science des idées & du raisonnement, parce que la Grammaire traite des mots & de leurs usages, & que les mots ne sont que les signes de nos idées & de nos jugemens."<sup>6</sup> Douchet and Beauzée, in their article "Grammaire," are just as categorical:

. . . toutes les langues assujettiront indispensablement leur marche aux lois de l'analyse logique de la pensée; & ces lois sont invariablement les mêmes partout & dans tous les tems, parce que la nature & la maniere de procéder de l'esprit humain sont essentiellement immuables.<sup>7</sup>

Condillac goes one step further and declares that the power to reason precedes linguistic ability in the young child:

En effet nous apprenons à parler, parce que nous apprenons à exprimer par des signes les idées que nous avons, et les rapports que nous apercevons entre elles. Un enfant n'apprendroit donc pas à parler, s'il n'avoit pas déjà des idées, et s'il ne saisissoit pas déjà des rapports. Il juge donc et il raisonne avant de savoir un mot d'aucune langue.<sup>8</sup>

These statements reflect an aspect of the intellectual climate of d'Alembert's time that he readily accepted.

Gunvor Sahlin, in her excellent work on Du Marsais, provides a brief history of what came to be known as universal grammar ("grammaire générale"), that is, a basic grammar which applies to all languages. The Greeks believed that grammar is an extension of logic,

<sup>6</sup>Du Marsais, Véritables principes de la grammaire . . . , p. xiii.

<sup>7</sup>Encyc., VII, 841.

<sup>8</sup>"Discours préliminaire" of the Cours d'études, in Oeuvres philosophiques de Condillac, I, 403.

and they passed on this belief to scholastic philosophers in the Middle Ages.<sup>9</sup> Latin grammar, which was never made a part of philosophy, remained essentially normative.<sup>10</sup> But the scholastics, following their tendency to seek out universality wherever it might be manifest, postulated an identification between the "external" forms of language and the "internal" operations of the mind.<sup>11</sup> They based their studies on Latin, assuming that this language possessed a grammatical structure which was ideally logical.<sup>12</sup> The principal medieval work in this genre is the Grammatica speculativa sive de modis significandi by Johannes Duns Scotus.<sup>13</sup> And the seventeenth century received the ideas of this work through Scaliger's De causis linguae latinae (1540) and Sanctius' Minerva, sive de causis linguae latinae commentarius (1587).<sup>14</sup> These ideas, as they reached Lancelot, blended with the Cartesianism of Arnauld<sup>15</sup> and produced the work which, through the rest of the seventeenth century and on to the closing years of the eighteenth, was the basic textbook of universal grammar theory.

The Grammaire générale et raisonnée, known more commonly as the Grammaire de Port-Royal after the Jansenist foundation to which its

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<sup>9</sup>Sahlín, César Chesneau Du Marsais et son rôle dans l'évolution de la grammaire générale, p. 8.

<sup>10</sup>Ibid., p. 9.

<sup>11</sup>Ibid.

<sup>12</sup>Otto Jespersen, The Philosophy of Grammar (London: George Allen & Unwin; New York: Henry Holt; 1924), p. 47.

<sup>13</sup>Sahlín, p. 10.

<sup>14</sup>Ibid., p. 12.

<sup>15</sup>Ibid., p. 14.

authors were attached, first appeared in 1660. Its original title proclaims the work's dual purpose. First, as a "grammaire générale" it sets out universal grammatical rules. And second, as a "grammaire raisonnée" it outlines clear, logical principles of language from which individual cases, which might otherwise appear rather capricious, can be deduced. Guy Harnois has pointed out that this second aspect of the authors' method was an unhealthy reaction to Vaugelas's formulation of grammar rules by inference from current usage.<sup>16</sup> Vaugelas's work, the Remarques sur la langue française, which first appeared in 1647, never gained the popularity of the Grammaire de Port-Royal probably because the latter work, due to its rationalist structure, was more useful as a teaching instrument in the schools. Its aim was to explain, while Vaugelas set out to describe.

Because of its rather conservative<sup>17</sup> nature, the Grammaire de Port-Royal allied itself easily with the Cartesianism which dominated the French educational system well beyond 1750. D'Alembert would certainly have come in contact with this work through his Jansenist masters at the Collège des Quatre-Nations. But in any case it was so well suited to the rationalist temper of the times that it is not surprising that its basic assumptions were very popular throughout the Enlightenment, in France and elsewhere; they were not seriously questioned until the nineteenth century and still have learned partisans

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<sup>16</sup>Harnois, Les théories du langage en France de 1660 à 1821, pp. 20-21.

<sup>17</sup>And I say "conservative" because Vaugelas's descriptive techniques did not return to universal favour until the advent of comparative linguistics in the early nineteenth century.

today.<sup>18</sup>

In the Grammaire générale et raisonnée it is proposed that there exists within all languages a body of verifiable rules, determined by the very structure of human thought, and determining, in turn, the principal characteristics of all languages. Each language thus mirrors a primitive, hidden disposition towards certain forms of expression. The idea or form of a universal structure therefore exists before any particular language; real languages furnish only more or less true representations of this form.

Universal grammar theory received almost no novel elaborations in the eighteenth century; it was carried over almost unchanged from the formulation which the Port Royal grammarians had given it. New ideas about the structure of language, such as those of the président de Brosses, for example, were made to fit into the already existing framework of universal grammar, instead of being allowed to form the basis of a new outlook. In general the Enlightenment, concerning this matter of the structure of language, was remarkably unoriginal.

Many writers did expand universal grammar theory, however, without bringing much new material to the subject; let us consider some of the more celebrated ones.

Du Marsais's Véritables Principes de la grammaire, which was first published in 1729, contains an explanation of just what these universal characteristics are:

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<sup>18</sup>See Noam Chomsky, Cartesian Linguistics: A Chapter in the History of Rationalist Thought.

Il y a dans la Grammaire des observations qui conviennent à toutes les langues, ces observations forment ce qu'on appelle la Grammaire générale: telles sont les remarques que l'on a faites sur les sons articulés, sur les lettres qui sont les signes de ces sons; sur la nature des mots, & sur les différentes manières dont ils doivent être, ou arangés, ou terminés pour faire un sens.<sup>19</sup>

Most important for us are the observations that alphabetical signs are universal (showing the limited linguistic experience of the author, although it was certainly extensive for his time), and that word order (or noun declension) conveys the true sense of the phrase.

Beauzée, Du Marsais's successor among the Encyclopaedists, continued to present universal grammar theory in his contributions to the dictionary. In "Langue," perhaps his most important article, he proposes that language exhibits a universal analytical order which reflects the arrangement of thoughts in the mental processes of rational man:

La parole en effet doit être l'image sensible de la pensée, tout le monde en convient; mais toute image sensible suppose dans son original des parties, un ordre & une proportion entre ces parties; ainsi il n'y a que l'analyse de la pensée qui puisse être l'objet naturel & immédiat de l'image sensible que la parole doit produire dans toutes les langues; & il n'y a que l'ordre analytique qui puisse régler l'ordre & la proportion de cette image successive & fugitive. Cette règle est sûre, parce qu'elle est immuable, comme la nature même de l'esprit humain, qui en est la source & le principe.<sup>20</sup>

Languages exhibit vastly different forms, he says, because usage, which

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<sup>19</sup>P. 7.

<sup>20</sup>Encyc., IX, 257.

is determined by impersonal, exterior influences,<sup>21</sup> allows variations of many types: "Tout est usage dans les langues; le matériel & la signification des mots, l'analogie & l'anomalie des terminaisons, la servitude ou la liberté des constructions, le purisme ou le barbarisme des ensembles."<sup>22</sup> Interjections, which are the most natural and least constrained of linguistic expressions, show a continuity which overcomes more superficial regional differences.<sup>23</sup> In a word, Beauzée, following Du Marsais's lead, advanced throughout the concluding volumes of the Encyclopédie the theory of the universal structure of human reason and human speech, while tempering it with a perspicacious relativism which recognizes the multiform influences of geographic and social factors.

The président de Brosses, author of the Traité de la formation mécanique des langues, sees in the universally shared human voice mechanism yet another reason for declaring that speech has a universal basis:

. . . il existe une langue primitive, organique, physique & nécessaire, commune à tout le genre humain, qu'aucun peuple au monde ne connoît ni ne pratique dans sa première simplicité; que tous les hommes parlent néanmoins, & qui fait le premier fond du langage de tous les pays:

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<sup>21</sup>Du Marsais had already specified these influences in "Alphabet" (Encyc., I, 295): "C'est le concours d'un grand nombre de circonstances différentes qui a formé ces diverses langues: le climat, l'air, le sol, les alimens, les voisins, les relations, les Arts, le commerce, la constitution politique d'un état; toutes ces circonstances ont eu leur part dans la formation des langues, & en ont fait la variété."

<sup>22</sup>"Langue," Encyc., IX, 249.

<sup>23</sup>Ibid., p. 253. Other Encyclopaedists note the universality of interjections: Jaucourt in "Langage" (IX, 242) and "Figure (Logiq. Métaphys.);" Cahusac in "Chant" (III, 141) and "Geste" (VII, 651); d'Alembert in "Caractere" (II, 645).



fond que l'appareil immense des accessoires dont il n' [sic] est chargé laisse à peine appercevoir.<sup>24</sup>

This universal mechanism results in the tendency, which Turgot mentions,<sup>25</sup> to denote certain things by using certain sounds. For example, many languages have words for "father" which begin with "p" ("pater," "papa") and for "mother" beginning with "m" ("Mutter," "mama"). This is because these sounds are the easiest for the young child to pronounce, and he attaches them to those beings which are closest and most essential to him. A profusion of words signifying "breast" beginning with "b" reinforces the theory. Voltaire specifically opposes these ideas, and provides many examples which indicate that no such universal propensity exists.<sup>26</sup> It should be remembered, however, that Voltaire was about this time having a quarrel with Bosses over a financial matter,<sup>27</sup> and his opinions may have been coloured by a desire to contradict his adversary.

Antoine Court de Gébelin summed up these theories in his Le monde primitif. Universal grammar is perceived first by studying many languages and noting their similarities:

Ceux qui sont dans le cas d'étudier un grand nombre de Langues, ne tardent pas à s'apercevoir que les Grammaires particulieres de toutes ces Langues, ont un fonds commun par lequel elles se ressemblent; & que lorsqu'on en a appris une, on a beaucoup moins de peine

<sup>24</sup>Pp. xv-xvi.

<sup>25</sup>Réflexions sur les langues, in Oeuvres de Turgot, I, 353.

<sup>26</sup>Article "Langues," in Dictionnaire philosophique, Oeuvres complètes de Voltaire, ed. Louis Moland (Paris: Garnier, 1877-85), XIX, 553-554.

<sup>27</sup>Hippolyte Sautubin, Un linguiste français du dix-huitième siècle, le président de Bosses, pp. 16-18.

à apprendre les autres.

C'est ce fonds commun qui forme la Grammaire Universelle, qui la constitue.

Antérieure à toute Grammaire particulière, elle les anime toutes, les dirige toutes, est le fondement nécessaire de toutes.<sup>28</sup>

However once the order is perceived, it may be seen to originate in "Nature," which in this case means universal human characteristics, physical and mental:

Puisée dans la Nature, toujours la même, toujours invariable, & modèle de tout ce que les Hommes exécutent, cette Grammaire Universelle existe indispensablement pour eux, dès qu'ils veulent peindre leurs idées: elle leur dicte impérieusement ses loix; & tandis qu'ils se croient libres à cet égard, qu'ils s'imaginent être les Créateurs de l'art de peindre leurs idées, ils obéissent aux règles invariables que leur prescrit la Nature.<sup>29</sup>

Ferdinand Brunot has noted that the unquestioning acceptance during the eighteenth century of universal grammar theory resulted in considerable critical sterility concerning this subject. It always took on the character of "inutile spéculation."<sup>30</sup> Although such docility is surprising in a century during which so much that had been traditional and accepted was finally questioned, there are two reasons why thinkers did not challenge universal grammar. First, the grammairiens philosophes based their observations on a fairly restricted group of languages, following the lead of Lancelot and Arnauld:

<sup>28</sup> Le monde primitif . . ., II, 7.

<sup>29</sup> Ibid.

<sup>30</sup> Brunot, Histoire de la langue française des origines à nos jours, VI, 908.

The Port Royal grammarians made a genuine attempt to write a general grammar. Drawing examples from Latin, Greek, Hebrew, and modern European languages, they sought to refer them to alleged universal characteristics of language, underlying them. A wider knowledge of non-European languages does not appear to have interested them, or they might have revised their classical framework more radically.<sup>31</sup>

It was not until oriental languages began to be investigated that theories of language groups (such as the family we now know as Indo-European) provided a better explanation for some obvious parallels in Greek, Latin, French, and German. The second reason was that eighteenth-century linguistic theory did not in general seek to provide descriptive tools but rather explanatory ones. The deep-seated rationalism of most critics did not prompt them to step outside a group of theories which, by setting up principles from which specific rules could be deduced, satisfied their immediate needs.

An outgrowth of universal grammar theory which is of some interest to us here is the theory that all modern languages have evolved, as did ancient languages before them, from a single primitive tongue. Some critics, in the eighteenth century and long before, believed this "mother language" to be Hebrew. The Alexandrian Jews were of this opinion, and passed it on to Saint Jerome and Isidore of Seville.<sup>32</sup> As we saw in Chapter II, proponents of the orthodox theory of word origins also believed Hebrew to be the first language. But in the Encyclopédie the theory received effective criticism, based on

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<sup>31</sup>R.H. Robins, A Short History of Linguistics (London: Longmans, Green and Co., 1967), p. 125.

<sup>32</sup>Maurice Leroy, Main Trends in Modern Linguistics, trans. Glanville Price (Berkeley, Los Angeles: University of California Press, 1967), p. 7.

knowledge of other Middle Eastern languages. In "Hébraïque (Langue)," Boulanger<sup>33</sup> makes the following declaration, obviously aimed at those who claim that Hebrew is of divine origin:

La langue hébraïque est une langue humaine, ainsi que toutes celles qui se sont parlées & se parlent ici bas; comme toutes les autres, elle a eu son commencement, son regne & sa fin, & comme elles encore, elle a eu son génie particulier, ses beautés & ses défauts.<sup>34</sup>

In his article he further discusses the origin of Hebrew, its golden age, and its decline; the treatment is objective, and based on a close study of texts. Voltaire, eagerly equating any criticism of the Jews with a criticism of ecclesiastical authority, makes the following additions to Boulanger's statements:

Je viens de lire l'article "Langue hébraïque" suivant votre bon conseil; il est savant et philosophique. L'auteur n'a pas osé tout dire. Il est incontestable que l'hébreu était anciennement un dialecte de la langue phénicienne. Les Hébreux appelaient la Phénicie le pays des savants; et une grande preuve qu'ils n'ont jamais habité en Egypte c'est qu'ils n'ont jamais eu un seul mot égyptien dans leur langue, ou plutôt dans leur misérable jargon.<sup>35</sup>

And in the Questions sur l'Encyclopédie his assessment of the origins of the Hebrew language is scalding: "Leur langue était un mélange barbare d'ancien phénicien et de chaldéen corrompu."<sup>36</sup> In general Voltaire sidesteps the question of whether or not a "mother language" ever existed by postulating a continuous borrowing among neighbour

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<sup>33</sup>René Hubert attributes this article to him (Les sciences sociales dans l'Encyclopédie, p. 329).

<sup>34</sup>Encyc., VIII, 83.

<sup>35</sup>Letter to Marmontel, April 23, 1766, in Voltaire's Correspondence, ed. T. Besterman (Genève: Institut et Musée Voltaire, 1953-65), LXI, 48-49.

<sup>36</sup>Oeuvres complètes de Voltaire, XVII, 54.

nations:

Il n'y a point de langue mère. Toutes les nations voisines ont emprunté les unes des autres; mais on a donné le nom de "langue mère" à celles dont quelques idiomes connus sont dérivés. Par exemple, le latin est langue mère par rapport à l'italien, à l'espagnol, au français; mais il était lui-même dérivé du toscan, et le toscan l'était du celte et du grec.<sup>37</sup>

Again reaction to the theory of mother languages was lukewarm, because such a reaction served no purpose in clarifying the rationalistic conception of the linguistic universe. Except for Voltaire, and he has, as we have seen, other reasons for putting forward the opinions that he does, the theory in general receives little direct criticism. As we shall see in Chapter V, d'Alembert and most of his fellow philosophers, in France and elsewhere, preferred to believe that universal language, in an artificial form, was indeed possible, and that the creation of a new language to be understood by all would be desirable for communicating to everyone the fruits of their researches.

#### D'Alembert and the Structure of the Propositional Statement

Considerable space has been devoted so far in this chapter to exposing the principal theses of eighteenth-century grammar theory; I have concentrated on the conception, current in that period, of the influence of logical thought on the form of the propositional statement. With this background we can now better understand d'Alembert's own ideas in this realm.

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<sup>37</sup>Ibid., XIX, 566.

In the Elémens de philosophie d'Alembert states that a propositional statement is "un jugement énoncé."<sup>38</sup> That is to say that the sentence expresses, through audible signs, the constituent elements and final result of a conscious, creative mental operation. In Chapter II we considered the linguistic elements which take part in such an operation. We saw to what extent d'Alembert insists on clear definitions of the elements he uses. Thus armed, he now proceeds to a more demanding task. He combines the linguistic elements he has so carefully defined; he formulates new results from their combinations, and judges the results. The propositional statement, like the word, is a tool for searching out new facts and thus extending the bounds of knowledge.

Those mental operations which sentence structure reflects must depend, to be of even the least value, on certain well-defined rules. The judgment expressed by the sentence must be made with due respect for the rules and procedures of logic. D'Alembert outlines these procedures, stressing their utilitarian nature, in the Discours préliminaire:

L'avantage que les hommes ont trouvé à étendre la sphere de leurs idées, soit par leurs propres efforts, soit par le secours de leurs semblables, leur a fait penser qu'il seroit utile de réduire en art la maniere même d'acquérir des connoissances, & celle de se communiquer réciproquement leurs propres pensées; cet art a donc été trouvé, & nommé Logique. Il enseigne à ranger les idées dans l'ordre le plus naturel, à en former la chaîne la plus immédiate, à décomposer celles qui en renferment un trop grand nombre de simples, à les envisager par toutes leurs faces, enfin à les présenter aux autres sous une forme qui les leur rende faciles à saisir. C'est en cela que consiste cette

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<sup>38</sup>Oeuvres, I, 237.

science du raisonnement qu'on regarde avec raison comme la clé de toutes nos connoissances.<sup>39</sup>

It is to be stressed that these verbs "ranger," "former," "décomposer," "envisager," and "présenter" are all verbs which describe in this case linguistic operations; in carrying out all these procedures the logician is working with word-symbols.

In the Elémens de philosophie, published eight years after the appearance of the first volume of the Encyclopédie, d'Alembert does not hesitate to assign to logic an instinctive origin. This book, which reflects in so many ways d'Alembert's mature thought (he was 41 when it first appeared), was written without the limitations imposed by the nature of the Discours préliminaire. While writing the preface d'Alembert was restricted first of all by its aim, which was to set out the purpose of the project and provide a brief justification for its form, and also by its length. These limitations did not permit him to describe a less conscious, deliberate origin for logical principles, as he could in the Elémens:

La faculté de juger, ainsi que celle de sentir, s'exerce en nous dès que nous commençons à exister; à peine un enfant a-t-il des sensations qu'il les compare, qu'il connaît ce qui lui est utile ou nuisible, et par conséquent qu'il juge. Il y a donc en nous une logique naturelle et comme d'instinct, qui préside à nos premières opérations, et que le philosophe doit supposer.<sup>40</sup>

Logic is a gift of nature; logical principles are innate. For d'Alembert, then, as for so many other eighteenth-century writers on

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<sup>39</sup>Encyc., I, ix.

<sup>40</sup>Oeuvres, I, 235.

universal grammar, the ideas of basic reasoning processes are present in all men as inheritors of a universal human essence.

In the Discours préliminaire d'Alembert states that grammar is a part of logic:

Eclairée par une Métaphysique fine & déliée, [la grammaire] démêle les nuances des idées, apprend à distinguer ces nuances par des signes différens, donne des regles pour faire de ces signes l'usage le plus avantageux, découvre souvent par cet esprit philosophique qui remonte à la source de tout, les raisons du choix bizarre en apparence, qui fait préférer un signe à un autre, & ne laisse enfin à ce caprice national qu'on appelle usage, que ce qu'elle ne peut absolument lui ôter.<sup>41</sup>

Grammar and logic are thus closely allied, but grammar serves logic by dealing directly with the words of a language and imposing the rules of logic on them. Usage is to be given only the absolute minimum of credit for determining the rules of a language; they must rather be deduced from logical principles.

D'Alembert emphasizes in the Elémens the rôle of grammar and logic in formulating useful rules that are universally applicable:

Mais une autre science qu'il ne faut pas séparer de la logique et de la métaphysique, et qui appartient essentiellement à l'une et à l'autre, c'est la grammaire ou l'art de parler. D'un côté la formation des langues est le fruit des réflexions que les hommes ont faites sur la génération de leurs idées; et de l'autre le choix des mots par lesquels nous exprimons nos pensées, a beaucoup d'influence sur la vérité ou sur la fausseté des jugemens que nous portons, ou que nous faisons porter aux autres.<sup>42</sup>

Metaphysics in this case is limited to seeking out the origins of our

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<sup>41</sup>Encyc., I, x.

<sup>42</sup>Oeuvres, I, 235-236.



ideas and thus concerns itself with the formation of linguistic elements. But logic permits the thinker to speak well and to work at extending the limits of truth. Once again the Elémens exhibit a less restrained and more optimistic view of intellectual activity than the Discours préliminaire.

D'Alembert accepts, then, the theory of universal grammar. Faith in reason, the common heritage of all men, necessarily includes belief in the universality of the grammar rules which it determines. In "Caractere," which appeared early in 1752, d'Alembert asserts that all languages are descended from one primitive idiom, born among the frail structures of primitive society. Since that far-off time, diversification of man's environment has resulted in the linguistic differences we observe today:

Les hommes qui ne formoient d'abord qu'une société unique, & qui n'avoient par conséquent qu'une langue et qu'un alphabet, s'étant extrêmement multipliés, furent forcés de se distribuer, pour ainsi dire, en plusieurs grandes sociétés ou familles, qui séparées par des mers vastes ou par des continens arides, ou par des intérêts différens, n'avoient presque plus rien de commun entr'elles. Ces circonstances occasionnerent les différentes langues & les différens alphabets qui se sont si fort multipliés.<sup>43</sup>

To be noted here are the secular, human origin of the mother language, and the physical causes for changes in languages. As in his assertions on other linguistic matters, d'Alembert in this one says nothing new. But to be noted is the precise place he gives to these theories in the formulation of a more all-embracing theory of knowledge.

In the seventh volume of the Encyclopédie (1757) is found

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<sup>43</sup> Encyc., II, 645.

d'Alembert's "Eloge de Du Marsais." While occupied primarily with Du Marsais's exemplary life and religious works, d'Alembert also underlines the essential elements of the grammarian's language theory. Original language was, according to Du Marsais, a confused mass of unconnected elements:

Les Langues, formées d'abord sans principes, ont été plus l'ouvrage du besoin que de la raison; & les Philosophes réduits à débrouiller ce cahos informe, se sont bornés à en diminuer le plus qu'il étoit possible l'irrégularité, & à réparer de leur mieux ce que le Peuple avait construit au hasard . . . .<sup>44</sup>

The idea that language is the product of need rather than reason is here more Du Marsais's idea than d'Alembert's, but d'Alembert stresses the philosopher's rôle in purifying and stabilizing the language. His rules are normative rather than descriptive. He sees as products of the corruption of man's reason the caprices of usage in any one language and the diversity of all of mankind's linguistic effort. To search amid this modern chaos for long-lost primeval principles is indeed the task of a philosopher:

L'étude & l'usage suffisent pour apprendre les regles, & un degré de conception ordinaire pour les appliquer; l'esprit philosophique seul peut remonter jusqu'aux principes sur lesquels les regles sont établies, & distinguer le Grammairien de génie du Grammairien de mémoire. Cet esprit apperçoit d'abord dans la Grammaire de chaque Langue les principes généraux qui sont communs à toutes les autres, & qui forment la Grammaire générale; il démêle ensuite dans les usages particuliers à chaque Langue ceux qui peuvent être fondés en raison, d'avec ceux qui ne sont que l'ouvrage du hasard ou de la négligence.<sup>45</sup>

What d'Alembert's "Eloge" reveals most clearly is that he

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<sup>44</sup>Encyc., VII, viii.

<sup>45</sup>Ibid.

considers universal grammar to be a useful teaching tool (as the Port Royal grammarians knew so well). By supposedly establishing a common basis for all languages it sets the stage for unlimited communication of knowledge, an aim which the very word "Enlightenment" implies. Universal grammar is a rationalist structure: from clear, universal principles all the diversity of familiar phenomena can ideally be deduced. And its basic assumption is rationalist as well: that a uniform order in the human mind is universally innate. Any statement based on this order should be accepted and unreservedly recognized as true by all members of our species.

#### Inversion

D'Alembert, as we have seen from our consideration of universal grammar theories, held that the structure of word combinations reflects the order of our thoughts. Words, then, as well as thoughts, must obey the rules of logic. Elements of a sentence must be carefully defined, and complex ideas must be broken down into simple, recognizable constituent parts before new combinations involving them can be attempted. Language, which according to this conception is so much like mathematics, must obey certain fixed rules for universally true and accessible statements to be formulated.

D'Alembert questions in considerable depth whether one word order in a given sentence is to be preferred over another. Is inversion possible, he asks? Do the habitual word patterns of French, or Latin, or indeed any language accurately reproduce the pattern of our thoughts? D'Alembert provides answers to these questions especially in the "Eclaircissemens" to the Elémens de philosophie,

published for the first time in the 1767 edition of the Mélanges. The criterion by which d'Alembert always makes judgments in this matter is that of clarity. Clear expression and the logical ordering of words must be preserved for thoughts to be effectively communicated to others, and indeed profitably pursued in the speaker's or writer's own mind.

D'Alembert insists that words should follow the order of the thoughts they represent. Thus the whole question of inversion hinges on the logical ordering of the words the thinker uses to express his meditation:

Il ne peut y avoir d'inversion proprement dite, que dans le cas où l'ordre des mots d'une proposition diffère de l'ordre des idées que ces mots expriment. La question de l'inversion consiste donc à savoir suivant quel ordre les idées renfermées dans une proposition se présentent à l'esprit de celui qui l'énonce.<sup>46</sup>

Here in the original text of the Eléments d'Alembert is exploring the very basis of the linguistic phenomenon. For him, language derives all its value from the exactitude of its correspondence with the order of our ideas.

In an elaboration of the problem, contained in the "Eclaircissements," d'Alembert suggests a synonym for "inversion":

Tout discours est composé de mots; chacun de ces mots exprime une idée; l'ordre naturel des mots dans le discours est donc celui que les idées doivent avoir dans l'énonciation. Lorsque l'ordre des mots ne sera pas conforme à celui suivant lequel les idées doivent être énoncées, il y aura pour lors dans le discours ce qu'on appelle "inversion," c'est-à-dire "renversement."<sup>47</sup>

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<sup>46</sup> Oeuvres, I, 237.

<sup>47</sup> Ibid., p. 246.

To permit this reversal is thus in a sense to tolerate disorder in the expression of the mind's operation. In the pages which d'Alembert devotes to the problem he aims at deciding what constitutes these chaotic moments, and which ones cannot be avoided.

Our ideas do not occur in the mind in a linear fashion, as do words in speech or writing. They come to us in groups which are separable, but linked by our line of reasoning:

D'abord il est évident que si on ne prend pas les idées une à une, mais plusieurs à la fois, et, pour ainsi dire, par masses séparées et distinctes, ces idées, ou plutôt ces masses d'idées, doivent garder entre elles un ordre que l'esprit le plus commun aperçoit aisément . . . .<sup>48</sup>

It may be noted here that this idea is also expressed by Diderot in his Lettre sur les sourds et muets:

. . . je soutiens que quand une phrase ne renferme qu'un très-petit nombre d'idées, il est fort difficile de déterminer quel est l'ordre naturel que ces idées doivent avoir par rapport à celui qui parle. Car si elles ne se présentent pas toutes à la fois, leur succession est au moins si rapide, qu'il est souvent impossible de démêler celle qui nous frappe la première.<sup>49</sup>

For both philosophes the elements of a sentence may thus be conceived in the mind in such a fashion that they do not have a distinguishable order. Grammar rules must intervene at this point and bring logic with them. If clarity is achieved by following one order, then it must be adopted. If not, then the order which common usage dictates is acceptable, provided that it does not decrease the clarity of the

<sup>48</sup> Ibid.

<sup>49</sup> Diderot, Lettre sur les sourds et muets, ed. Paul Hugo Meyer, Diderot Studies, VII (1965), 60.

expression.

However the principal criterion for determining correct sentence order remains for d'Alembert the order of our ideas. Rules of syntax must not contradict rules for the structure of thought. Considering a popular example, the exhortation "serpentem fuge,"<sup>50</sup> d'Alembert claims that it is a case where the object can legitimately precede the verb, instead of following it, as is normal. Here the idea of the presence of the snake is more important than the idea of flight, so "serpentem" may be placed before "fuge." In other words the inversion is permitted because the actual order of ideas opposes the grammatical order.<sup>51</sup>

The best form remains the one which follows both orders, the order of syntax and the order of our ideas:

. . . la seule énonciation parfaite serait celle où ces deux différens ordres [l'ordre grammatical et l'ordre des idées] seraient parfaitement d'accord entre eux; et . . . il faudrait choisir . . . une manière de s'exprimer qui conciliât l'arrangement grammatical avec l'ordre des idées.<sup>52</sup>

Syntactic rules supposedly aid in expressing thoughts in a clear, well-ordered fashion. But in practice this is not always necessarily

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<sup>50</sup>D'Alembert treats this example in an "Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 255-257. Diderot also considers it, in the Lettre sur les sourds et muets, p. 59. He in turn took it from the abbé Batteux's Cours de belles lettres distribué par exercices (see P.H. Meyer's notes to Diderot's Lettre, pp. 145-146).

<sup>51</sup>Diderot's opinion on the matter is that the judgment of whether the statement is an inversion or not is relative to one's point of view. For the grammarian "serpentem fuge" is an inversion; for a man warning his companion that he is near a snake, it is not.

<sup>52</sup>Oeuvres, I, 257.

the case.

Syntactic rules are, according to the grammairiens philosophes, normative in nature. They do not describe the state of the language, but rather direct the speaker to formulate his sentence along the lines of an accepted model. (However we know that in reality the rules of syntax are descriptive; even d'Alembert says they can be broken to preserve logical order.) In French, the rules of good sentence order are often applied to structures whose thought elements did not necessarily occur in any particular sequence:

Cette règle de syntaxe sur l'arrangement des termes à laquelle la langue française est obligée de s'assujétir en certains cas pour fixer le rapport des mots et le sens de la phrase, elle l'a étendue . . . aux autres cas où cet arrangement serait moins nécessaire; il semble que nos pères, forcés par la nature de la langue d'en gêner la construction en certains cas, aient voulu, par une espèce de dépit, s'il est permis de parler de la sorte, la gêner sans besoin dans tous les autres.<sup>53</sup>

French derives its precision from this tyranny of rules; it is marked by a "caractère de timidité, ou, si l'on veut, de sagesse qui lui est propre."<sup>54</sup>

Other languages express the order of thoughts in different ways. In "Langue,"<sup>55</sup> Beauzée compares French and other modern southern

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<sup>53</sup>Ibid., pp. 258-259.

<sup>54</sup>Ibid., p. 259. This judgment should be compared to Diderot's (Lettre sur les sourds et muets, p. 67): "Le françois est fait pour instruire, éclairer & convaincre; le grec, le latin, l'italien, l'anglois pour persuader, émouvoir & tromper; parlez grec, latin, italien au peuple, mais parlez françois au sage."

<sup>55</sup>Encyc., IX, 258.

European languages to German on the one hand, and to Greek and Latin on the other. French, Spanish, and Italian have no declensions and are thus grouped together as "langues analogues" (word order in a sentence is determined by analogy with models). Languages in which nouns are declined, the "langues transpositives," are divided into the "langues transpositives libres" such as Greek and Latin, where word order is very free, and "langues transpositives uniformes" such as German, where there are still rules to govern sentence order. This system of classification is much more detailed than anything d'Alembert put forward, but the difference in the nature of these groups of languages concerned him as well.

The whole problem of inversion results from the lack of noun declension in French:

La langue française n'ayant point de cas ni même de manière différente d'exprimer ce que les Latins et les Grecs appellent le "nominatif" et "l'accusatif," il est nécessaire, pour la clarté du discours, que le rapport des mots soit déterminé par l'ordre qu'ils observent, sans quoi il pourrait y avoir équivoque et même contre-sens.<sup>56</sup>

He analyses in great detail the example "Alexander vicit Darium."<sup>57</sup> Giving a list of all the possible combinations of the words in this phrase, he shows how the sense changes in French when the word order is changed.<sup>58</sup>

<sup>56</sup>D'Alembert, Oeuvres, I, 252.

<sup>57</sup>Condillac uses the same example in the Essai sur l'origine des connoissances humaines (Part II, Section I, Chap. xii, par. 117), in Oeuvres philosophiques de Condillac, I, 92.

<sup>58</sup>D'Alembert, Oeuvres, I, 247-248, 252-254.



Having thus elaborated the whole question, d'Alembert then states some basic principles to determine how freely one may choose the order of one's words, while still maintaining high standards of clarity and precision. These principles are specific: "Le verbe ou ce qui exprime l'affirmation ne doit jamais commencer la phrase";<sup>59</sup> "Le sujet, exprimé par un mot appelé 'substantif,' doit être placé avant l'attribut, exprimé par un mot appelé 'adjectif'."<sup>60</sup> In the same way he points out circumstances where a specific order is not necessarily followed:

La grammaire française, qui exige par nécessité que le verbe soit placé avant le régime, et par analogie qu'il le soit avant l'adjectif, n'a point eu de raison semblable pour exiger que l'adverbe fût placé après le verbe, ou après le régime du verbe.<sup>61</sup>

In short, there is one basic rule to which the others may be reduced: "L'ordre naturel demande que les mots qui sont amenés soient à la suite de ceux qui les amènent."<sup>62</sup> The sentence must develop the first idea which the reader or listener encounters:

Les mots doivent être placés dans un tel ordre, qu'en finissant la phrase où l'on voudra, elle présente, autant qu'il est possible, un sens ou du moins une idée complète qui n'en suppose point nécessairement d'autre; en sorte que les mots, à mesure qu'on les prononce, soient des modificatifs des mots qui les précèdent, et par conséquent supposent l'idée que les mots précédens expriment, sans que ces mots

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<sup>59</sup>Ibid., p. 251.

<sup>60</sup>Ibid.

<sup>61</sup>Ibid., p. 254.

<sup>62</sup>Ibid., p. 252.

précédens supposent nécessairement l'idée que les modificatifs y ajoutent.<sup>63</sup>

Syntactic rules thus guide the writer or speaker by establishing the necessary order of words. Whereas in some cases inversion is forbidden by the rules of logic, in other cases it is allowed. The principle to be borne in mind, and here again we meet the central message of the Elémens de philosophie, is that the drive for clarity and simplicity should guide our decision.

#### Conclusion

We have studied the concept of universal grammar in this chapter with the aim of showing the elements that d'Alembert used in formulating his own methodological counsels. Through the years separating the Discours préliminaire from the "Eclaircissemens" to the Elémens de philosophie, these counsels become more and more specific, and more and more oriented towards stressing the utility of his methods. D'Alembert's intellectual development thus follows the rationalist principles he sets up for others: to gain sure knowledge one must proceed from the general to the specific, from the principle to particular cases.

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<sup>63</sup>Ibid., p. 253.

CHAPTER IV  
RATIONALISM AND EMPIRICISM:  
ANALYSIS AND SYNTHESIS

Introduction

In the preceding two chapters we have considered static elements of language and their simplest combinations. The rationalist influence in these two domains has been especially noteworthy; according to d'Alembert, a word, a principle, and the order of words in a propositional statement must all proceed from clear and distinct mental conceptions. But, as I hope to show, there exist as well in this rationalist conception of language, elements of an empiricist nature, elements derived from the philosophy of the primacy of simple sense experience. Here, as elsewhere in d'Alembert's thinking, rationalism and empiricism complement one another by an exchange of methods and techniques.

First of all, according to d'Alembert and his contemporaries, the meanings given to words can be traced back to sense experience. A word, seen as the sign of an idea, be it a sign of either conventional or natural origin, exists ideally for them as a fixed point in the store of ideas. Once it has been defined, it is so determined forever; its place in the dictionary is assured. From this fixed word, numberless synonyms and nuances can develop, but the original word remains and presents a general meaning common to all the nuanced and synonymic forms. But we must bear in mind that Locke taught his eighteenth-

century followers that each idea which we possess, whether it is simple or complex, derives from information gleaned from sense experience. Since words are according to them the signs of such ideas, words are thus all in the final analysis derived from information provided by our senses. Although a word is regarded as a fixed entity, it originates in sensation.

D'Alembert's conception of the principle is similar. According to him, principles resemble words in that principles too represent clear, simple, fundamental thoughts, rich in implications. As the central idea of any science, the principle states a very general case, from which the whole hierarchy of particular cases descends. But in reality principles are formulated only after a long series of abstractions from these same particular cases. Principles, like words, do not exist before the power of abstraction is brought into play. From phenomena, from isolated sensations, from elementary ideas, the simplest, most universal statement is formulated.

Propositional statements are, as we have seen in the last chapter, the reflection of an internal mental order in mankind in general, or a universal logic which orders and classifies ideas. While grammar, in the eighteenth century, was supposed to be of this normative nature, at that time, as before and since, it was really a descriptive, empirical science. Contemplating what is originally a linguistic chaos, the grammarian's task really consists of seeking out cases of similar usage, basing a rule on them, extending the rule to other cases, and formulating new rules when the old ones no longer

serve to guide him.<sup>1</sup> According to universal grammar theory, these rules mirror the very structure of the human mind; but we know that they cannot be born in vacuo.

In even these elementary considerations of a language theory, the meeting of rationalist and empiricist methods can be seen. The two basic reasoning processes which rationalism and empiricism represent are both of extreme importance in d'Alembert's abstract conceptions of science, epistemology, and the accumulation and communication of knowledge. Matters of language cannot be separated from these other questions. D'Alembert's philosophy, that is to say his aims, methods, and criteria, are imposed upon and perpetuated in all the various fields of his interest; his linguistic conceptions may be perceived in the method he uses in all his diverse activities. From another point of view, the theory of language which he provides can be considered as the reflection and quintessence of his most general theories of knowledge.

In this chapter I shall first of all consider how empiricism and rationalism are combined in d'Alembert's idea of the structure of knowledge. Since these two schools of thought are separated in his work only when he wishes to discuss in an abstract manner a specific way of looking at the universe, I shall not separate them until after their intimate links have been stressed.

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<sup>1</sup>An extreme case, Greek verb conjugations, shows very strikingly the subjectivity of grammar rules. The rather obscure verb "λύω," meaning "I loosen," is the only regular one; all the others present at least in some detail exceptions to the pattern this verb provides.

### Analysis and Synthesis in Harmony and Conflict

Rationalism and empiricism, in the sense of formal philosophical attitudes about the nature of things, coexist in d'Alembert's thought; they are both bound up in his theory of the structure of knowledge. This may seem at first glance to be a paradoxical conflict, a confused coming and going from one belief (for each is in a sense a belief) to another which is its opposite. On one hand, for example, he stresses the irreplaceable character of a simple, fertile principle, for developing or communicating a body of knowledge. But on the other hand, the importance of a continual contact with reality, with the empirical, is brought out. If we examine these two thought processes carefully, we find that in the very nature of rationalism there is an empiricist element, and vice versa. Analysis and synthesis are for d'Alembert ways of moving about within the structure of knowledge and are inseparable.

Rationalism is an essentially linguistic conception. According to the rationalists, each idea which we possess has its word-sign; more general ideas are represented by more abstract signs. The principles of rationalism, as d'Alembert presents them, express the essence of some relationship which is either perceived, as in a theory of the structure of knowledge, or imposed, as in mathematics. Without the intermediary of language, either spoken or written (and this latter classification includes such languages as the system of algebraic signs), these relationships would always remain to be discovered and would never receive a concrete form which could survive the moment of perception and subsequent annihilation. Synthesis, which consists of

proceeding from the general case to the specific, these terms being understood in a comparative sense, presupposes the value and fertility of basic principles. This value and fertility must be guaranteed either by some divinity, as for Descartes, or from faith in the existence of the reality we perceive. For d'Alembert, faith in clear and distinct ideas is rather of the latter sort. The link with the empirical cannot be broken. Order in the universe depends on the linguistic handling of the ideas furnished by the senses.

Abstraction, or analysis, is opposite to the movement from general to specific cases. D'Alembert is very insistent on this point; for him abstraction is one of the most characteristic abilities of the human mind. In the Discours préliminaire he emphasizes the close link between the power of abstraction and the accumulation of words in an individual lexicon:

. . . l'ordre de la génération des mots a suivi l'ordre des opérations de l'esprit: après les individus, on a nommé les qualités sensibles, qui, sans exister par elles-mêmes, existent dans ces individus, & sont communes à plusieurs: peu-à-peu l'on est enfin venu à ces termes abstraits, dont les uns servent à lier ensemble les idées, d'autres à désigner les propriétés générales des corps, d'autres à exprimer des notions purement spirituelles.<sup>2</sup>

The power of abstraction is for d'Alembert, as Maurice Muller has noted, an innate faculty,<sup>3</sup> which even the purest sensationalism is obliged to admit. It is a power which operates without our knowing it, creating a surprising variety of words to designate shared qualities:

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<sup>2</sup>Encyc., I, x.

<sup>3</sup>Muller, Essai sur la philosophie de Jean d'Alembert, p. 257.

. . . il y a dans les langues bien plus de mots qu'on ne croit, qui expriment des idées abstraites; de ce nombre sont tous les mots dont on se sert pour exprimer une qualité ou une manière d'être qui est commune à plusieurs individus, et qui peut être différemment modifiée dans chacun de ces différens individus. Plus la qualité ou la manière d'être qu'on exprime est commune à un grand nombre d'individus, plus l'idée qui l'exprime est abstraite . . . .<sup>4</sup>

In this way we proceed from phenomena to principles.

Rationalism and empiricism, according to d'Alembert, cannot be considered as distinct points of view in the search for knowledge. First one, then the other comes into play. We advance; we retreat by another route; we finally succeed in exploring the whole terrain in question. Both principles and fundamental details are clearly understood and put in their places. When d'Alembert calls this method the "méthode analytique," he is not implying that "analytique" is the opposite of "synthétique"; he is rather considering analysis and synthesis as the two possible ways of moving about within the structure of knowledge, and labels their combined use the "méthode analytique":

On ne peut douter que cet ordre ne soit en général le plus avantageux à suivre; parce qu'il est le plus conforme à la marche de l'esprit, qu'il éclaire en instruisant, qu'il met sur la voie pour aller plus loin, & qu'il fait pour ainsi dire pressentir à chaque pas celui qui doit le suivre: c'est ce qu'on appelle autrement la "méthode analytique," qui procède des idées composées aux idées abstraites, qui remonte des conséquences connues aux principes inconnus, & qui en généralisant celles-là, parvient à découvrir ceux-ci . . . .<sup>5</sup>

The most characteristic element of d'Alembert's philosophy is this constant shifting from the rationalist to the empiricist viewpoint

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<sup>4</sup>Elémens de philosophie, Oeuvres, I, 139.

<sup>5</sup>"Elémens des sciences," Encyc., V, 495.



and back again. By bringing together the fruitful methods of two opposing systems d'Alembert shows himself to be both pragmatic and eclectic.

The thinking mind proceeds in this way from thought to thought. The basic idea behind any progressive step, especially in science, is not invention, but rather discovery. The structure of the body of all knowledge, including that which has not yet been discovered, includes both principles and phenomena. Each has its place in the chain: elementary information, abstractions which are the result of analysis, and principles which are the most general abstractions of them all. Thus we see an essentially static conception of knowledge: facts exist, perhaps unknown to us, which permit us to cross the empty space between two separated phenomena. The rationalist presupposes this order; the empiricist does as well, but looks at it from the opposite direction. Thus, the two processes by which we may reason derive from the relationships existing between distinct facts, rather than from two processes which our brain has the potential to perform. This is why the eighteenth century (and concerning this aspect d'Alembert is a central figure) was paradoxically rationalist and empiricist at the same time: "Empirique, elle [la pensée du dix-huitième siècle] a professé qu'il n'y avait aucun a priori dans notre âme; et rationaliste, elle a cru à l'a priori de la raison."<sup>6</sup> These two philosophical positions, however, represent methodological extremes; between them the philosopher can tend towards either method as circumstances dictate.

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<sup>6</sup>Paul Hazard, La pensée européenne au XVIII<sup>e</sup> siècle de Montesquieu à Lessing (Paris: Boivin, 1946), II, 38-39.

D'Alembert was at the very centre of the mathematical activity of his age, and especially of that part of mathematics closely related to theoretical mechanics. His deep personal involvement in these scientific matters allowed him to observe the relations between rationalist and empiricist procedures and to incorporate into many of his methodological statements the idea of the coexistence of the two methods. The Discours préliminaire, the Elémens de philosophie, and numerous articles in the Encyclopédie all testify to d'Alembert's privileged position. All of these sources show d'Alembert's intimate knowledge of the latest scientific and philosophical developments, and his concern for ordering these developments and establishing relationships among them.

The Encyclopédie is itself a model of the supposed structure of knowledge. It furnishes its readers with the abstract principles and realistic details of each discipline or activity which it describes. In the Discours préliminaire d'Alembert, the spokesman for the editorial policy of the enterprise, stresses this point:

L'Ouvrage dont nous donnons aujourd'hui le premier volume, a deux objets: comme Encyclopédie, il doit exposer autant qu'il est possible, l'ordre & l'enchaînement des connoissances humaines; comme Dictionnaire raisonné des Sciences, des Arts & des Métiers, il doit contenir sur chaque Art, soit libéral, soit mécanique, les principes généraux qui en font la base, & les détails les plus essentiels, qui en font le corps & la substance.<sup>7</sup>

Presented with "principes généraux" and "les détails les plus essentiels," the reader can begin where he wishes, and following the

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<sup>7</sup>Encyc., I, i.

directions given in the renvois, ascend towards the most abstract level in the matter he is studying, or descend to the ordinary phenomena of everyday life. One example of this ordering can be found in the renvois in "Equation."<sup>8</sup> D'Alembert describes the language in which algebraic equations are written, referring to "Arithmétique universelle." The principle of all equations is described in "Egalité"; the parts of an equation, in "Racine," "Terme," and "Membre." Methods of handling different types of equations are given in "Regle de trois," "Abaissement," "Transposition," and "Transformation." And in "Alliage" and "Vitesse," practical applications are treated. Beginning at any of these articles, the curious reader is led by references to all the others. The structure of such chains is also illustrated in the well-known "Système figuré des connoissances humaines." At once utilitarian and theoretical, the Encyclopédie is to furnish the materials for the reader to ascend or descend at will. Professor Schwab has called this combining of two methods "a fusion of traditions which lies at the foundation of the Encyclopedia."<sup>9</sup> But this encyclopaedia is only a beginning: others will in time extend knowledge, better illustrate the relationships among facts, and fill up the emptiness which separates facts appearing at present to be unrelated. The Encyclopédie is only one stage in the optimistic project of learning everything, of putting everything in order.

Rationalism and empiricism, in the eighteenth century, coexist

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<sup>8</sup>Encyc., V, 842-855.

<sup>9</sup>Richard N. Schwab, ed. and trans., Preliminary Discourse to the Encyclopedia of Diderot, by d'Alembert, p. xxiii.

and depend on each other. Both have issued from long philosophical traditions, and both have named as their saints philosophers still living or fairly recently deceased, such as Voltaire, Malebranche, Newton, and Descartes. But for d'Alembert they signify two aspects of the real structure of knowledge. This structure, as we have already seen and shall consider in more detail, consists of ordered chains of established facts. Rationalism and empiricism thus only describe methods for moving about within the structure.

#### D'Alembert and Rationalism

In the period we are considering, René Descartes was still considered the principal rationalist theorist. The rationalist movement was still in a very powerful position, although formal Cartesianism, despite such towering proponents as Malebranche and Fontenelle, was in decline. Cartesianism had even by 1750 become a sort of conservative religion, but its precepts and prejudices of a more general nature, separated from the seventeenth-century physics which they clothed, retained great vigour within the less restrained philosophy of d'Alembert and his circle. Pestré, author of the main body of the Encyclopédie article "Cartésianisme," stresses the debt of later systems to Descartes in this matter of method:

Quoique Galilee, Toricelli, Pascal & Boyle, soient proprement les peres de la Physique moderne, Descartes, par sa hardiesse & par l'éclat mérité qu'a eu sa Philosophie, est peut-être celui de tous les savans du dernier siecle à qui nous ayons le plus d'obligation. Jusqu'à lui l'étude de la nature demeura comme engourdie par l'usage universel où étoient les écoles de s'en tenir en tout au Péripatétisme. Descartes, plein de génie & de pénétration, sentit le vuide de l'ancienne Philosophie; il la représenta au public sous ses vraies couleurs, & jetta un ridicule si marqué sur les prétendues connoissances qu'elle promettoit, qu'il disposa tous les esprits à chercher une meilleure route.

Il s'offrit lui-même à servir de guide aux autres; & comme il employoit une méthode dont chacun se sentoît capable, la curiosité se réveilla par-tout. C'est le premier bien que produisit la Philosophie de Descartes; le goût s'en répandit bien-tôt par tout: on s'en faisoit honneur à la cour & à l'armée. Les nations voisines parurent envier à la France les progrès du Cartésianisme, à-peu-près comme les succès des Espagnols aux deux Indes, mirent tous les Européens dans le goût des nouveaux établissemens. La Physique Française, en excitant une émulation universelle, donna lieu à d'autres entreprises, peut-être à de meilleures découvertes. Le Newtonianisme même en est le fruit.<sup>10</sup>

And as d'Alembert himself says in the same article, "L'édifice [de la philosophie cartésienne] est vaste, noble, & bien entendu: c'est dommage que le siècle où il vivoit, ne lui ait pas fourni de meilleurs matériaux."<sup>11</sup>

As we have seen in the two preceding chapters, eighteenth-century linguistic theory was especially indebted to seventeenth-century rationalism; the eighteenth century truly only built on its inheritance from the preceding one. But the revolution in science, with Sir Isaac Newton at its head, imposed new elements on linguistic theory. Formal empiricism, for example, forced thinkers to restate theories on language origin, taking into account the rôle of the senses in the formation of ideas. A new, more universally accepted consciousness of both the value of directed experiment and the danger of applying hypotheses to matters not sufficiently understood encouraged the ordering of scientific language. Specialized languages of this type were seen to require new methods for handling them; thinkers such as d'Alembert and Condillac (the latter especially in his

<sup>10</sup>Encyc., II, 717.

<sup>11</sup>Ibid., p. 725.

Traité des systèmes) insisted that the methods which the new scientific spirit stressed, such as precise definition of principles and terms, logical deduction from these principles, and constant reference to experience to check the results, could profitably be carried over to the realms of art, literature, political theory, morals, and metaphysics as well. However these methods, deriving from the demands made by fundamentally empiricist experimental science, depend as well on strongly rationalist views about the structure of the universe, of knowledge, and of language which transmits this knowledge. I shall now consider how a belief in these rationalist structures is illustrated in d'Alembert's writings.

The most striking rationalist tendency of the whole eighteenth-century Enlightenment, a tendency which still retains much force today, although it is somewhat weakened, is the vision of the unity, the simplicity, and the reasonableness of knowledge. Rationalism proposes in the first place that each particular fact can be deduced from a clear, simple, universal, and fundamental truth. This supposition carries with it a faith in universal order; rationalism conceives of chaos as a collection of phenomena with a hidden order, an order which exists but which we do not perceive. The eighteenth century, even in its most empiricist and experimentalist moments, does not refuse to suppose this order.

Ernst Cassirer has stressed, in The Philosophy of the Enlightenment, the eighteenth-century belief in the unity of all knowledge. All the structural elements of the body of knowledge have in common their belonging to one edifice. Diderot declares, in his

article "Encyclopédie": "Toutes les Sciences empiètent les unes sur les autres: ce sont des rameaux continus & partant d'un même tronc."<sup>12</sup>

And in the Pensées sur l'interprétation de la nature he states:

"L'indépendance absolue d'un seul fait est incompatible avec l'idée de tout; et sans l'idée de tout, plus de philosophie."<sup>13</sup> Even though

Descartes and Leibniz, the theorists of a purer rationalism, emphasized the primacy of abstract ideas, while Locke's followers declared sense experience to be more important, the eighteenth century united the two positions by granting more significance to the relationships between principles and particular details, as again Cassirer has stressed:

The difference in the mode of thinking does not mean a radical transformation; it amounts merely to a shifting of emphasis. This emphasis is constantly moving from the general to the particular, from principles to phenomena. But the basic assumption remains; that is the assumption that between the two realms of thought there is no opposition, but rather complete correlation . . . . The self-confidence of reason is nowhere shaken. The rationalistic postulate of unity dominates the mind of this age.<sup>14</sup>

In d'Alembert we have noted the increasingly important rôle played by sensationalism in an essentially rationalist structure. This tendency is typical of the period:

With the advent of the eighteenth century the absolutism of the unity principle seems to lose its grip and to accept some limitations and concessions. But these modifications do not touch the core of the

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<sup>12</sup>Encyc., V, 643 recto.

<sup>13</sup>Oeuvres complètes de Diderot, eds, J. Assézat and M. Tourneux (Paris: Garnier, 1875-77), II, 15.

<sup>14</sup>Cassirer, The Philosophy of the Enlightenment, p. 22.

thought itself. For the function of unification continues to be recognized as the basic role of reason.<sup>15</sup>

D'Alembert's acceptance of the idea of the unity of all knowledge forms the basis of his theory of knowledge, of possible progress in the search for hidden facts, and of the efficient communication of new discoveries.

Once the idea of the unity of knowledge has been accepted, one has only to assume that the unified structure is of a simple, accessible nature. This "esprit simpliste,"<sup>16</sup> and the propensity for simplifying, were of essential importance in determining the central themes of the Discours préliminaire:

Much of the argument of the Discourse is built upon the assumption of the simplicity of principles or laws of the various disciplines. It is the same kind of simplicity that d'Alembert the geometer demanded in the essential propositions of his own science, that, as a philosophe, he applied as an assumption to the whole range of knowledge. What can be known, he says in effect, can be reduced to simple terms, and this process of analysis into simplest terms can be extended to other branches of knowledge, if not by the application of mathematics or rigorous logic, at least by a process of arranging the facts within a field so that one finds the simple fact that explains them all.<sup>17</sup>

Such is the power of the rationalist "esprit simpliste" in the middle of the so-called "empiricist" eighteenth century. Both in Newton's mathematical worldview and in the experimental method, the basic simplicity of nature and knowledge is postulated. Both of these ideals were very popular in the eighteenth century; the popularity of

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<sup>15</sup>Ibid., p. 23.

<sup>16</sup>R.E. Butts applies the term to d'Alembert in his article "Rationalism in Modern Science: d'Alembert and the 'esprit simpliste'."

<sup>17</sup>Schwab, Preliminary Discourse . . . , by d'Alembert, p. xxxiv.



the simplicity postulate is a corollary to this fact.

D'Alembert's method is essentially a refinement of the "esprit simpliste." He does not assume the necessary simplicity of the solution to a problem, but rather he insists that the solution will be simplest in the case where the problem itself is posed in simple terms. For a particular problem to be set out in a simple way, the individual constituent problems which it contains, if they can be discerned, must be posed in a clear and simple manner:

[L'étude apprend au philosophe] que chaque effet venant presque toujours du concours de plusieurs causes, la manière d'agir de chacune est simple, mais que le résultat de leur action réunie est compliqué, quoique régulier; & que tout se réduit à décomposer ce résultat pour en démêler les différentes parties.<sup>18</sup>

Here is a resurgence of a methodology which sets the utility of the result as its main criterion. The coming and going, at once rationalist and empiricist, between principles and phenomena serves in the final analysis to reveal hidden simplicity. D'Alembert's "esprit simpliste" consists of proposing that when problems are posed in a simple way, their solutions will be of the simplest possible form.

The third of these rationalist preconceptions which has force for d'Alembert is the belief in an innate, universal, and irresistible power of reason to treat the ideas we form of beings and objects outside ourselves. He accepts that information about exterior objects is communicated to our minds by means of sensations. But how can we

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<sup>18</sup>D'Alembert, Recherches sur différens points importans du système du monde (Paris: David, 1754-56 [Reprint, Bruxelles: Culture et Civilisation, 1966]), III, xx.

know that these objects really exist, he asks? How can we proceed from sensation to object in our rational dealings?<sup>19</sup> We must put our faith in instinct: "Il n'y a qu'une espece d'instinct, plus sûr que la raison même, qui puisse nous forcer à franchir un si grand intervalle . . . ." <sup>20</sup> He suggests that we can prove that our instinctive faith is justified, by a sort of experiment in which we assume for an instant that objects do not exist:

. . . cet instinct est si vif en nous, que quand on supposerait pour un moment qu'il subsistât; pendant que les objets extérieurs seroient anéantis, ces mêmes objets reproduits tout-à-coup ne pourroient augmenter sa force.<sup>21</sup>

Even if there were no exterior objects, d'Alembert claims, and we still possessed our instinctive belief in them, our sensations would be no more forceful if previously imaginary exterior objects were suddenly brought into real existence. In this way d'Alembert makes reason depend on the instinctive faith which constructs clear and distinct ideas. And since this instinct is innate in all men, so too is the basis of the power of human reason.

These three rationalist elements are united in a concept which d'Alembert, along with most scientists and philosophers of his age, accepted and elaborated. The concept is that of a continuous chain of being which extends from dead matter, all the way up to the most

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<sup>19</sup>Condillac devoted his whole Traité des sensations to disproving positions, such as Berkeley's, of pure idealism.

<sup>20</sup>Discours préliminaire, Encyc., I, ii.

<sup>21</sup>Ibid.

complex and perfect beings of which we can conceive. The corollary to this chain of being is a chain of knowledge, which is a step by step equivalent to the beings to which the individual facts relate. In other words the chain of knowledge derives its continuity from the chain of being which it describes.

The idea of a chain of being is based, according to Arthur O. Lovejoy in his famous history of the idea, on three principles: that of plenitude (the existence of imperceptibly nuanced forms between all the different forms we are familiar with), that of the continuity of these nuanced forms; and that of gradation (the hierarchical classification of beings from the basest to the most perfect).<sup>22</sup> These ideas were born in the works of Plato and Aristotle, took root among the Neo-Platonists, passed through the hands of the rationalists<sup>23</sup> and the empiricists,<sup>24</sup> and were very widely accepted during the Enlightenment.

D'Alembert's vision of the structure of nature, and therefore of the structure of any description of nature, is in basic agreement with this conception. All the facts which make up our knowledge are,

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<sup>22</sup>Lovejoy, The Great Chain of Being (Cambridge, Mass.: Harvard University Press, 1936), p. 183.

<sup>23</sup>Descartes, in the Discours de la méthode, postulates the existence of a chain of knowledge in the third of his precepts. See Descartes, Oeuvres, eds. Charles Adam and Paul Tannery, 2nd ed. (Paris: Vrin, 1956-57), VI, 18-19: "Le troisiemesme [précepte], de conduire par ordre mes pensées, en commençant par les objets les plus simples & les plus aysez a connoistre, pour monter peu a peu, comme par degrez, iusques a la connoissance des plus composez; et supposant mesme de l'ordre entre ceux qui ne se precedent point naturellement les vns les autres."

<sup>24</sup>See Locke, An Essay Concerning Human Understanding (Bk. III, Chap. VI, par. 12), II, 67-69, for his conception of a chain of being.

according to him united:

Pour peu qu'on ait réfléchi sur la liaison que les découvertes ont entr'elles, il est facile de s'appercevoir que les Sciences & les Arts se prêtent mutuellement des secours, & qu'il y a par conséquent une chaîne qui les unit.<sup>25</sup>

The known facts in any one discipline can be organized in such a fashion that each truth is made to depend upon another one, next to it in the chain. For example, in the Discours préliminaire geometry is proposed as a model science. From a few clear and simple principles all the individual cases which this science treats can be deduced;<sup>26</sup> the intermediary stages in such deductions differ only slightly from one another:

Qu'on examine une suite de propositions de Géométrie déduites les unes des autres, en sorte que deux propositions voisines se touchent immédiatement & sans aucun intervalle, on s'appercevra qu'elles ne sont toutes que la première proposition qui se défigure, pour ainsi dire, successivement & peu-à-peu dans le passage d'une conséquence à la suivante, mais qui pourtant n'a point été réellement multipliée par cet enchaînement, & n'a fait que recevoir différentes formes. . . . On peut donc regarder l'enchaînement de plusieurs vérités géométriques, comme des traductions plus ou moins différentes & plus ou moins compliquées de la même proposition, & souvent de la même hypothèse.<sup>27</sup>

The aim of research is thus to complete the chain. To achieve this end, to find the missing links, the philosopher may use both rationalist

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<sup>25</sup>Discours préliminaire, Encyc., I, i.

<sup>26</sup>Indeed the Traité de dynamique has as its aim to deduce all of mechanics from these same geometrical principles. See Hankins, ed., Traité de dynamique, by d'Alembert, p. x: "Mechanics, for d'Alembert, was merely an extension of geometry; the Traité de dynamique was one of the last important attempts to completely 'geometrize' the world."

<sup>27</sup>Discours préliminaire, Encyc., I, viii-ix.

and empiricist methods, both deduction from principles and induction from phenomena: "Pour former les chainons dont nous parlons, il faut avoir égard à deux choses; aux faits observés qui forment la matiere des chainons, & aux lois générales de la Nature qui en forment le lien."<sup>28</sup> We may say, then, that from the idea of the chain of being, of the chain of phenomena, and of the chain of knowledge, d'Alembert derives his vision of the method to use in gaining new scientific knowledge; the way he achieves this goal is by imitating the order of nature as he perceives it.

The rationalist origin of this conception in d'Alembert becomes more evident when we consider that the chain is always incomplete. Nature never presents a complete chain; its plenitude exists only in the philosopher's idea. The idea of a chain is thus a convenient metaphor, one which can be imposed with no essential contradiction on phenomena. For example in the Discours préliminaire we read: "L'Univers n'est qu'un vaste Océan, sur la surface duquel nous appercevons quelques îles plus ou moins grandes, dont la liaison avec le continent nous est cachée."<sup>29</sup> This position is reiterated in the Elémens de philosophie, where the chain of truths still remains to be completed:

Tous les êtres, et par conséquent tous les objets de nos connaissances, ont entre eux une liaison qui nous échappe; nous ne devinons dans la grande énigme du monde que quelques syllabes dont nous ne pouvons former un sens. Si les vérités présentaient à notre esprit une suite non interrompue, il n'y aurait point d'élémens à faire, tout se réduirait à une vérité unique dont les autres vérités ne seraient que des traductions différentes. Les sciences seraient alors un

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<sup>28</sup>"Cosmologie," Encyc., IV, 294.

<sup>29</sup>Encyc., I, xv.

labyrinthe immense, mais sans mystère, dont l'intelligence suprême embrasserait les détours d'un coup d'oeil, et dont nous tiendrions le fil. Mais ce guide si nécessaire nous manque; en mille endroits la chaîne des vérités est rompue; ce n'est qu'à force de soins, de tentatives, d'écarts même que nous pouvons en saisir les branches: quelques unes sont unies entre elles, et forment comme différens rameaux qui aboutissent à un même point; quelques autres isolées, et comme flot-tantes, représentent les vérités qui ne tiennent à aucune.<sup>30</sup>

We are reminded also in this matter of metaphorical representations of the structure of knowledge, of the "Système figuré des connoissances humaines," published with the Discours préliminaire. But Diderot points out<sup>31</sup> that the diagram, which had already appeared in almost the same form in his "Prospectus," was borrowed from many different sources. The diagram then is not d'Alembert's contribution. Indeed the metaphors he prefers (islands in an ocean, for example) stress less the interdependence of the sciences, than the vast unknown regions which separate them. D'Alembert sees that the different sciences, although more or less ordered in themselves, have not yet all been linked together in one continuous chain:

Bien loin d'appercevoir la chaîne qui unit toutes les Sciences, nous ne voyons pas même dans leur totalité les parties de cette chaîne qui constituent chaque science en particulier. . . . toutes les propositions ne se tiendront pas immédiatement, & formeront pour ainsi dire des groupes différens & desunis.<sup>32</sup>

D'Alembert sees that the philosopher's task is to put himself in the place of the "intelligence suprême" and try to unify all knowledge.

<sup>30</sup>Oeuvres, I, 130.

<sup>31</sup>"Observations sur la division des sciences du Chancelier Bacon," Encyc., I, 11.

<sup>32</sup>"Elémens des sciences, " Encyc., V, 491.

He must try to know everything, to understand everything, to put everything in its proper order. But much remains for d'Alembert unknown and disjointed.<sup>33</sup>

The first, most fundamental fact in the chain of knowledge is the existence of any and all phenomena:

Si nous savions "pourquoi il y a quelque chose," nous serions vraisemblablement bien avancés pour résoudre la question "comment telle et telle chose existe-t-elle?" car vraisemblablement tout se tient dans l'univers plus intimement encore que nous ne pensons . . . .<sup>34</sup>

This reason is unfortunately unknown, and d'Alembert is forced, as we shall see in Chapter VI, to take refuge from such unanswerable questions as why things exist, in scepticism. What can be known, says d'Alembert, can be put in order; but man has no right to aspire to knowledge which is undoubtedly beyond his reach. When truth cannot be grasped, we must keep silence.

D'Alembert, despite his leading position in the party of "empiricist" scientists and philosophers, remained imbued with Cartesian methods. He came by his heritage honestly; his professor of philosophy (whom he does not name) for two years at the Collège des Quatre-Nations was a "cartésien à outrance."<sup>35</sup> As we have learned,

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<sup>33</sup>Diderot also expresses such a simile in the Pensées sur l'interprétation de la nature (Oeuvres complètes de Diderot, II, 17): "Je me représente la vaste enceinte des sciences, comme un grand terrain parsemé de places obscures et de places éclairées. Nos travaux doivent avoir pour but, ou d'étendre les limites des places éclairées, ou de multiplier sur le terrain les centres de lumières. L'un appartient au génie qui crée; l'autre à la sagacité qui perfectionne."

<sup>34</sup>Elémens de philosophie, Oeuvres, I, 148.

<sup>35</sup>"Mémoire de d'Alembert, par lui-même," Oeuvres, I, 1.

d'Alembert shared with Descartes a vision of ordered knowledge. He credits Descartes with constructing an admirable system: "L'édifice [de la philosophie cartésienne] est vaste, noble, & bien entendu . . . ." <sup>36</sup> But Descartes derives his idea of order from divine perfection, while d'Alembert escapes from pure rationalism by incorporating at this point the experience of reality. Experience is of some value to Descartes as well, it should be remembered, but its rôle is reduced to confirming what intuition has already suggested. <sup>37</sup> Descartes's rationalism, which seeks confirmation for its hypotheses in experience, approaches in this way the Baconian ideal of controlled experiment, but there remains a gap between the two. D'Alembert chose to favour Bacon's ideal.

There are, according to d'Alembert, two great contributions which Descartes made. First, he was a great innovator:

Le système de Descartes, n'a été, si on peut parler ainsi, qu'un feu passager; mais c'est un feu qui a brillé dans la nuit la plus profonde. . . . ses erreurs même étoient au-dessus de son siècle, & n'ont été que trop longtemps au-dessus du nôtre . . . . <sup>38</sup>

He was able to "secoïer le joug de la scholastique, de l'opinion, de l'autorité," <sup>39</sup> and thus succeeded in bringing many accepted attitudes

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<sup>36</sup>"Cartésianisme," Encyc., II, 725.

<sup>37</sup>H. Butterfield, The Origins of Modern Science (London: G. Bell, 1949), p. 101.

<sup>38</sup>D'Alembert, Recherches sur la précession des équinoxes, et sur la nutation de l'axe de la terre, dans le système newtonien (Paris: David, 1749 [Reprint, Bruxelles: Culture et Civilisation, 1967]), p. xxviii.

<sup>39</sup>Discours préliminaire, Encyc., I, xxvi.



into question. D'Alembert had good reason to praise Descartes's questioning; he and his fellow philosophes were doing the same thing. The other great contribution made by Descartes was for d'Alembert the discovery of new mathematical techniques:

On peut considérer Descartes comme Géometre ou comme Philosophe. Les Mathématiques, dont il semble avoir fait assez peu de cas, font néanmoins aujourd'hui la partie la plus solide & la moins contestée de sa gloire.<sup>40</sup>

D'Alembert as well as Descartes was involved in a variety of disciplines which could be divided into two groups, "philosophical" and scientific. For both Descartes and d'Alembert scientific aptitude influenced "philosophical" activity; their shared desire for precisely ordered knowledge passed from their mathematical genius to their other speculative talents. In both cases their way of looking at other problems was influenced by their mathematical background.

It is of some importance that d'Alembert does not mention the great debt he and other Enlightenment thinkers owe to Descartes for the Cartesian "method." The precepts of the Discours de la méthode are for the most part based on common sense, and while this famous work codified them and set them down in a brilliant prose style, the ideas are certainly not uniquely Descartes's.<sup>41</sup> It is probably because

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<sup>40</sup>Ibid., p. xxv.

<sup>41</sup>Gustave Lanson states (see "L'influence de la philosophie cartésienne sur la littérature française," in Etudes d'histoire littéraire [Paris: Librairie Ancienne Honoré Champion, 1929], pp. 60-65) that many so-called "Cartesian" tenets knew wide currency among Descartes's contemporaries, and that their subsequent influence on French thought cannot be attributed to Descartes alone.

these ideas were so widespread and universally accepted that d'Alembert chose not to identify them only with the great rationalist originator of so ingenious a tool as analytic geometry, but rather to accept them as timeless standards with which Descartes happened to agree. The characteristics of the Cartesianism of the 1680-1740 period which J.B. Bury cites were all readily acceptable to d'Alembert:

When we speak of Cartesianism we do not mean the metaphysical system of the master, or any of his particular views such as that of innate ideas. We mean the general principles, which were to leave an abiding impression on the texture of thought: the supremacy of reason over authority, the stability of the laws of Nature, rigorous standards of proof.<sup>42</sup>

What d'Alembert rejected was Descartes's applying these principles to realms where they could not have any real meaning, such as speculation on the existence of God and the immortality of the soul.

The rationalist method which d'Alembert applied to science is above all a way of facilitating clear communication of the fruits of research. The Traité de dynamique has a clear overall plan, with its aims set out at the beginning, and copious illustrations at the end; it has gained much from d'Alembert's rationalist bent. The fact that d'Alembert insisted on using long, complicated geometric proofs, as tradition demanded, instead of more concise algebraic ones, accounts in large part for the difficulties modern readers face when trying to read it. In the Encyclopédie article "Déduction" d'Alembert gives the criteria which permit rapid, easy passage from a principle to a particular case:

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<sup>42</sup>Bury, The Idea of Progress. An Inquiry into its Origin and Growth, 2nd ed. (New York: Dover, 1955), p. 116.

. . . pour qu'une déduction soit bonne, il faut 1°. que le premier principe d'où l'on part soit ou évident par lui-même, ou reconnu pour vrai; 2°. que chaque proposition ou conséquence suive exactement de la proposition ou conséquence précédente; 3°. . . que la liaison entre chaque conséquence & la suivante puisse être facilement apperçue, ou du moins que cette liaison soit connue d'ailleurs.<sup>43</sup>

The whole aspect of d'Alembert's method which stresses movement from ideas to phenomena issues from his rationalist heritage. The importance of empiricism and experimentalism in his system is again to be stressed, but the method of his exposition always observes the rationalistic rules of clarity and order:

S'il se refuse à étudier les universaux, et à prendre son point de départ en des affirmations métaphysiques sur la nature de Dieu pour descendre du général au particulier, il n'en reste pas moins vrai que sa méthode en science, en hydrologie par exemple, est de partir de principes connus, clairs, évidents, d'appliquer la méthode déductive et mathématique et de comparer ensuite les résultats de sa déduction avec ceux de l'expérience et de l'observation.<sup>44</sup>

Scientific certainty depends on absolute faith in the truth of fundamental propositions.<sup>45</sup> And this faith must be founded on the just interaction of empiricism and rationalism, on critical judgment of the value of propositions, and on the linguistic order which permits passage from one fact to another.

#### D'Alembert and Empiricism

Empiricism furnishes d'Alembert with a method by which he may formulate universal, fruitful principles. Such principles, induced

<sup>43</sup> Encyc., IV, 729.

<sup>44</sup> Muller, Essai sur la philosophie de Jean d'Alembert, p. 175.

<sup>45</sup> D'Alembert, Traité de dynamique (1743 ed.), p. i.

from observation and experiment, are found at the end of a chain stretching from the real to the abstract. Deduction from such principles is then easy to follow; the most valuable order, where theorem and phenomenon are both in their places, can then be conceived without difficulty:

[La méthode analytique] consiste à faire des expériences & des observations, à en tirer des conséquences générales par la voie de l'induction; & ne point admettre d'objections contre ces [sic] conséquences, que celles qui naissent des expériences ou d'autres vérités constantes. Et quand même les raisonnemens qu'on fait sur les expériences par la voie de l'induction, ne seroient pas des démonstrations des conséquences générales qu'on a tirées; c'est du moins la meilleure méthode de raisonner sur ces sortes d'objets; le raisonnement sera d'autant plus fort, que l'induction sera plus générale. S'il ne se présente point de phénomènes qui fournissent d'exception, on peut tirer la conséquence générale. Par cette voie analytique, on peut procéder des substances composées à leurs élémens, des mouvemens aux forces qui les produisent, & en général des effets à leurs causes, & des causes particulières à de plus générales, jusqu'à ce que l'on soit parvenu à celle qui est la plus grande de toutes.<sup>46</sup>

The agreement of the real and theoretical thus depends not only on valid deduction, but also on the circumspect induction by which the abstractions themselves are made.

D'Alembert's discussions of the best way to formulate definitions illustrate the importance for him of careful inductive reasoning, and also how induction and language are bound together. First of all, as Professor Schwab underlines, d'Alembert does not believe in the real existence of the abstract qualities that some words represent:

<sup>46</sup>"Analytique," Encyc., I, 403-404.

D'Alembert était un nominaliste convaincu. Il affirma à plusieurs reprises que nous ne connaissons que les objets individuels, que nos abstractions et nos idées complexes dérivent toutes de ces expériences sensorielles, et qu'il n'y a pas d'êtres généraux.<sup>47</sup>

All generalizations must be treated as products of our reasoning power, and not as real things:

[Ma manière de philosopher] se réduit à penser qu'il n'existe que des individus, que les abstractions, relations, genres, espèces et autres idées générales et abstraites n'existent que per mentem et qu'il faut bien se garder de les réaliser hors de nos idées.<sup>48</sup>

D'Alembert holds the opinion that when a definition is formulated, it defines the name which we choose to give an object, and not the object itself. And since mathematical definitions are of entities existing only in the mathematician's mind and having no outside existence whatsoever, except crude representations, they can be made to signify what the mathematician chooses: "Les définitions des Mathématiciens regardées comme définitions de nom sont absolument arbitraires, c'est-à-dire qu'on peut donner aux objets des mathématiques tel nom, & aux mots tel sens qu'on veut."<sup>49</sup> A definition is formulated then with due respect for the empirical facts that one wishes to be able to deduce from it:

<sup>47</sup>Richard N. Schwab, ed., Essai sur les éléments de philosophie, by d'Alembert, p. xxvi.

<sup>48</sup>Bibliothèque Municipale de Poitiers, MS. 199, p. 10. This letter by d'Alembert is quoted by Paul Vernière in his Spinoza et la pensée française avant la révolution (Paris: Presses Universitaires de France, 1954), II, 655.

<sup>49</sup>"Définition, en Mathématiques," Encyc., IV, 749.

Les définitions mathématiques ne sont à la rigueur que des définitions de nom (pour user de l'expression des Logiciens); c'est-à-dire qu'on s'y borne à expliquer ce qu'on entend par un mot, & qu'on ne prétend pas expliquer par la définition la nature de la chose . . . .<sup>50</sup>

But mathematical definitions are an extreme case. In reality, as d'Alembert says in the Elémens de philosophie, definitions reflect our idea of an object: "Elles expliquent la nature de l'objet tel que nous le concevons, mais non tel qu'il est."<sup>51</sup> Reality, according to him, cannot be reached by pure reason, but reason, acting on the information provided by our senses, permits the mind to manipulate the linguistic symbols of our impressions of the real world. A definition, like language itself, means nothing without its link with reality; both words and definitions are conceived by imposing order on empirical facts.

In the eighteenth century many thinkers wished to bypass words of individual languages by creating a universal language of written symbols which each linguistic group would read in its own idiom.<sup>52</sup> Written signs in such a script would represent ideas, not sounds, and would not derive their form from the arbitrarily chosen words which each group assigns to these ideas. This kind of script merely replaces a word symbol with a written one; such a written sign would symbolize the definition of an idea.

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<sup>50</sup>Ibid., pp. 748-749.

<sup>51</sup>Oeuvres, I, 134.

<sup>52</sup>D'Alembert discusses the project in "Caractere," Encyc., II, 645-646.

D'Alembert's theory of definitions is only a useful application of current empiricist ideas. Locke had studied the relationships among things, ideas, and signs of ideas. D'Alembert retained from this discussion what was useful to him. In the Discours préliminaire d'Alembert considers the empiricist nature of Locke's method:

Ce que Newton n'avoit osé, ou n'auroit peut-être pû faire, Locke l'entreprit & l'exécuta avec succès. On peut dire qu'il créa la Métaphysique à peu-près comme Newton avoit créé la Physique. Il conçut que les abstractions & les questions ridicules qu'on avoit jusqu'alors agitées, & qui avoient fait comme la substance de la Philosophie, étoient la partie qu'il falloit sur-tout proscrire. Il chercha dans ces abstractions & dans l'abus des signes les causes principales de nos erreurs, & les y trouva. Pour connoître notre ame, ses idées & ses affections, il n'étudia point les livres, parce qu'ils l'auroient mal instruit: il se contenta de descendre profondément en lui-même; & après s'être, pour ainsi dire, contemplé longtems, il ne fit dans son Traité de l'entendement humain que présenter aux hommes le miroir dans lequel il s'étoit vû. En un mot il réduisit la Métaphysique à ce qu'elle doit être en effet, la Physique expérimentale de l'ame . . . .<sup>53</sup>

D'Alembert treats Locke the same way he does Descartes: he retains from the philosophers' productions those results that are both useful and universally true, and maintains a healthy respect for the best elements of their methods.

It is important to stress the parallel which exists for d'Alembert between experimental science and pure empiricism, between this system which bases its principles on real phenomena, and sensationalist psychology. Both accept as sources of knowledge only observed events or objects. Just as sensationalism, in the eighteenth century, was based on Locke, so Newton was regarded as the patron saint of the experimental method. In this, as in all similar matters in the

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<sup>53</sup> Encyc., I, xxvii.

history of ideas, it is not important what Newton actually did or said. His method was as rationalist as anyone else's; L. Rosenfeld has spoken of an "uncompromising rationalism that characterizes his whole approach."<sup>54</sup> But in the view of the Enlightenment, a horror of hypotheses and devotion to experimental data were the most significant and characteristic of Newton's procedural principles.

Everywhere in d'Alembert's consideration of experimental science he is inspired by what he conceives Newton's ideal to be. Much of d'Alembert's scientific work was based on Newtonian innovations, as in his Recherches sur la précession des équinoxes, et sur la nutation de l'axe de la terre, dans le système newtonien, and the Recherches sur différens points importans du système du monde, in which he corrected some errors in Newton's lunar theory. But other than thus concentrating on examining and exploiting Newton's ideas, such as universal gravitation, there is also, and this is more important for us, the adoption of what he regarded as Newton's "method." In the eighteenth century the word "newtonianisme" was given, like all catchwords, a variety of meanings. In the Encyclopédie article "Newtonianisme" d'Alembert gives the following definition of the most general meaning of the word, that of a method of research:

[C'est une] méthode qui consiste à déduire ses raisonnemens & ses conclusions directement des phénomènes, sans aucune hypothèse antécédente, à commencer par des principes simples, à déduire les premières lois de

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<sup>54</sup>Rosenfeld, "Condillac's Influence on French Scientific Thought," in The Triumph of Culture: 18th Century Perspectives, volume II of the Publications of the McMaster University Association for 18th-Century Studies, eds. Paul Fritz and David Williams (Toronto: A.M. Hakkert, 1972), p. 157.



la nature d'un petit nombre de phénomènes choisis, & à se servir de ces lois pour expliquer les autres effets.<sup>55</sup>

But according to d'Alembert Newton's greatest innovation is the theory of universal gravitation. Newton's handling of data to prove this particular principle and put it to use, are according to his conception quintessential in defining Newtonianism as a system:

La preuve de ce principe par les phénomènes, jointe avec l'application de ce même principe aux phénomènes de la nature, ou l'usage que fait l'auteur de ce principe pour expliquer ces phénomènes, constitue le système de M. Newton . . . .<sup>56</sup>

The Newtonian "method" of referring to phenomena is however common to both the definitions I have quoted.

Newton used his extraordinary intuition to impose simple mathematical laws on the universe. To be able to do this, he first had to assume, as had Descartes before him, that the universe was in fact simple and that mathematical language was best suited to describe this simplicity. Thus, as E.A. Burtt has so justly remarked, Newton's victory was Descartes's victory as well.<sup>57</sup> And Robert E. Butts has noted that the mathematical nature of the language chosen by Descartes, Newton, and their eighteenth-century followers is perhaps their most significant contribution to the subsequent development of modern science:

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<sup>55</sup>Encyc., XI, 122.

<sup>56</sup>Ibid., p. 123.

<sup>57</sup>Burtt, The Metaphysical Foundations of Modern Physical Science, p. 227.

Basically, the rationalist credo [of early modern science] involves a question-asking framework in which the notions of simplicity, quantifiability, measurability and the like are taken as basic. In short, modern science as a rationalist credo means simply the adoption of an essentially mathematical vocabulary for use in questioning nature.<sup>58</sup>

D'Alembert's own opinion of the progress of mathematical science, and let us remember he had not the wisdom of hindsight, is similar:

Si on examine sans prévention l'état actuel de nos connaissances, on ne peut disconvenir des progrès de la philosophie parmi nous. La science de la nature acquiert de jour en jour de nouvelles richesses; la géométrie, en reculant ses limites, a porté son flambeau dans les parties de la physique qui se trouvaient le plus près d'elle: le vrai système du monde a été connu, développé et perfectionné; la même sagacité qui s'était assujéti les mouvemens des corps célestes, s'est portée sur les corps qui nous environnent; en appliquant la géométrie à l'étude de ces corps, ou en essayant de l'y appliquer, on a su apercevoir et fixer les avantages et les abus de cet emploi; en un mot, depuis la terre jusqu'à Saturne, depuis l'histoire des cieux jusqu'à celle des insectes, la physique a changé de face.<sup>59</sup>

Our own modern view of a universe to be described in mathematical terms is in this way very much a product of the popularization which such a view enjoyed during the Enlightenment.

The propensity for simplification for which Newton's Principia furnishes a striking model, is an aspect of Newton's philosophy which d'Alembert consistently upheld. This propensity is, as Professor Casini has noted, visible in the works of d'Alembert's youth as well as in those of his maturity:

Il criterio metodico che D'Alembert applicò a tutto il sapere nel Discours e negli Elémens aveva già largamente operato nelle sue soluzioni di singoli problemi fisico-matematici. Non è difficile scorgere

<sup>58</sup> Butts, "Rationalism in Modern Science: d'Alembert and the 'esprit simpliste'," p. 130.

<sup>59</sup> Elémens de philosophie, Oeuvres, I, 122.

nelle equazioni nuove da lui introdotte in statica e in dinamica un geniale spirito di semplificazione, che pratica ed estende in modo singolarmente fecondo una delle "regulae" più generali della fisica newtoniana: la riduzione di casi particolari a casi generali, la consapevole "abbreviazione" delle formule esplicative.<sup>50</sup>

But as with "Cartesian" method, this drive for simplicity was not uniquely "Newtonian," even though Newton was regarded as a principal theorist of it.

In the Enlightenment Sir Francis Bacon was looked to as an instigator of the idea of controlled experiment. Newton's experimental method, according to the view of most eighteenth-century thinkers, was the purer of the two, but in reality his leanings were just as much toward asking the right questions rather than seeking blindly amid a welter of data, as Bacon's were:

. . . modern scientific procedure--not the one talked about but the one used by Galileo, Newton and their followers--was uniquely characterized not by its appeal to raw experience but by its introduction of the controlled experiment.<sup>61</sup>

But Bacon's experimental method, as it was seen in the eighteenth century, prompted d'Alembert to set up a hierarchy of approaches to the observation of phenomena. Simple observation is described as physics which is "vulgaire et palpable";<sup>62</sup> experiment, on the other hand, is "occulte" (seeking after hidden facts) and creative (combining

<sup>50</sup>Casini, "D'Alembert epistemologo," p. 31.

<sup>51</sup>Butts, "Rationalism in Modern Science: d'Alembert and the 'esprit simpliste'," p. 128.

<sup>62</sup>"Expérimental," Encyc., VI, 298.

known facts to produce new phenomena).<sup>63</sup> But both methods, although observation is labelled in a pejorative manner, are useful. Observation is necessary in experiment too, but experiment in this sense exerts some control over the phenomena the researcher may be expected to observe. In other words, if by controlling various factors in an experiment the scientist can simplify the effects to be produced, observation will be all the more fruitful.<sup>64</sup> Again, the criterion in setting up this hierarchy, where controlled experiment takes precedence over brute observation, is utility.

In all this discussion of experimental method, the essential fact to keep in mind is that theory must be made to agree with established, observed facts. Intelligent induction is used to build such theories:

En vain l'Expérience nous instruira-t-elle d'un grand nombre de faits: des vérités de cette espèce nous seront presque entièrement inutiles, si nous ne nous appliquons avec soin à en trouver la dépendance mutuelle, à saisir, autant qu'il est possible, le tronc principal qui les unit, à découvrir même par leur moyen d'autres faits plus cachés, & qui sembloient se dérober à nos recherches . . . .<sup>65</sup>

The accumulation of observed facts is worth nothing without the power of abstraction, the power to seize upon what is common to two differing phenomena, to give this common factor a new linguistic sign, and to proceed in this way by induction to universal principles.

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<sup>63</sup>Ibid.

<sup>64</sup>D'Alembert, Traité de l'équilibre et du mouvement des fluides (Paris: David, 1744 [Reprint, Bruxelles: Culture et Civilisation, 1966]), p. xxiv.

<sup>65</sup>Ibid., p. iii.

### Conclusion

Rationalism holds as its basic, central tenet the elaboration of simple fundamental principles in order to deduce particular truths. This process of synthesis is reduced to the extension of definitions to individual cases by means of language. For example in geometry, theorems are proved using simple self-evident axioms, and these theorems are in turn used to prove more complicated ones. Empiricism, using analysis, consists of making abstractions based on the myriad data of sense experience, and creating new symbols for these abstractions. D'Alembert's empiricism is oriented less towards the collection of facts than to the process of abstraction. His debt to Newton, Bacon and Locke, like his debt to Descartes, is of a methodological nature. He draws from the works of these masters what is essential for his purposes; he does not lose himself in detail but rather seeks out what might be useful.

We have seen that the aims of the Encyclopédie are to present the principles and practical details of every field of research, to furnish a structure of human knowledge through which the reader may roam as he pleases. Although imperfect, this structure represents an attempt to limit the wanderings of the inquiring mind. The reader has only to follow the chain that he wishes; all the links are there before him. In the Elémens de philosophie d'Alembert describes, as we have already seen (p. 55), the aims of his study, which constitute as well the salient characteristics of the "esprit philosophique" which is the methodological quintessence of the Encyclopédie. In both cases the limits to speculation are indicated by the need for clarity,

simplicity, truth, and especially utility. For the proof of any theoretical proposition resides in its fruitful application to a real problem.

In his treatment of an astonishing variety of subjects, d'Alembert indicates on many occasions that it is necessary to use both induction and deduction.<sup>66</sup> The ideal astronomer, for example, is the one who has both of these tools at his disposal:

[Il est celui qui est] tombé des nues, et isolé sur la terre, à qui la nature accorde une assez longue vie pour connaître tout ce que l'observation peut découvrir de phénomènes célestes, et qui ait en même temps les connaissances géométriques nécessaires pour pouvoir tirer de ces phénomènes toutes les connaissances qui en résultent.<sup>67</sup>

In physical science, the researcher must possess at the same time the ability to observe, if he is to gather facts, and a genius for calculation, in order to "assurer, pour ainsi dire, l'existence de ces causes, en déterminant exactement les effets qu'elles peuvent produire, & en comparant ces effets avec ceux que l'expérience découvre."<sup>68</sup>

Systems are repugnant when they stifle these instincts; truth, simplicity, clarity, and utility, sought after in a systematic manner, must be our goals: "Le principal mérite du Physicien seroit, à proprement parler, d'avoir l'esprit de système et de n'en faire jamais."<sup>69</sup>

<sup>66</sup>See p. 104.

<sup>67</sup>Elémens de philosophie, Oeuvres, I, 317.

<sup>68</sup>D'Alembert, Recherches sur la précession des équinoxes, et sur la nutation de l'axe de la terre, dans le système newtonien, p. vii.

<sup>69</sup>Ibid., p. viii.

D'Alembert insists, then, on the simultaneous presence of empiricist and rationalist methods. He is most concerned with the use of both methods in the natural sciences, but the same criteria are in force when he treats, as we shall see in the next chapter, music, translation, stylistics, and, in a more general sense, aesthetics. In all these matters, facts and principles both exist as linguistic elements; they are all contained within the bounds of language.

## CHAPTER V

### AESTHETICS

#### Introduction

In his "Eloge de Newton" Fontenelle offers an illuminating comparison between Newton and Descartes:

Les deux grands hommes qui se trouvent dans une si grande opposition, ont eu de grands rapports. Tous deux ont été des génies du premier ordre, nés pour dominer sur les autres esprits, et pour fonder des empires. Tous deux géomètres excellents, ont vu la nécessité de transporter la géométrie dans la physique. Tous deux ont fondé leur physique sur une géométrie qu'ils ne tenaient presque que de leurs propres lumières. Mais l'un, prenant un vol hardi, a voulu se placer à la source de tout, se rendre maître des premiers principes par quelques idées claires et fondamentales, pour n'avoir plus qu'à descendre aux phénomènes de la nature comme à des conséquences nécessaires. L'autre, plus timide ou plus modeste, a commencé sa marche par s'appuyer sur les phénomènes pour remonter aux principes inconnus, résolu de les admettre, quels que les pût donner l'enchaînement des conséquences. L'un part de ce qu'il entend nettement pour trouver la cause de ce qu'il voit; l'autre part de ce qu'il voit pour en trouver la cause, soit claire, soit obscure. Les principes évidents de l'un ne le conduisent pas toujours aux phénomènes tels qu'ils sont; les phénomènes ne conduisent pas toujours l'autre à des principes assez évidents. Les bornes qui dans ces deux routes contraires ont pu arrêter deux hommes de cette espèce, ce ne sont pas les bornes de leur esprit, mais celles de l'esprit humain.<sup>1</sup>

Far from upholding, to the exclusion of all others, the precepts of Descartes, whose follower in so many domains he was, Fontenelle sets out the essential difference between the two philosophers and also what they share: their fundamental aims, their mathematical language, their final frustration. This kind of generous comparison is unusual and surprising in a period in which "Cartesian" and "Newtonian" were

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<sup>1</sup>Fontenelle, Oeuvres complètes, ed. G.-B. Depping (Paris, 1818 [Reprint, Genève: Slatkine, 1968]), I, 393-394.



almost party labels, when a thinker tended to follow one and condemn the other. But Fontenelle is pointing out that both Cartesian and Newtonian methods exist, after all, in the inquiring human mind; neither method is sufficient and both must coexist.

D'Alembert, as we have seen in Chapter IV, unites these two theoretical systems by having both take part in building and extending a structure of knowledge. Rationalism, or deduction, requires at least to some extent a knowledge of the empirical to guide its reasoning and to verify its results. On the other hand empiricism, or induction, cannot progress beyond the passive accumulation of sense data without the essentially rationalistic ability to conceptualize. Neither Descartes's nor Newton's abstract systematic ideal presents a true picture of the activity of the human mind. For that we must look rather to Baconian controlled experiment, to the real system used by Newton, and to a lesser extent Descartes.

When d'Alembert and the eighteenth century admit that inductive and deductive reasoning must co-operate to extend our knowledge, they are partaking of what seems to me to be an almost universal human way of looking at the universe. Every culture and every individual feels the call of ideals, often of a spiritual nature, on one hand, and of material needs on the other. They are a necessary consequence of our dependence on the material world and of our uniquely human intellectual ability to conceptualize, idealize, and simplify. For d'Alembert, as for most central figures of the Enlightenment, both of these preoccupations must be harnessed. Both our ability to conceptualize and our ability to observe must be made to serve man in his striving for a

better life. In short, rationalism and empiricism must both aid mankind to progress. This utilitarianism imposes its standards on all reasoning, on all activity. Progress, in a material, moral, and political sense is the most important goal. Even art must be made to serve this end. The two salutary processes which Cartesianism and Newtonianism represent, that of visualizing an ideal, and that of refreshing oneself by continually referring to real experience, must be used to aid in achieving it.

In this chapter I propose to explore the interaction of these two processes in aesthetic matters. D'Alembert questions the very nature of beauty, its composition, and how music or language can be made more beautiful. As we have seen, he is greatly concerned with systematizing knowledge: exploring the means by which knowledge can be obtained, learning its history, probing its structure, discovering how, and how far, it can be extended. Similarly in aesthetic matters he sets out to understand phenomena in order to extend them and put them to use. His conceptions of aesthetics in general, and of music, translation and stylistics in particular, reflect the same consciousness of the simultaneous demands of idealism and realism that he shows when considering any other body of knowledge. From the Traité de dynamique, through the Encyclopédie and the Elémens de philosophie, up to his last works, d'Alembert's view of the ordered structure of reality, of the rôle of language in exploring this structure, and of the possibility of progress, remains remarkably constant.

D'Alembert finds it useful to consider induction and deduction separately on certain occasions when he imposes on the matter under

consideration an artificially limited, descriptive point of view. Such moments are his most theoretical ones, where he is not encumbered by the limitations to which he, as a human being living in a finite world and considering it through the weak, fallible, human cognitive process, is normally subject. He can afford to retreat, as he so often does, into such worlds as the airless silence of mathematics, into the realm of the purely theoretical, into the metaphoric, in order to set out his principles or describe his methods in the clearest fashion.

An example of the imposition of the rationalist point of view is the conception and structure of the Elémens de philosophie, in which he sets out the general principles of inquiry first, and then proceeds to discuss the particular cases of logic, metaphysics, morals, grammar, mathematics, mechanics, astronomy, optics, and hydrostatics. Another is his theory of what the Encyclopédie should represent and accomplish. In the former case, he is setting out, as we have seen, principles on which all philosophical (in the broadest sense) inquiry should be based. And in the latter, he proposes a dictionary which contains an order reflecting that of all human knowledge. This order may never be seized by the average reader, who may only open his volumes with the object of answering a specific question or finding a specific piece of information. But if he should desire to instruct himself further on any subject to which his curiosity has borne him, the wherewithal is close at hand. Thus, the rationalistic order of the Encyclopédie has the essentially pedagogic purpose of making accessible to any literate, thinking reader this compendium of all the world's learning. Those

facts which can be known with assurance and emmciated with clarity are in this way within the reach of any reader, however excluded he may hitherto have been from them.

As for pure empiricist statements, d'Alembert advances them again in a theoretical context. The experimental ideal, as it is found in Bacon and more especially Newton, represents the temptation to proceed unimpeded from facts to principles. And while d'Alembert's interests did not carry him far into experimental science (not as far as Descartes, for example) he recognized the value of observation and actually based his reworking of some of Newton's calculations on empirical data.<sup>2</sup>

But the empiricist and the rationalist methods are separable in d'Alembert's conception of knowledge only in a purely theoretical context. We must not in reality be governed by the "esprit de système"; we must not try to reason uniquely from the specific to the general, or vice versa. In particular in making aesthetic judgments we must take careful account of the importance we accord to realism on one hand, and idealism on the other. The attractions of both empiricist and rationalist forces are at work; the basic aesthetic questions are whether we should imitate a natural model, or whether we should try to conform to universal standards, fixed and elaborated by reason alone. Resolving this dilemma is for d'Alembert the central aesthetic problem. His answer, as we might expect, is that the two forces must

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<sup>2</sup>As in the Recherches sur la précession des équinoxes, et sur la nutation de l'axe de la terre, dans le système newtonien.

coexist and interact to produce good music, good prose, or good verse.

It should be stressed once more that d'Alembert's method of analysis, which, with respect to aesthetic questions, I shall explore in detail in this chapter, is the same whether he is talking about the structure of a particular science, or about the applicability of an aesthetic law. As well, the utilitarian aim which provides the impetus for this method applies equally to all intellectual activities. Thus, by a shared method and a shared aim, the attitudes of the scientist and the man of letters, two personalities that might seem to be at odds with one another, are closely linked.

The interplay of basic principles and empirical data is as much in evidence when d'Alembert sets up his standards of taste as it is in his scientific writing, in the Discours préliminaire or in the Eloges académiques. In stylistics as in science there are rules, and exceptions which circumstances impose; there are principles both descriptive and guiding, and anomalies which these principles do not consider. As we probe further in this chapter, we shall see that aesthetic judgments govern at what point the principles no longer bind, and at what point unfettered expression must bow to the demands made by rules. We shall consider d'Alembert's statements on aesthetics in general, and on music, translation and style, in order to elucidate the balance which is attained between the two forces at work in his mind, and how the appreciation of beauty finds living space in the realm of objective analysis.

## General Aesthetic Theory

D'Alembert's aesthetic theories do not depart from the essential elements of his philosophy as expressed in the principle that bears his name. He sets himself in the Traité de dynamique the specific goal of simplifying mechanics by enlarging the applicability of its basic tenets. This goal he accomplishes by defining which forces at work in a system can be ignored in describing the movement of the system as a whole.<sup>3</sup> His aesthetic theory is similar. As we shall see, the method by which the beautiful is analysed into what is essentially beautiful and what is relatively beautiful is similar to that method revealed in the Traité.<sup>4</sup> And the motive, that of simplification, is again the same.

We may better understand the parallel between D'Alembert's Principle and his aesthetics if we consider first of all the forces and penchants which have impelled him towards, specifically, a clearly-defined theory of the beautiful. Following this, we shall consider this theory, as it may be formulated from scattered references. Then we shall be in a position to discuss taste, genius, and finally the rapport between the artist and the one who appreciates his work.

An abiding characteristic of d'Alembert's creative life is his drive for simplicity and clarity. While the principle of the reductio

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<sup>3</sup>See Appendix B for a fuller explanation of D'Alembert's Principle.

<sup>4</sup>D'Alembert's propensity to analyse matters of taste is not always kindly received. La Harpe, for example (see his Correspondance littéraire [Paris: Migneret, 1801-07], IV, 177) accuses his discussion of being "trop séchement et trop minutieusement analytique."

ad unum is not always practicable, at least the ideal which this principle represents never loses its guiding power. Professor Schwab has said in the introduction to his edition of the Elémens de philosophie, "Il réussissait tout particulièrement à réduire tout sujet auquel il s'appliquait, aux plus simples et aux plus compréhensibles de ses données essentielles."<sup>5</sup> No question, if it contains any complexity at all, can be solved in its composite state: "Ce n'est qu'en partageant la question proposée dans toutes les questions qu'elle renferme, qu'on peut parvenir à la résoudre d'une manière précise."<sup>6</sup> Descartes's second precept in the Discours de la méthode proposes the same thing, namely, "de diviser chascune des difficultez que i'examinerois, en autant de parcelles qu'il se pourroit, et qu'il seroit requis pour les mieux résoudre."<sup>7</sup> It may be seen that this principle has universal applicability, and d'Alembert is as much at home with it in mechanics as he is in aesthetics. His style and mechanical principle exhibit the same drive towards the concise.

This drive is also the basis for what Professor Casini has called the principle of "economy" in d'Alembert. Indeed Casini finds that one can discern a sometimes fugitive unity in d'Alembert by seeking out his drive for simplicity, his "sagace applicazione, in vari campi di ricerca, del criterio 'economico' che caratterizza l'equazione

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<sup>5</sup>Schwab, ed., Essai sur les éléments de philosophie, by d'Alembert, p. xxii.

<sup>6</sup>Elémens de philosophie, Oeuvres, I, 257.

<sup>7</sup>Descartes, Oeuvres, VI, 18.

fondamentale del Traité de dynamique." <sup>8</sup> D'Alembert himself demands, in physics as in history, "des faits et point de verbiage." <sup>9</sup>

We have seen that in science, as in philosophy, the principle to be sought is the simplest, least complicated, and most universally valid statement of fact which can be formulated concerning the basics of the matter in question. To achieve this necessary simplicity one must avoid all linguistic complication, all expression that is too far removed from common parlance to be understood:

On ne sauroit rendre le langage des Sciences trop simple, & pour ainsi dire trop populaire: c'est ôter un prétexte de les décrier aux sots & aux ignorans, qui voudroient se persuader que les termes qu'ils n'entendent pas en font tout le mérite, & qui, pour parler le langage de Montagne, "parce qu'ils ne peuvent y prétendre, se vengent à en médire." <sup>10</sup>

Similarly, in metaphysical or moral demonstrations, a liberal supply of obscure terms proves nothing. <sup>11</sup> What appears to be axiomatic may in reality lend itself to still further analysis and simplification by the reduction of complex terms to simple elements. <sup>12</sup> Part of the principle of economy, then, and with it the drive for concise expression, is composed of the same concern for precision and clarity which we saw in our examination of the word and the definition in Chapter II.

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<sup>8</sup> Paolo Casini, "D'Alembert epistemologo," p. 33.

<sup>9</sup> Elémens de philosophie, Oeuvres, I, 346.

<sup>10</sup> "Corollaire," Encyc., IV, 259.

<sup>11</sup> "Application," Encyc., I, 553.

<sup>12</sup> Discours préliminaire, Encyc., I, viii.



The desire for simplicity, and as a corollary to it the passion for order in any corpus of facts, may be placed among those values to which d'Alembert adhered in all his activities. That is to say that what is essentially an arbitrary methodological statement (although considering the ever-present aim of disseminating information, it is also pragmatic) carries over from one field to another, however unrelated they appear, and guides inquiry in both of them. As we shall see, the complementary principles of brevity and clarity, both of which borrow from the central principle of simplicity, succeed in dominating d'Alembert's penchants in both linguistic expression and aesthetics in general.

Placing disorganized facts in a logical order also adds to their utility; gaining in appeal and equilibrium, a continuum of thought is rendered more easily accessible to an observer. For d'Alembert, as for his century, the beautiful gains by being of some use:

"Rien n'est beau que le vrai, le vrai seul est aimable," (dit le bon goût par la bouche de Despréaux [Boileau]); la Philosophie dit de son côté: "Rien n'est bon que le vrai, le vrai seul est utile." Le vers de Despréaux est meilleur; mais la Philosophie et Despréaux ont également raison.<sup>13</sup>

For his part, Boileau actually did share Philosophy's (and d'Alembert's) opinion:

Auteurs, prestez l'oreille à mes instructions.  
Voulez-vous faire aimer vos riches fictions?  
Qu'en sçavantes leçons vostre Muse fertile

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<sup>13</sup>"Eloge de Sacy," Oeuvres, III, 78-79.

Partout joigne au plaisant le solide et l'utile.  
 Un Lecteur sage fuit un vain amusement,  
 Et veut mettre à profit son divertissement.<sup>14</sup>

In this case both d'Alembert and Boileau hold up a utilitarian ideal, and d'Alembert equates with utility both truth and beauty.

D'Alembert's method has shown itself many times to consist of a consciousness of both inductive and deductive methods. Similarly, in analysing a problem he tends to divide it into universal and relative elements, that is to say elements that derive from principles on one hand, and from phenomena on the other. This is the method he uses in aesthetics: "Il y a dans tous les Arts un beau absolu, & un beau de convention; un goût réel, & un goût arbitraire."<sup>15</sup>

This kind of analysis is common in the eighteenth century; some prominent aestheticians have made it the basis of their aesthetic theory. Diderot gives a good summary of these theories in his article "Beau" in the Encyclopédie, arranging them of course in such a fashion as to preface his own theory of the beautiful. In 1725 appeared Hutcheson's Inquiry into the Original of Our Ideas of Beauty and Virtue. This book, which soon had enthusiastic followers in France, proposed dividing the beautiful in works of art into absolute and relative elements; the former is a sort of universally recognizable beauty, without any reference to the work's imitative power, while the

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<sup>14</sup>Boileau, Art poétique (Chant IV, vv. 85-90), in Oeuvres complètes, ed. C.-H. Boudhors, 2nd ed. (Paris: Belles Lettres, 1952), II, 112.

<sup>15</sup>"Elocution," Encyc., V, 524.

latter consists of the force of the imitation.<sup>16</sup> The Jesuit father Yves-Marie André, who first published his Essai sur le beau in 1741, makes a further division: essential beauty consists of those eternal values of order and symmetry which are observed in the work; natural beauty refers to the beauty which the work derives from the beauty of its subject; and artificial beauty is evoked by the excellence of the artist's execution.<sup>17</sup> Other aestheticians, including Diderot himself, recognize the value of such divisions for analytic purposes, but deny that they provide an acceptable definition of the beautiful. But what holds our interest here is that this sort of analysis, which d'Alembert preferred, and which was in closest agreement with his less restricted way of looking at the world, was well known throughout the middle years of the eighteenth century.<sup>18</sup>

D'Alembert discusses the separation of beauty into absolute and relative elements with considerable firmness, especially in his Encyclopédie article "Elocution." Like other proponents of such theories, he does not describe of what exactly the "beau absolu"

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<sup>16</sup>Diderot, "Beau," Encyc., II, 172-173.

<sup>17</sup>Ibid., p. 173.

<sup>18</sup>Baudelaire also supports such a system (see "Le peintre de la vie moderne," in Oeuvres complètes, ed. Marcel Ruff [Paris: Seuil, 1968], p. 550): "Le beau est fait d'un élément éternel, invariable, dont la quantité est excessivement difficile à déterminer, et d'un élément relatif, circonstanciel, qui sera, si l'on veut, tour à tour ou tout ensemble, l'époque, la mode, la morale, la passion. Sans ce second élément, qui est comme l'enveloppe amusante, titillante, apéritive, du divin gâteau, le premier élément serait indigestible, inappréciable, non adapté et non approprié à la nature humaine." But in this case the "beau absolu" is an image of the divine, while the "beau relatif" is its earthly imitation. As Mme Gita May has pointed out (Diderot et Baudelaire, critiques d'art, 2nd ed. [Genève: Droz, 1967], p. 134), Baudelaire's system is a result of his Platonic dualism.

consists. Relative beauty, it is true, is influenced by "le caractère, le génie, le degré de sensibilité des nations ou des individus,"<sup>19</sup> but, as we shall see, the dividing line between the two beautiful elements of an artistic production which pleases us is rather indistinct.

In 1719 a very important aesthetic treatise was first published. In his Réflexions critiques sur la poésie et sur la peinture the abbé Jean-Baptiste Dubos advances the idea of aesthetic relativism, the claim that different cultures perceive beauty in different ways.<sup>20</sup> This thesis, in a century which took a great deal of interest in cultural relativism and the exotic in general, knew much favour. The idea that art must imitate nature, a neoclassical ideal, still has some value, but for Dubos, as for d'Alembert, a degree of cultural individuality is to be recognized.

D'Alembert's position is clearly enunciated:

. . . il y a . . . des traits de mélodie & d'harmonie qui plaisent indistinctement & du premier coup à toutes les nations; il y a donc du réel dans le plaisir musical; mais il y a d'autres traits plus détournés, & un style musical particulier à chaque peuple, qui demandent que l'oreille y soit plus ou moins accoutumée; il entre donc dans ce plaisir de l'habitude.<sup>21</sup>

An even finer division of the cultural element of beauty is suggested in his appendix to Montesquieu's Encyclopédie article "Goût," entitled "Réflexions sur l'usage & sur l'abus de la Philosophie dans les

<sup>19</sup>Elémens de philosophie, Oeuvres, I, 128.

<sup>20</sup>Dubos, Réflexions critiques sur la poésie et sur la peinture (Part II, sections XIII-XX), 7th ed. (Paris: Pissot, 1770 [Reprint, Genève: Slatkine, 1967]), II, 151-335.

<sup>21</sup>"Elocution," Encyc., V, 524.

matieres de goût," where relative beauty is subdivided into a part to which habit has accustomed us, and a part which we recognize immediately:

Il est des plaisirs [le beau d'opinion] qui dès le premier moment s'emparent de nous; il en est d'autres [le beau d'habitude] qui n'ayant d'abord éprouvé de notre part que de l'éloignement ou de l'indifférence, attendent pour se faire sentir, que l'ame ait été suffisamment ébranlée par leur action, & n'en sont alors que plus vifs.<sup>22</sup>

This division is not stressed elsewhere, although we shall see that the kind of cultural conditioning that perception of the "beau d'habitude" implies, is essential to developing good taste.

D'Alembert does not feel that artists are necessarily the best judges of art, for they, being more conscious of technical difficulties and the mastery of them, may lose sight of the essentially beautiful when relative beauty is particularly blinding:

Il est dans les arts de goût, des beautés d'expression dont tous les hommes sont juges nés, et ces beautés ne sont pas toujours celles auxquelles le pur artiste est le plus sensible. Les beautés d'expression sont l'ouvrage de la nature, les autres sont le fruit du travail; et l'artiste, ainsi que les autres hommes, estime les choses ce qu'elles lui coûtent.<sup>23</sup>

It stands to reason that the artist who can control his enthusiasm for what he knows is technical mastery, will be in fact the best judge of a work:

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<sup>22</sup>Encyc., VII, 768.

<sup>23</sup>"Eloge de Crébillon," Oeuvres, III, 571.

. . . en général les artistes sont les juges naturels des arts, comme les gens de loi sont les juges naturels des procès, quand ils ne sont ni aveuglés par la partialité, ni égarés par la subtilité et les tours de force de la chicane.<sup>24</sup>

Similarly creative genius gives form and expression to absolute beauty; in the fury of creation the artist mixes "l'or & le limon"<sup>25</sup> together, but as his reason regains control it removes the offensive by the subtleties of technique: "Elle conserve ce qui est l'effet du véritable enthousiasme, elle proscriit ce qui est l'ouvrage de la fougue, & c'est ainsi qu'elle fait éclore les chefs-d'oeuvre."<sup>26</sup>

I shall discuss this particular manifestation of the separation of arbitrary and relative beauty in more detail when I consider the specific art of elocution.

The theory of absolute beauty is, as Professor Schwab has pointed out,<sup>27</sup> reminiscent of Cartesian innate ideas. Both suggest instinctive, automatic reaction to the presence of certain characteristics in works of art. But d'Alembert's statements on the nature of this absolute beauty are, as again Professor Schwab suggests, ambiguous. For instance in the appendix to "Gott" d'Alembert says:

. . . nous trouverons donc au-dedans de nous-mêmes, en y portant une vûe attentive, des regles générales & invariables de goût, qui seront comme la pierre de touche à l'épreuve de laquelle toutes les productions du talent pourront être soumises.<sup>28</sup>

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<sup>24</sup>Ibid.

<sup>25</sup>"Gott," Encyc., VII, 770.

<sup>26</sup>Ibid.

<sup>27</sup>Schwab, ed., Preliminary Discourse . . . , by d'Alembert, p. xxxvii.

<sup>28</sup>Encyc., VII, 768.

This statement does not apply, however, only to absolute beauty, but also to the relative sort, and it leads us away from the conclusion that relative beauty is to be judged only subjectively. The matter is more complicated than that. D'Alembert does in fact give a satisfactory resolution to the problem by introducing the concept of rules of convention. These rules, accepted by a comparatively restricted national, or even social group, are developed in the individual by years of conditioning. Thus, in the end, these rules are just as general and all-inclusive as those by which absolute beauty is judged.

For d'Alembert there is a difference, then, between art and technique, between expression which is aesthetically pleasing, and expression which merely shows polishing through the application of rational principles. In this sense d'Alembert shows kinship with the ideals of classicism, in which indeed art must imitate nature, but in which the value of the work of art is to be judged as well by its individually expressive qualities. For Boileau, even the horrible, accurately rendered, gains a certain artistic beauty:

Il n'est point de Serpent, ni de Monstre odieux,  
 Qui par l'art imité ne puisse plaire aux yeux.  
 D'un pinceau délicat l'artifice agreable  
 Du plus affreux objet fait un objet aimable.<sup>29</sup>

But the difference for d'Alembert between art and technique is emphasized by the common-sense separation of the liberal arts, to use his term, into the more obviously useful ones (grammar, logic, and morals),

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<sup>29</sup>Boileau, Art poétique (Chant III, vv. 1-4), p. 96.

and the fine arts. In the former group, rules can be taught, but in the latter, individual genius adds its personal, unlearned flamboyance:

Farmi les Arts libéraux qu'on a réduits à des principes, ceux qui se proposent l'imitation de la Nature, ont été appelés beaux Arts, parce qu'ils ont principalement l'agrément pour objet. Mais ce n'est pas la seule chose qui les distingue des Arts libéraux plus nécessaires ou plus utiles, comme la Grammaire, la Logique & la Morale. Ces derniers ont des règles fixes & arrêtées, que tout homme peut transmettre à un autre: au lieu que la pratique des beaux Arts consiste principalement dans une invention qui ne prend guère ses lois que du génie; les règles qu'on a écrites sur ces Arts n'en sont proprement que la partie mécanique; elles produisent à-peu-près l'effet du Téléscope, elles n'aident que ceux qui voyent.<sup>30</sup>

To be stressed in this distinction is the fact that the two groups of disciplines differ in the degree to which they are subjected to rule and imposed order, rather than merely in some essential difference of preoccupation.

The effect of the telescope of which d'Alembert speaks is to guide the artist in his creative effort, and also the observer in his appreciation of it. The rules which, says d'Alembert, are like a telescope for a man who can see, guide him towards a certain minimum acceptable standard of beauty. Unless the aspiring artist possesses some natural gift, the rules of his art are of no use to him whatsoever. The artist and observer each possess to a greater or lesser degree the gift of perceiving absolute beauty (indeed, as we have seen, all men possess it at least rudimentarily). But the perception of relative beauty is of a more personal nature; this is where the elusive faculty of taste must be considered. Indeed d'Alembert declares that taste is

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<sup>30</sup> Discours préliminaire, Encyc., I, xiii.



no more than "le sentiment délicat des convenances."<sup>31</sup> In this definition are two words which would seem to be incompatible bedfellows. How can "sentiment" exist together with "convenances"? How can sensibility dominate when there are rules to be obeyed? The answer is that the artist and the observer must be equally sensitive to what is in accepted good taste:

Le goût, quoique peu commun, n'est point arbitraire; cette vérité est également reconnue de ceux qui réduisent le goût à sentir, & de ceux qui veulent le contraindre à raisonner. Mais il n'étend pas son ressort sur toutes les beautés dont un ouvrage de l'art est susceptible. Il en est de frappantes & de sublimes qui saisissent également tous les esprits, que la nature produit sans effort dans tous les siècles & chez tous les peuples, & dont par conséquent tous les esprits, tous les siècles, & tous les peuples sont juges. Il en est qui ne touchent que les âmes sensibles & qui glissent sur les autres. Les beautés de cette espèce ne sont que du second ordre, car ce qui est grand est préférable à ce qui n'est que fin; elles sont néanmoins celles qui demandent le plus de sagacité pour être produites & de délicatesse pour être senties; aussi sont-elles plus fréquentes parmi les nations chez lesquelles les agréments de la société ont perfectionné l'art de vivre & de jouir. Ce genre de beautés faites pour le petit nombre, est proprement l'objet du goût, qu'on peut définir, "le talent de démêler dans les ouvrages de l'art ce qui doit plaire aux âmes sensibles & ce qui doit les blesser."<sup>32</sup>

This text is of great importance in fixing d'Alembert's conception of taste, embodying as it does the concepts of absolute and relative beauty, limiting the applicability of tasteful judgment to the latter sort, and injecting into the idea of tasteful judgment the principles of which a larger social group has approved. It would seem that between the realm of the perception of absolute beauty and sensibility of the most personal, liberated sort, lies a shady realm in which

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<sup>31</sup> Preface to the Eloges académiques, Oeuvres, II, 158.

<sup>32</sup> "Goût," Encyc., VII, 768.

agreed standards bear down upon the anarchically sensitive individual and force him to submit his judgment to those standards which his nation or his class deems tasteful. Thus, while the standards for judging absolute and relative beauty are both ingrained in us, the former are set there by nature, the latter by our society.

Taste seems, according to d'Alembert's conception, to demand the concord of judgments of both reason and feeling.<sup>33</sup> This standard is stressed again in the "Eloge de J.B. Dubos," a work written more than ten years after the appendix to "Goût":

L'abbé Dubos paraît surtout s'être occupé avec soin [dans ses Réflexions critiques sur la poésie et sur la peinture] de la question philosophique, "Si la discussion est préférable au sentiment pour juger les ouvrages de goût"; question si souvent agitée, et à laquelle peut-être il ne faut répondre que ces deux mots: "Sentez d'abord, et discutez ensuite"; car si le sentiment a bien jugé, la discussion confirmera l'arrêt qu'il a rendu.<sup>34</sup>

It is in this way that d'Alembert warns against excessive freedom of taste; in a word, sound judgment in these matters is a result of more than personal whim, the perception of relative beauty depending as it does to a certain extent on cultural conditioning.

But what of the substance of art? What of the classical ideal of the imitation of nature? D'Alembert, like so many other writers on

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<sup>33</sup>To be contrasted with this statement is Montesquieu's definition, given in the same article (Encyc., VII, 762): "L'avantage de découvrir avec finesse & avec promptitude la mesure du plaisir que chaque chose doit donner aux hommes." The emphasis is in this definition more on the realm of sentiment.

<sup>34</sup>Oeuvres, III, 207.

aesthetics in his century, showing so clearly his dependence on a classical framework even while reacting against it, gives attention to the question; his treatment of it, however, is brief and scattered and does not allow us to draw a forceful conclusion about his opinions. Imitation of nature is important for d'Alembert, at least in so far as a reasonable standard of verisimilitude is to be maintained. In the theatre, for example, observing the rules of unity renders the production easier to accept:

Où la vraisemblance n'est pas, l'intérêt ne saurait s'y trouver, au moins l'intérêt soutenu; car l'intérêt de la scène est fondé sur l'illusion, et l'illusion est bannie d'un théâtre où un coup de baguette transporte en un moment le spectateur d'une extrémité de la terre à l'autre, et où les acteurs chantent au lieu de parler.<sup>35</sup>

But art adds something to the brute matter which it presents; truthfulness alone is not enough to render a work worthy of attention... Cousin d'Avallon, in his D'Alembertiana, a collection of maxims and anecdotes, quotes d'Alembert as saying, concerning Richardson's long novels, "La nature est bonne à imiter, mais non pas jusqu'à l'ennui."<sup>36</sup> The principle of imitation implies a servile representation, while in reality art creates the objects it depicts. This is as true of poetry as it is of painting or sculpture:

La Poésie . . . qui n'emploie pour l'imitation que les mots disposés suivant une harmonie agréable à l'oreille, parle plutôt à l'imagination qu'aux sens; elle lui représente d'une manière vive &

<sup>35</sup>"De la liberté de la musique," Oeuvres, I, 523.

<sup>36</sup>D'Alembertiana, ou Recueil d'Anecdotes, Bons mots, Plaisanteries, Maximes, Réflexions, Sentences et Pensées de d'Alembert, suivi de Notes et d'Éclaircissemens relatifs à ce Philosophe, ed. C.-Y. Cousin d'Avallon (Paris: Davi and Locard, 1813), p. 42.

touchante les objets qui composent cet Univers, & semble plutôt les créer que les peindre, par la chaleur, le mouvement, & la vie qu'elle sait leur donner.<sup>37</sup>

Art has in a sense the task of objective representation, but personal nuance renders an artist and his work individual and, as we have seen, subject to judgment by the standards of taste. The imitation of nature for d'Alembert resolves itself into a more complex opposition of forces, where once more the meeting of realism and idealism is governed by the artist's tasteful judgment.<sup>38</sup>

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<sup>37</sup>Discours préliminaire, Encyc., I, xii.

<sup>38</sup>A well-known and noble attempt by the abbé Charles Batteux to unify the fine arts, entitled Les beaux arts réduits à un même principe, was first published in 1746 (my quotations are taken from the Saillant & Nyon and Desaint edition of 1773 [Reprint, Genève: Slatkine, 1969]). The single principle he advocates is "l'imitation de la belle Nature" (p. 30). This imitation must be on the one hand, he says, of the real world: "Le Génie qui travaille pour plaire, ne doit donc, ni ne peut sortir des bornes de la Nature même. Sa fonction consiste, non à imaginer ce qui ne peut être, mais à trouver ce qui est. Inventer dans les Arts, n'est point donner l'être à un objet, c'est le reconnoître où il est, & comme il est. Et les hommes de génie qui creusent le plus, ne découvrent que ce qui existoit auparavant." (pp. 31-32) But on the other hand, his definition of "la belle Nature" embodies the very opposite of realism: "Ce n'est pas le vrai qui est; mais le vrai qui peut être, le beau vrai, qui est représenté comme s'il existoit réellement, & avec toutes les perfections qu'il peut recevoir." (pp. 47-48)

The principle of Batteux is thus, at least by d'Alembert's definition, not a principle at all, embodying as it does that very contradiction which is evident to us when we consider the phrase "belle Nature" itself: "Nature" implies objective realism, but "belle" imposes on this realm an individual judgment of what is ideally beautiful.

Batteux's thesis received much criticism in the eighteenth century. Condillac, for example (in the Essai sur l'origine des connoissances humaines [Part II, Section I, Chap. ix, par. 78], in Oeuvres philosophiques de Condillac, I, 82) speaks of the necessary relativity of such a concept.

We have seen that beauty can be broken down into universal and relative elements, and that taste is to a certain extent governed by convention. What then, according to d'Alembert, is the rôle of talent? How does genius, which so obviously governs both the production and evaluation of works of art, make its presence felt? It must be stressed that although rules and principles do exist, the work of art created according to their standards achieves only a minimum of beauty, a necessary minimum, but only just sufficient for the creation to be classed as art.

Genius owes its origin to nothing but the whim of nature. The rules of art may guide the artist and aid him in polishing his product, but they cannot make his work intrinsically extraordinary:

La nature forme les hommes de génie, comme elle forme au sein de la terre les métaux précieux, bruts, informes, pleins d'alliage et de matières étrangères: l'art ne fait pour le génie que ce qu'il fait pour les métaux; il n'ajoute rien à leur substance, il les dégage de ce qu'ils ont d'étranger, et découvre l'ouvrage de la nature.<sup>39</sup>

Boileau too believes that poets are born and not made:

C'est en vain qu'au Parnasse un temeraire Auteur  
Pense de l'Art des Vers atteindre la hauteur.  
S'il ne sent point du Ciel l'influence secrete,  
Si son Astre en naissant ne l'a formé Poëte,<sup>40</sup>  
Dans son genie étroit il est toujours captif.

The family of superior intellects is set apart from ordinary men, and

<sup>39</sup>"Discours à l'Académie Française, le jour de sa réception à la place de M. l'évêque de Vence, le jeudi 19 décembre 1754," Oeuvres, IV, 306.

<sup>40</sup>Boileau, Art poétique (Chant I, vv. 1-5), p. 81.

bears only an exterior resemblance to the rest of the species;<sup>41</sup> in the words of Moi in Le Neveu de Rameau, the genius is "un dans la multitude."<sup>42</sup> D'Alembert and Diderot both in this respect build upon the classical idea of genius as an extraordinary ability to portray the sublime, the ineffable, the "je ne sais quoi."<sup>43</sup> But, as Professor Pappas has noted, Diderot goes further than d'Alembert with his idea that the poet of genius has a special enthusiasm and energy, an extraordinary vision which uncontrollably draws him on.<sup>44</sup>

But there is a hint of the mysteriously uncontrollable in d'Alembert's idea of genius as well, not as dominating of course as in Diderot's. The extraordinary intelligence with which a man of genius is gifted, is paralleled by extraordinary sensitivity to the beautiful, and to the displeasing:

. . . la sensibilité produit, comme l'odorat, les impressions les plus douces et les plus délicieuses dans ceux qu'une organisation délicate en a rendus susceptibles; mais . . . elle les rend aussi plus sujets aux impressions douloureuses, qui, par malheur, sont plus fréquentes pour eux que les impressions agréables, comme un odorat fin et délicieux trouve plus d'odeurs qui le blessent, que d'odeurs qui le flattent.<sup>45</sup>

The most exquisite impression remains hidden, unexpressed and

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<sup>41</sup>"Eloge de Despréaux," Oeuvres, II, 378.

<sup>42</sup>Diderot, Le Neveu de Rameau, ed. J. Fabre (Genève: Droz, 1963), p. 7.

<sup>43</sup>E.B.O. Bergerhoff, in The Freedom of French Classicism (Princeton: Princeton University Press, 1950), has stressed this side of seventeenth-century French aesthetic theory.

<sup>44</sup>J.N. Pappas, "L'Esprit de finesse contre l'esprit de géométrie: un débat entre Diderot et Alembert," p. 1237.

<sup>45</sup>"Eloge de Despréaux," Oeuvres, II, 401.

unexperienced, except "aux seules âmes dignes de l'éprouver."<sup>46</sup>  
 Sensitivity to outside stimuli is of course part of an empiricist concept of the nature of man; according to this view, all knowledge originates in sense experience. D'Alembert's parallel is a way of stressing that the genius is an exceptional being.

The artist in the grip of ingenious inspiration undergoes a sort of metamorphosis. In this state his talent alone speaks, and his art becomes as it were a medium for the expression of some uncontrollable inner force. Reason is of little importance in these most extraordinary moments of expression:

Qu'on interroge les écrivains de génie sur les plus beaux endroits de leurs ouvrages, ils avoueront que ces endroits sont presque toujours ceux qui leur ont le moins coûté, parce qu'ils ont été comme inspirés en les produisant.<sup>47</sup>

We have seen that the ability to reason is a characteristic that d'Alembert considers to be shared by all human beings. In his inspired moments the genius seemingly puts aside this characteristic, and his body becomes the slave or the robot of his talent.

Finally, in the midst of this cerebral tumult of sensitivity and creative ecstasy, are born those ideas which are not the native property of ordinary men:

Tous les hommes ont le même fond de pensées communes, que l'homme ordinaire exprime sans agrément, et l'homme d'esprit avec grâce; une grande idée n'appartient qu'aux grands génies; les esprits médiocres

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<sup>46</sup>Ibid., p. 361.

<sup>47</sup>"Elocution," Encyc., V, 521.

ne l'ont que par emprunt; ils montrent même, par les ornemens qu'ils lui prêtent, qu'elle n'était point chez eux dans son terroir naturel, et s'y trouvait dénaturée et transplantée.<sup>48</sup>

In the man of genius, to the depths of subtlety are thus added the heights of grandeur.

We have considered, in so far as they are treated by d'Alembert, the nature of the beautiful, of taste, and of genius. There remains to be discussed the communication by the artist of the aesthetically pleasing from his own mind to the mind of each admiring onlooker or listener. The paradoxical theory of Diderot is well known: "C'est l'extrême sensibilité qui fait les acteurs médiocres; c'est la sensibilité médiocre qui fait la multitude des mauvais acteurs; et c'est le manque absolu de sensibilité qui prépare les acteurs sublimes."<sup>49</sup> On this point d'Alembert is completely opposed: "En vain objecteroit-on encore qu'on peut toucher sans être touché, comme on peut convaincre sans être convaincu."<sup>50</sup> For him, as for Ruskin a century later, the work of art communicates, across centuries if need be, the emotional state of the artist, and produces in the observer an identical state, if the creative genius is matched by a like critical genius at the other end.

The example of this conception that d'Alembert elaborates most fully is that of rhetoric. There exists between the great orator and

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<sup>48</sup>"Réflexions sur l'élocution oratoire, et sur le style en général," Oeuvres, IV, 280.

<sup>49</sup>Paradoxe sur le comédien, in Oeuvres complètes de Diderot, VIII, 370.

<sup>50</sup>"Elocution," Encyc., V, 521.



the listener most worthy to hear him, between the creative genius and the critical genius, a sort of vibrant sympathy which is the mark of an equal degree of talent in both. Rhetorical language is a medium which is apart and separate, which traverses space by means of the words of the oration, but which has significance only to the initiate:

L'émotion communiée par l'orateur, bien loin d'être dans l'auditeur une marque certaine de son impuissance à produire des choses semblables à ce qu'il admire, est au contraire d'autant plus réelle & d'autant plus vive, que l'auditeur a plus de génie & de talent: pénétré au même degré que l'orateur, il auroit dit les mêmes choses: tant il est vrai que c'est dans le degré seul du sentiment que l'éloquence consiste.<sup>51</sup>

An eloquent oration communicates to the multitude, to "les âmes froides,"<sup>52</sup> only an "impression purement mécanique"<sup>53</sup> which is completely effaced in the ingenious listener, and is replaced by an image of the panoply of emotions which is in the mind of the orator.

In conclusion it may be noted that in general d'Alembert's aesthetic thought branches away from the imitative element of French classicism, but there is nonetheless marked kinship with other classical ideals. As Ernst Cassirer has pointed out, Cartesianism (specifically Cartesian analytic geometry) shares with classicism the desire to codify universal procedures.<sup>54</sup> Both Cartesianism and classicism are concerned with setting down reasoned, universal,

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<sup>51</sup>Ibid.

<sup>52</sup>"Réflexions sur l'élocution oratoire, et sur le style en général," Oeuvres, IV, 277.

<sup>53</sup>Ibid.

<sup>54</sup>Cassirer, The Philosophy of the Enlightenment, p. 288.

timeless standards of good taste.<sup>55</sup> D'Alembert is in agreement with all these opinions. But Cartesianism also abhors slavish imitation of ancient models:

La querelle des anciens et des modernes est la revanche de l'esprit cartésien sur le goût antique, de l'analyse sur la poésie, de l'idée sur la forme, de la science sur l'art. . . . Toutes les idées du parti des modernes sont des idées cartésiennes.<sup>56</sup>

And d'Alembert is in agreement with them too. Such a desire for order in aesthetic philosophy, the belief that the seventeenth and eighteenth centuries have witnessed progress in the arts, and the notion of aesthetic relativity (as laid down by Dubos and developed by Montesquieu) compose a fair summary of d'Alembert's aesthetics. In all these characteristics he shows kinship with diverse intellectual elements of his century; while maintaining a deep admiration for classical works, especially in the theatre, he breaks away from classical ideals of rule and standard. But his systematic conceptions of universal and relative beauty, of taste, and of genius constitute, it seems to me, an original approach.

Further elaboration of d'Alembert's aesthetic thought can now be accomplished more effectively by branching off into specific arts. Each of the three broad classifications which will now be considered (music, translation, and stylistics) involves, as we shall see, the blending of subjective and objective elements, and the imposition of judgments based on good taste.

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<sup>55</sup> Isabel F. Knight, The Geometric Spirit . . . , p. 179.

<sup>56</sup> Lanson, "L'influence de la philosophie cartésienne sur la littérature française," p. 78.

## Music

In 1752 d'Alembert published the first edition of his Elémens de musique théorique et pratique suivant les principes de M. Rameau. In this book he sets out Jean-Philippe Rameau's theory of harmony in a logical, clear, and accessible form. However he declines to subscribe to that part of the system in which the great composer has attempted a rationalistic reorientation of musical theory. According to Rameau all music as an art form can be made to conform to rigid mathematical rules. In other words, according to Rameau the aesthetic pleasures of music are in reality the result of the ordering of sound according to fixed, mathematically coherent relationships. And these relationships can be known by theorists.

D'Alembert's opinions about music and his relations with Rameau must be examined with reference to the musical controversies of the 1750's in France, in order to be understood. Was d'Alembert satisfied with Rameau's system, or was he not? What was his position in the "Querelle des bouffons," the great polemic battle between supporters of French and Italian music which raged at this time? And what of d'Alembert's involvement with the Encyclopédie? How did this affect his public stand? D'Alembert retained, throughout all these battles, a fixed attitude towards music; this attitude reflects the same dual concern for rules on one hand, and inspiration on the other, which marked his more general aesthetic theory, and indeed his whole philosophy. Apparent contradictions in his statements about music can be understood by bearing in mind this continuity, and the strains which controversies brought to bear upon it.

The "Querelle des bouffons" can be seen as another chapter in a very long-standing argument in France about the nature of opera.<sup>57</sup> French opera in the seventeenth century was largely a literary form; the value of a particular opera tended to be judged rather on the merits of the libretto than on the union of words, music, and stage action. Lully, an Italian, together with his librettist Quinault, elicited much critical furor by presenting simple poetry and music which enhanced the literal meaning of the words rather than competing with them.<sup>58</sup> Gradually opera critics came to recognize the value of such an innovation;<sup>59</sup> Saint-Evremond, Perrault, Dubos, André, and Bataillon all supported it.<sup>60</sup> Then when Rameau's musical works began to be produced, new fuel was added to the fire. His works were seen by many in the 1740's and 1750's to provide too elaborate a musical background for the libretto. Thus he carried Lully's innovation still further, by tempting the audience to forget the words altogether, submerged as they were in brilliant orchestral and vocal music. The "Querelle des bouffons" saw the proponents of Rameau's "French" opera (for so it had come to be regarded) pitted against the supporters of the simpler, lighter "Italian" opera, in which language and music were

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<sup>57</sup>When eighteenth-century critics refer specifically to music, they are usually referring to opera, since it was by far the single most important musical form to be exercised. (Paul Henry Lang, in "Music and the Court in the Eighteenth Century," a paper read before the McMaster University Association for Eighteenth Century Studies, October 21, 1972.)

<sup>58</sup>Alfred R. Oliver, The Encyclopedists as Critics of Music, pp. 4-5.

<sup>59</sup>Ibid., p. 5.

<sup>60</sup>Ibid., pp. 10-15.

brought together in a more harmonious fashion. In other words, the "Querelle" raged between the supporters of French baroque and Italian rococo.<sup>61</sup>

Traditionally the "Querelle" is judged to have begun after a troupe of Italian musicians, the "bouffons," brought Pergolesi's La serva padrona to Paris in 1752. This is wrong on two counts. The same Italian opera had already been presented in Paris, in 1746, and had caused no uproar.<sup>62</sup> And the opening salvo of the "Querelle" proper, Grimm's "Lettre sur Omphale," appeared in the Mercure before the explosive 1752 performance.<sup>63</sup> In any case, Rousseau became embroiled in the controversy with his "Lettre à M. Grimm au sujet des remarques ajoutées à sa lettre sur Omphale," in the April, 1752 issue of the Mercure.<sup>64</sup> In the ensuing months, polemic barbs were exchanged between the so-called "coin de la reine" (named from the section of the opera house they frequented), consisting mainly of Grimm, Rousseau, d'Holbach, and Diderot, and the "coin du roi," which included notably Rameau, Fréron, and Castel.<sup>65</sup>

Rousseau's own operetta Le Devin du Village opened on March 1,

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<sup>61</sup>Edward E. Lowinsky, "Taste, Style and Ideology in Eighteenth-Century Music," in Aspects of the Eighteenth Century, ed. Earl R. Wasserman (Baltimore: Johns Hopkins Press, 1965), p. 170.

<sup>62</sup>Colm Kiernan, "Rousseau and Music in the French Enlightenment," French Studies, XXVI (1972), p. 169.

<sup>63</sup>Oliver, p. 89.

<sup>64</sup>Ibid., p. 90.

<sup>65</sup>Ibid.

1753, after the original battle had somewhat subsided, and marked a triumph of Italian rococo style adapted to a French libretto.<sup>66</sup> And even later, in mid-November of the same year, he fired a parting salvo with his Lettre sur la musique française. In this work, he attacks the very adaptability of French to music: "S'il y a en Europe une langue propre à la musique, c'est certainement l'italienne . . . ."<sup>67</sup> As well he opposes the proliferation of instrumental parts in French (and notably Rameau's) scores: "Il faut . . . que l'accompagnement embellisse [le sujet] sans le couvrir ni le défigurer . . . ."<sup>68</sup> This work, which came after the most heated months of the "Querelle," summed up the position of the supporters of Italian music.

What of d'Alembert in all this? His most intimate associates of the time were deeply involved in the controversy, and he, as well as Diderot and Rousseau, was obviously one of the Encyclopaedists which the "coin du roi" attacked as a group. There exists a pamphlet attributed to d'Alembert, dated 1754, entitled "Réflexions sur la musique en général, et sur la musique françoise en particulier,"<sup>69</sup> which contains ideas in general agreement with those of the "coin de la

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<sup>66</sup>Lowinsky, pp. 193-201. Lowinsky notes, most strikingly, that while Rousseau's prose writings prepared in so many ways the outpourings of the late classical and early romantic periods in music (culminating with Beethoven), as a composer he remained a strict adherent of Italian rococo simplicity (p. 193).

<sup>67</sup>[Oeuvres] (Paris: Pourrat, 1838-39), XII, 270.

<sup>68</sup>Ibid., p. 283.

<sup>69</sup>The Bibliothèque Nationale's copy of this pamphlet is listed with the works of d'Alembert and bears his name on the title page, written in by a later hand. The pamphlet itself carries no indication of either its author or the place of publication. When I read the pamphlet I felt it lacked the finesse of expression which one expects in d'Alembert's writing, and concluded that at best the attribution was doubtful.

reine." As well, d'Alembert's contemporaries tended to group him with the Encyclopaedists in matters pertaining to the "Querelle," and he made no public objection to this classification.<sup>70</sup>

However, Professor Pappas has published a previously unknown fragment in which d'Alembert is openly disdainful of Italian opera.<sup>71</sup> And as for the pamphlet described in the preceding paragraph, Professor Pappas suggests that it may well have been written much before the "Querelle" ever broke out, and as such indicates d'Alembert's feelings at an earlier epoch.<sup>72</sup> Maurice Barthélemy, another critic who has studied d'Alembert's rôle in the "Querelle," is of the opinion that the pamphlet is not by d'Alembert at all.<sup>73</sup> But, if d'Alembert was partial to French opera, why did he not declare it openly? As Professor Pappas has suggested, d'Alembert, especially in the early years of the Encyclopédie, was a zealous supporter of the enterprise.<sup>74</sup> And this strong sense of belonging to a party prevented him from revealing his true position; the importance of the solidarity of the contributors was too great for him to class himself willingly with the "coin du roi."

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<sup>70</sup>John N. Pappas, "D'Alembert et la querelle des bouffons d'après des documents inédits," p. 479.

<sup>71</sup>Ibid., pp. 482-483.

<sup>72</sup>Ibid., p. 480.

<sup>73</sup>"Essai sur la position de d'Alembert dans la Querelle des Bouffons," pp. 164-165.

<sup>74</sup>Pappas, op. cit., p. 483.

This sense of party solidarity is also the basis for d'Alembert's seemingly paradoxical quarrel with Rameau. We have seen that d'Alembert's Elémens de musique is based on Rameau's theories and that he in large measure accepted them. Indeed, A.R. Oliver states that d'Alembert's presentation is still the best way of approaching Rameau's system, which is after all the basis of much of modern harmonic theory.<sup>75</sup> Why then did the immensely long and complicated polemic battle between Rameau and d'Alembert take place at all? Let us first of all trace the history of the controversy.

D'Alembert's name was first linked to Rameau's in connection with a paper Rameau read before the Academy of Sciences. This paper was accorded a favorable review by d'Alembert, Nicole, and Dortous de Mairan:

Ainsi l'harmonie assujétie communément à des loix assez arbitraires, ou suggérées par une expérience aveugle, est devenue, par le travail de M. RAMEAU, une Science plus géométrique, & à laquelle les Principes Mathématiques peuvent s'appliquer avec une utilité plus réelle & plus sensible, qu'ils ne l'ont été jusqu'ici.<sup>76</sup>

In 1752, as I have noted, d'Alembert's Elémens de musique appeared. This work elicited a glowing letter of praise from Rameau:

Parmi ces Sçavans, que je fais gloire d'appeller mes Juges & mes Maitres, il en est un que la simplicité de ses moeurs, l'élévation de ses sentiments, & l'étendue de ses connoissances me rendent singu-

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<sup>75</sup> Oliver, pp. 112, 157.

<sup>76</sup> "Extrait des Registres de l'Académie Royale des Sciences, du 10 Décembre 1749," in Complete Theoretical Writings, by Jean-Philippe Rameau, III, 245.



lièrement respectable. C'est de lui, Monsieur, que je reçois le témoignage le plus glorieux auquel l'ambition d'un Auteur puisse jamais aspirer.<sup>77</sup>

Soon, however, their relations began to sour.

A.R. Oliver tells us that Rameau had been asked to write the articles on music for the Encyclopédie, but had refused.<sup>78</sup> Rousseau and d'Alembert (especially the former), who did write the articles, gave Rameau a good treatment, but because they did not accept wholeheartedly his thesis that music is a mathematical science, he sulked.<sup>79</sup> From 1754 until after 1762, the date of the second edition of the Elémens de musique, a bitter quarrel took place, which really only ended with Rameau's death in 1764.

In 1754, Rameau published his Observations sur notre instinct pour la musique. In it he clarifies the theory to which Rousseau and d'Alembert had objected. We may take the position he holds in this work to be definitive and the basis for all his later polemic. Briefly, Rameau believed that a vibrating body (the "corps sonore") gives off vibrations (we call them "harmonics" or "overtones") which include all the notes of all chords that can possibly be built upon that bass note. This chordal structure of the sound produced by the vibrating body gives us a very fundamental idea of proportion (for example, the octave of a given note and the note itself are in a ratio

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<sup>77</sup>"Lettre de M. Rameau à l'Auteur du Mercur, Mercur de France, May, 1752, pp. 75-76.

<sup>78</sup>Oliver, p. 102.

<sup>79</sup>Ibid.

of two to one). Rameau says that harmonic vibrations are our best way of perceiving the basic ideas of proportion, which are the foundation and origin of all the exact sciences as well as of the fine arts:

Le Principe dont il s'agit, est non-seulement celui de tous les Arts de goût, . . . il l'est encore de toutes les Sciences soumises au calcul: ce qu'on ne peut nier, sans nier en même tems que ces Sciences ne soient fondées sur les proportions & progressions, dont la Nature nous fait part dans le Phénomène du Corps sonore, avec des circonstances si marquées, qu'il est impossible de se refuser à l'évidence; & comment le nier! puisque point de proportions, point de Géométrie.<sup>80</sup>

It is to be noted that Rameau does not say that music is the basis of all the sciences, or that the principle of the vibrating body is the basic principle of all knowledge. This is what d'Alembert claimed that Rameau said, and Rameau spent the next ten years defending himself.

In 1755 Rameau published his Erreurs sur la musique dans l'Encyclopédie, in which he repeats the idea that music gives us an insight into mankind's primitive notion of proportion. And then in 1756 we find the Suite to this work. In 1757 a Réponse de M. Rameau à MM. les éditeurs de l'Encyclopédie sur leur dernier Avertissement. In 1760, the Lettre à M. d'Alembert sur ses opinions en musique insérées dans les articles "Fondamental" & "Gamme" de l'Encyclopédie. Many other articles and pamphlets appeared as well, with similar titles and identical motives. In all of them the central argument is the same.

D'Alembert's response throughout the controversy is constant. He persists in misreading Rameau and misrepresenting the composer's ideas to a reading public which must have followed with flagging

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<sup>80</sup>Complete Theoretical Writings, III, 265.

enthusiasm so long a quarrel. His 1762 edition of the Elémens de musique contains a revised "Discours préliminaire" in which he restrains his objections to the principle of the vibrating body by saying that it is not essential for a theory of harmony:

Nous avons d'ailleurs banni de cette édition, comme nous l'avions fait de la première, toutes considérations sur les proportions & progressions géométriques, arithmétiques & harmoniques, qui paroissent résulter de la résonnance du corps sonore; parce qu'il nous a semblé que M. Rameau auroit pu se dispenser d'avoir aucun égard à ces proportions, dont nous croyons l'usage tout-à-fait inutile, & même, si nous l'osons dire, tout-à-fait illusoire dans la théorie de la Musique.<sup>81</sup>

He admits, however, that the principle may have some descriptive value:

Ainsi, quoique la plupart des phénomènes de l'Art musical paroissent se déduire d'une manière simple & facile, de la résonnance du corps sonore, on ne doit peut-être pas se hâter encore d'affirmer que cette résonnance est démonstrativement le principe unique de l'harmonie.<sup>82</sup>

But Rameau never claimed that harmony proceeded "démonstrativement" from the principle of the vibrating body. He too sets it out as merely a descriptive tool, a principle by which insight is gained into harmony, and, incidentally, but by no means unhappily for the rationalist, into the nature of all the sciences.

The consistent misrepresentation by d'Alembert of Rameau's aims was, I believe, part of the defence of the Encyclopédie. Rameau, one of the "coin du roi," was attacking the Encyclopaedists. While d'Alembert appreciated as well as Rameau the descriptive nature of the

<sup>81</sup>"Discours préliminaire de la nouvelle Edition des Elémens de Musique de M. d'Alembert," Mercur de France, Feb., 1762, pp. 125-126.

<sup>82</sup>Ibid., pp. 128-129.

latter's system, d'Alembert felt obliged to attack him in order to do his part to safeguard the enterprise. This is true in the earlier stages of the controversy, up to 1760, although by this time, of course, d'Alembert had resigned as co-editor. In the later stages, Rameau's statements became more categorical, and drove a probably annoyed d'Alembert to firmer attacks. It is a case, in my opinion, of a self-perpetuating quarrel, where the original argument seems to be lost. The d'Alembert-Rameau controversy is obviously not part of the "Querelle des bouffons."

With this background in mind we may proceed with exploring d'Alembert's own views on music. His rejection of Rameau's theory is, as we have seen, far from complete. He maintains that it is useful for setting out in a unified manner the rules of harmony, but that, like most systems, it is too pretentious and too far removed from reality. His pronouncements on music thus fall into three groups, which I shall now consider each in turn: the descriptive utility of Rameau's theory, the necessary intrusion of individually expressive elements into music, and the lessons which French music can learn about individual expression from Italian music.

In the introduction to the Elémens de musique d'Alembert reaffirms his belief in the existence of absolute beauty in the arts:

Ainsi les Arts dont nous jouissons, n'appartiennent pour la plupart à aucun homme en particulier, à aucune Nation exclusivement; ils appartiennent à l'humanité entière; ils sont le fruit des réflexions réunies & continuës de tous les hommes, de toutes les Nations & de tous les siècles.<sup>83</sup>

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<sup>83</sup>Ibid., p, 120.

We have seen that d'Alembert tempered this belief in the universality of art with prudent allowance for the intelligence of the observer and for his cultural conditioning. The statement we have just read is reminiscent of his support for the principles of universal grammar; both language and the appreciation of art seem to be based on certain shared principles. And just as the universal in language can be examined and codified, so too universal principles of music, principles which are of a mathematical and hence logical nature, can be amassed. But d'Alembert never neglects personal individuality in music: "On peut considérer la Musique ou comme un Art qui a pour objet l'un des principaux plaisirs des sens, ou comme une science par laquelle cet Art est réduit en principes."<sup>84</sup> The techniques of any art can be considered scientifically; a work can be analysed into its structural elements. But at the same time the unexpected in a work of art cannot be similarly subjected to analysis.

Musical theory is based first and foremost on observation:

Il en a été de la musique comme de tous les autres arts inventés par les hommes; le hasard a d'abord appris quelques faits: bientôt l'observation et la réflexion en ont découvert d'autres, et de ces différens faits rapprochés et réunis, les philosophes n'ont pas tardé à former un corps de science, qui s'est accru par degrés.<sup>85</sup>

Like grammar, musical theory is thus essentially descriptive; and like universal grammar, which is to provide the basis for a clearer, more

<sup>84</sup> Ibid., p. 117.

<sup>85</sup> "Réflexions sur la théorie de la Musique," Oeuvres et correspondances inédites de d'Alembert, ed. Charles Henry (Paris: Perrin, 1887 [Reprint, Genève: Slatkine, 1967]), p. 131.

universally understood mode of expression, so the new systematic theory of melody and harmony aims at revealing new pleasures to the ear:

La théorie de la musique, si une fois elle étoit trouvée, ne seroit pas, comme on pourroit d'abord le croire, un objet de spéculation pure, qui consisteroit à expliquer bien ou mal le plaisir que nous font éprouver la mélodie et l'harmonie. En découvrant les vraies sources de ce plaisir, nous pourrions y trouver des moyens de nous procurer en ce genre des plaisirs nouveaux. Il en seroit alors de la musique comme de la construction des lunettes, qui a reçue de si grands degrés de perfection depuis qu'on a trouvé les véritables loix de la réfraction de la lumière.<sup>86</sup>

We may conclude then that d'Alembert realizes that the aims and methods of Rameau and his followers are at least coherent, even if their ears are deaf to some sounds which their system does not explain.

Rameau, as we have seen, tried to prove that all the rules of harmony can be deduced from one experiment, that the notes, other than the fundamental, which form a chord, can be deduced from the structure of the vibrating body itself. The reverse of this was also claimed to be true: that for any given chord, whether or not it contains the fundamental, a description of the vibrating body can be formulated by inductive reasoning. D'Alembert is enough of a rationalist to appreciate the effort and even to recognize the descriptive validity of the results: "M. Rameau a déduit sans doute avec vraisemblance de la résonance du corps sonore, les principales regles de l'harmonie . . . ."<sup>87</sup> But he adds, and here again we realize that even this logically coherent system does not necessarily provide a sufficient explanation of all factors involved:

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<sup>86</sup>Ibid., p. 142.

<sup>87</sup>"Fondamental," Encyc., VII, 59.

. . . la plupart de ces regles sont uniquement l'ouvrage de la réflexion qui a tiré de cette résonnance des conclusions plus ou moins directes, plus ou moins détournées, plus ou moins rigoureuses . . . , & nullement l'ouvrage de la nature . . . .<sup>88</sup>

The aim of the Elémens de musique is not to destroy Rameau's theory, but rather to put it into its correct context:

Il ne s'agit point ici, nous le répétons, du principe physique de la résonnance des corps sonores, qu'on a vainement cherché jusqu'ici, & que peut-être on cherchera longtemps en vain; il s'agit encore moins du principe métaphysique du sentiment de l'harmonie, principe encore moins connu, & qui selon toutes les apparences restera toujours couvert de nuages. Il s'agit uniquement de faire voir comment on peut déduire d'une seule expérience les principales loix de l'harmonie, que les Artistes n'ont trouvées, pour ainsi dire, qu'à tâtons.<sup>89</sup>

Like any good scientific theory, d'Alembert's formulation of the rules of harmony is thus to show a deduction, from one principle, of those rules which were based originally on only a subjective evaluation.

It has seemed evident in our discussion of d'Alembert's aesthetics that for him the universal and relative elements of an art can be recognized and set apart. So it is of music. In his "Réflexions sur la théorie de la Musique," which is dated 1777 by Charles Henry and seems therefore to reflect the views of d'Alembert's last years, the philosopher sets down this division in a very determined fashion:

L'harmonie est pourtant dans la nature, car il est certain qu'un son simple en apparence en renferme plusieurs autres; il est vrai que l'harmonie donnée par la nature est bien moins composée que celle de nos concerts; mais l'art ne peut-il pas ajouter sur ce point à la

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<sup>88</sup>Ibid.

<sup>89</sup>"Discours préliminaire de la nouvelle Edition des Elémens de Musique de M. d'Alembert," p. 138.

nature? Voilà du moins ce qu'il a tâché de faire et tel est l'objet principal de la théorie de la musique.<sup>90</sup>

As in the case of aesthetics in general, deduction from rules does not produce a great piece of music. Such deduction can help us to understand a work and appreciate the intricacies of its structure, but at the same time both the composer in his creating and the listener in his contemplating must give free rein to their emotions.<sup>91</sup>

This unknown, untouchable element of music, an element which defies logical ordering, is found elsewhere than in those superficial structures which admit of mathematical description: "Il entrera toujours dans la théorie des phénomènes musicaux une sorte de Métaphysique que ces phénomènes supposent implicitement, & qui y porte son obscurité naturelle . . . ."<sup>92</sup> D'Alembert, unlike Rameau, does not attempt a more far-reaching elaboration of his logical system. He has too great a respect for beauty in its chaotic, individual sense, to force it into a rationalist mould. Instead, he analyses it in order to discover new, non-mathematical principles. The principles are that of a special kind of imitation, and that of the awakening by music of other senses than hearing, by a sort of analogy.

In his "Salons" Diderot praises those paintings which move him by the force of their moral message. Without going so far as to say

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<sup>90</sup>Oeuvres et correspondances inédites de d'Alembert, p. 137.

<sup>91</sup>For a fuller discussion of this passage and of its embodiment of much of d'Alembert's philosophy, see Appendix C.

<sup>92</sup>"Discours préliminaire de la nouvelle Edition des Elémens de Musique de M. d'Alembert," pp. 126-127.



that music should portray moral truths, d'Alembert resembles his co-editor in that both expect art to express thoughts or emotions which resonate in the minds and hearts of sympathetic observers: "Toute Musique qui ne peint rien n'est que du bruit; & sans l'habitude qui dénature tout, elle ne feroit guere plus de plaisir qu'une suite de mots harmonieux & sonores dénués d'ordre & de liaison."<sup>93</sup> Later, in his essay "De la liberté de la musique," he expresses a similar thought: "Les auteurs qui composent de la musique instrumentale ne feront qu'un vain bruit, tant qu'ils n'auront pas dans la tête, à l'exemple, dit-on, du célèbre Tartini, une action ou une expression à peindre."<sup>94</sup> In addition, music, like the alexandrines of Racine, lends itself by its evocative power to the expression of extreme emotions and lofty thoughts:

La musique n'est point une langue ordinaire et naturelle: c'est une langue "de charge," peu faite par conséquent pour exprimer les choses indifférentes ou les pensées communes; elle n'est propre par sa nature qu'à rendre avec énergie les impressions vives, les sentimens profonds, les passions violentes, ou à peindre les objets qui les font naître.<sup>95</sup>

This reminds us of the abbé Batteux's theory of "l'imitation de la belle Nature." To a certain extent, it is true, d'Alembert is advocating such an imitation, but instead of losing himself in this impossible definition, he theorizes that music must cause the rebirth of emotions

<sup>93</sup>Discours préliminaire, Encyc., I, xii.

<sup>94</sup>Oeuvres, I, 544. A.R. Oliver tells us that d'Alembert's statements on the necessity of imitative interest in music were taken as definitive formulations of the question by many subsequent critics (see Oliver, pp. 138, 144, 146, 150).

<sup>95</sup>"De la liberté de la musique," Oeuvres, I, 530.

associated with other sensations. Thus music does not describe natural phenomena; rather it suggests to the listener emotions similar to those he would experience faced with these phenomena. Thus, imitation in music is based, for d'Alembert, on a kind of analogy.

This kind of analogy, by which one sense provides us with ideas which we normally obtain through other senses, is a common subject of discussion among d'Alembert's contemporaries. An example is Castel's famous "colour organ," which, instead of producing a variety of notes when different keys were pressed, showed instead a variety of colours. These colours were to convey to the observer ideas of harmony and discord in just as effective a manner as sound does to a listener. And as Diderot's Lettre sur les aveugles illustrates, there was a good deal of debate on whether a person blind from birth would be able, on gaining his sight, to make the same kinds of distinctions (between a sphere and a cube, for example) using his newly acquired vision, as he had learned to make using his sense of touch. This sort of conjecture does not go so far as that of Rimbaud in "Voyelles," or of Baudelaire in "Correspondances." These are examples of pure synaesthesia, in which identical simple ideas are conveyed with equal force and clarity by two different senses. But the kind of analogy which d'Alembert suggests, is merely the similarity of moods evoked by two different sets of sensations, one musical, and the other proceeding from a natural source through some other sense than that of hearing.

In general, a work of art must, to carry its message effectively, present a pleasing aspect to the observer:

. . . la première condition [d'une évocation] est que nous recevions du plaisir par la sensation directe, avant que de chercher dans cette sensation la source d'un plaisir qu'elle ne peut nous procurer par elle-même, mais dont elle nous rappelle l'idée ou du moins le souvenir.<sup>96</sup>

This acts as a piece of bait to entice the observer towards the central, less accessible message of the music.

In a letter to Frederick the Great dated April 10, 1767,

d'Alembert writes:

. . . il s'en faut bien que je croie la musique capable de tout peindre; je crois seulement et j'ai dit qu'elle peut, par ses sons, nous mettre quelquefois dans une situation semblable à celle où nous mettent certains objets de la vue, et par là nous rappeler l'idée de ces objets.<sup>97</sup>

The similarity of the music to a certain viewed object is compared in an earlier work to the designation of an object and a sound which affect us similarly, by synonymous words:

Un objet effrayant, un bruit terrible, produisent chacun en nous une émotion par laquelle nous pouvons jusqu'à un certain point les rapprocher, & que nous désignons souvent dans l'un & l'autre cas, ou par le même nom, ou par des noms synonymes.<sup>98</sup>

This parallel between music and language is expressed as well in an "Eclaircissement" to the Elémens de philosophie (from the same year as the letter to Frederick): .

Cette analogie plus ou moins imparfaite par laquelle on transporte au sens de l'ouïe des expressions propres au sens de la vue, peut aussi,

<sup>96</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 245.

<sup>97</sup>Oeuvres, V, 270.

<sup>98</sup>Discours préliminaire, Encyc., I, xii.

ce me semble, avoir lieu jusqu'à un certain point dans la musique, et lui fournir des peintures, à la vérité très-imparfaites, d'objets qu'elle ne semble pas faite pour représenter. Si j'avais à exprimer musicalement le feu, qui dans la séparation des élémens prend sa place au plus haut lieu, pourquoi ne le pourrais-je pas jusqu'à un certain point par une suite de sons qui iraient en s'élevant avec rapidité? Je prie les philosophes de faire attention qu'en ce cas la musique serait parfaitement analogue à ces deux phrases, également admises dans la langue; "le feu s'élève avec rapidité"; "des sons qui s'élèvent avec rapidité." La musique ne fait autre chose que réunir en quelque sorte ces deux phrases dans un seul effet, en mettant "le son" à la place "du feu": la musique réveille en nous l'idée attachée à ces mots, "s'élever avec rapidité"; nous n'avons plus qu'à la transporter du son, qui est l'objet matériel dont la musique se sert, au feu, qui est l'objet qu'elle se propose de peindre.<sup>99</sup>

This is the clearest exposition that we find in d'Alembert of the kind of analogy which I have just discussed. He explains that when a phenomenon and the structure of its musical representation can each be expressed in words which take the form of similarly constructed sentences, then the phenomenon and its representation are equivalent. Here the criterion of equivalence is the similarity of the two descriptive sentences, one evoking the music, and the other the fire. Since the two sentences are in fact so alike, they must affect the reader in a similar manner; the extrapolation to the phenomenon and the musical description is then easy to make.

In spite of his reticence in the "Querelle des bouffons," and perhaps his preference for French style in opera, d'Alembert believes that Italian music seems to avoid some of the coldness of the rationalistic forms of French music by injecting living, inventive warmth into less firmly regulated structures. In his "De la liberté de la musique" of 1759, which is very much a work in which he tries to reconcile the

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<sup>99</sup>Oeuvres, I, 243-244.

two sides in the long subdud "Querelle," he is very generous towards Italian music. The purpose of this conciliatory attitude, of course, is to bring the best of Italian music to the French form. To "la richesse, la chaleur et la variété"<sup>100</sup> of Italian music, d'Alembert contrasts "notre monotonie," "notre froideur," and "notre indigence."<sup>101</sup> Italian music is more natural: in the recitative of Italian opera the cadences fall on rich sonorous vowels, rather than on the mute ones, as they do in French opera.<sup>102</sup> And Rameau, with his weighty theories, cannot be compared to the Italian composer who writes a good opera:

L'artiste qui crée et qui réussit est bien préférable au philosophe qui raisonne; aussi ne songe-t-on guère à donner des préceptes, quand on est en état de fournir des modèles. Raphaël n'a point fait de dissertations, mais des tableaux. En musique nous écrivons, et les Italiens exécutent.<sup>103</sup>

D'Alembert recognizes that French music may have the logical simplicity which obedience to ordered, systematic rules can give, but this does not necessarily make it attractive:

En vain les partisans de la musique française, pour couvrir sa nullité et sa faiblesse, affectent de vanter le "beau simple," qui en fait selon eux le caractère; de ce que le beau est toujours simple, ils en concluent que le simple est toujours beau; et ils appellent "simple" ce qui est froid et commun, sans force, sans âme, et sans idée.<sup>104</sup>

<sup>100</sup>"De la liberté de la musique," Oeuvres, I, 528.

<sup>101</sup>Ibid.

<sup>102</sup>Ibid., p. 529. D'Alembert devotes attention to this subject in his "Fragment sur la musique en général et la nôtre en particulier." As M. Barthélemy points out, this subject was a common one at the time, and even those who supported French opera indulged in it ("Essai sur la position de d'Alembert dans la Querelle des Bouffons," p. 167).

<sup>103</sup>"De la liberté de la musique," Oeuvres, I, p. 546.

<sup>104</sup>Ibid., p. 527.

In this way d'Alembert condemns an art form which submits too rigorously to rationalistic principles, and sets against it a school of composition and performance which to him seems more natural, more evocative, and more inventive.

We have seen how d'Alembert rejects a theoretical structure which, out of respect for its principles, loses sight of its original purpose. There is in music, as in the other arts, a beauty which, since it can be seen to derive from certain fixed principles, reflects the universal logical character of the human mind and hence takes on the nature of an absolute. But on the other hand there is a relative beauty which gains expressive force by being liberated from these principles, which expresses something more personal and more lyrical. Rameau's work proved to be useful for simplifying the laws of harmony, but Italian music shows a healthy ingestion of more lyrical elements which allow it to express in a more captivating and truthful way those thoughts and emotions which people the composer's mind.

#### Translation

Other than expository prose-writing, the only art in which d'Alembert's production reached a substantial volume was translation. He did leave fragments of fictional prose, but they seem no more than theatrical renderings of theoretical material.<sup>105</sup> Although correct

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<sup>105</sup>The "Dialogue entre la Poésie et la Philosophie, pour servir de préliminaire et de base à un traité de paix et d'amitié entre l'une et l'autre" (*Oeuvres*, IV, 373-381), and the "Dialogue entre Descartes et Christine, reine de Suède, aux Champs Elysées" (*Ibid.*, pp. 468-475).

and elegant, his verse is undistinguished. But his translations from Latin, notably from Tacitus, gave him the opportunity to practise with success the intricacies of an art.<sup>106</sup> These translations also furnish a pretext for dissertations on the relationships between languages, and the relativity of our evaluation of writings in languages not our own. Principal among these dissertations are "Sur l'harmonie des langues, et en particulier sur celle qu'on croit sentir dans les langues mortes,"<sup>107</sup> "Sur la latinité des modernes,"<sup>108</sup> and the introduction to his translations from Tacitus, "Observations sur l'art de traduire en général, et sur cet essai de traduction en particulier."<sup>109</sup>

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<sup>106</sup>Critical evaluations of d'Alembert's Morceaux choisis de Tacite (Oeuvres, IV, 43-210) have not been kind. Jürgen von Stackelberg reproaches d'Alembert with having tried to restate in a different style Tacitus' prose ("Rousseau, d'Alembert et Diderot traducteurs de Tacite," p. 401): "Avec sa traduction de Tacite . . ., D'Alembert fait oeuvre de vulgarisation. Il veut apparemment rendre accessible à un public plus large, cultivé mais gâté par la lecture de romans faciles, cet auteur difficile et exigeant. Ainsi, il fallait vêtir Tacite plus élégamment, niveler ses aspérités, qui en font le relief, polir les rudesses de son style. Le résultat n'est pas satisfaisant. Il n'était pas possible de faire parler à Tacite le langage des salons du XVIII<sup>e</sup> siècle." His conclusion is that these three translators of Tacitus each had a different purpose in mind (p. 407): "Rousseau rend Tacite grandiloquent, D'Alembert le rend accessible à tous, Diderot le dramatise." Raymond Trousson ("Jean-Jacques Rousseau traducteur de Tacite," p. 243) adds that d'Alembert's translation is "un texte sans âme et d'une rare banalité." The Morceaux choisis is written in d'Alembert's close, precise style, which might to readers of Rousseau's translation seem banal; on this point d'Alembert clearly suffers by comparison. However Stackelberg's evaluation is just; the weaknesses of the Morceaux choisis which he mentions are inevitable when a translator has such an aim as d'Alembert's in mind.

<sup>107</sup>Oeuvres, IV, 11-17.

<sup>108</sup>Ibid., pp. 17-28.

<sup>109</sup>Ibid., pp. 31-42.

There are as well many references elsewhere, as we shall see, to these and related matters.

Our interest in d'Alembert's translations, and especially in his statements about translation, derives not merely from the fact that this art is of linguistic concern. More explicitly we find that translation is another activity in which personal and imitative elements are necessarily mixed, and in which the aesthetic principles we have already seen are again of great importance. From d'Alembert's conception of the fundamental nature of translation, we shall proceed to an examination of some of the thornier problems which a translator faces. Finally, we shall examine as a corollary to d'Alembert's basic attitude, his scepticism about our ability to learn any ancient language well.

First of all, d'Alembert sees in translation an exercise in sorting out the subtleties of meaning which pepper the lexicon of any language:

"Si vous traduisez toujours," dit l'auteur des Lettres persannes, "on ne vous traduira jamais"; il aurait pu ajouter: "Si vous voulez qu'on vous traduise un jour, commencez par traduire vous-même." Cette règle n'a peut-être d'exception que pour un très-petit nombre de génies supérieures, qui, sortant tout formés des mains de la nature, n'ont besoin ni de maître, ni de modèle; le travail de la traduction serait pour tous les autres une riche moisson de principes et d'idées, et une excellente école dans l'art d'écrire.<sup>110</sup>

Although his own translations are mostly the product of the end of his career, d'Alembert perhaps considers them to be a striving towards the ideas and style of a long-dead master and model; but the kinds of

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<sup>110</sup>"Eloge de Sacy," Oeuvres, III, 64.



difficulties which he brings to light and which I shall now discuss, remind us of the problem of maintaining a balance between a rigorous exactitude and the call of his own creative and critical talent.

Translation, says d'Alembert, makes some of the same demands that writing in general does:

Une des grandes difficultés de l'art d'écrire, et principalement des traductions, est de savoir jusqu'à quel point on peut sacrifier l'énergie à la noblesse, la correction à la facilité, la justesse rigoureuse à la mécanique du style. La raison est un juge sévère qu'il faut craindre, l'oreille un juge orgueilleux qu'il faut ménager.<sup>111</sup>

Here lies the principal difficulty of the translator: to maintain a high standard of accuracy in conveying the meaning of a passage, and yet not sacrifice stylistic excellence either in the final form of the translation itself, or in rendering the style of the original. Reason, on one hand, is to be respected, and on the other, the translator's own creativity must not be suppressed: "Le traducteur copie avec des couleurs qui lui sont propres."<sup>112</sup> But the art of translation involves more than conveying the meaning and style of an author in an artistic way.

The fundamental problem of translation lies with the fact that no two languages are exactly and at all points equivalent:

. . . il n'y a point de langue qui ne puisse rendre par un seul mot certaines idées qu'une autre langue ne pourrait développer que par une périphrase; il n'y en a point qui ne puisse exprimer, par des mots ou

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<sup>111</sup>Observations sur l'art de traduire en général, et sur cet essai de traduction en particulier," Oeuvres, IV, 32.

<sup>112</sup>Ibid., p. 34.

plus courts ou plus sonores, certaines idées qu'une autre langue serait forcée de rendre par des mots ou plus longs ou plus sourds . . . .<sup>113</sup>

The result of these differences is that while one thought may better be expressed in Latin, another may better be expressed in French: "Il n'y a point d'ouvrage écrit originairement dans une langue, qui étant traduit dans une autre, ne doive à certains égards y perdre plus ou moins, et y gagner plus ou moins à d'autres."<sup>114</sup> In other words, a literal translation is almost always impossible.<sup>115</sup>

If then one cannot translate word for word, one must compromise and try to reproduce the meaning of the selection. D'Alembert himself declares, concerning his own translations, "J'ai tâché enfin de rendre l'esprit, lorsque je n'ai pu rendre les mots."<sup>116</sup> In this way an author's meaning is assuredly expressed in a translation of his works: "L'esprit, au moins quand il mérite ce nom, peut toujours se traduire; malheur à celui qui disparaît en passant d'une langue dans une autre."<sup>117</sup> But the difficulties are multiplied as soon as the characteristics which one wishes to seize in one's source become more personal. Good taste and a brilliant style, for example, present far greater problems than more tangible qualities.<sup>118</sup>

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<sup>113</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 259.

<sup>114</sup>Ibid.

<sup>115</sup>"Observations sur l'art de traduire . . .," Oeuvres, IV, 32.

<sup>116</sup>Ibid., p. 40.

<sup>117</sup>"Eloge de Sacy," Oeuvres, III, 65. (I have chosen to translate "esprit" in this case by "meaning.")

<sup>118</sup>Ibid.

An illustration of this hierarchy of translatable characteristics is provided in d'Alembert's criticism of translations by Bouhier and the abbé d'Olivet of Cicero's Tusculanae Disputationes. His comments in the "Eloge de Jean Bouhier" are open and frank:

Mais peut-être aussi pourrait-on désirer, dans l'une et dans l'autre, cette douce élégance de style, cette facilité, cette rondeur, cette harmonie, en un mot, cette diction pleine de grâces, de noblesse et d'intérêt, qui caractérise l'original . . . .<sup>119</sup>

He goes on to say that while Latin has "abondance" and "liberté," French is a language which is "aride, pauvre et contrainte,"<sup>120</sup> which cannot provide the materials for a proper translation. D'Alembert's disapproval is more veiled in the "Eloge d'Olivet":

Des juges plus délicats ou plus difficiles décideront si, au mérite de l'exactitude et d'une diction pure, ces versions joignent celui de l'élégance et des grâces qu'on doit désirer dans un traducteur de Cicéron; si l'on trouve dans l'abbé d'Olivet cette heureuse aisance, ce choix et cette noblesse d'expression jointe à la plus aimable simplicité, et surtout cette harmonie si douce et si facile qui caractérise les ouvrages de l'orateur romain; qualités si propres tout à la fois, et à charmer ceux qui lisent Cicéron dans sa langue originale, et presque à désespérer ceux qui voudront faire passer dans notre langue, non pas seulement les traits grossiers de son visage, mais le caractère intéressant de sa physionomie, et la mélodie séduisante de son style.<sup>121</sup>

Both quotations mention that the modern translations lack the "élégance" and "grâce" of the original texts. The abbé d'Olivet's version has exactitude and purity of expression, but so much of what is subtle and individual about Cicero's prose remains, in spite of the translator's

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<sup>119</sup>Oeuvres, III, 324.

<sup>120</sup>Ibid.

<sup>121</sup>Ibid., p. 626.

best efforts, imprisoned in the Latin. That which can best be translated, is that which can best be reproduced by equivalent expressions in the language of the selection's rebirth. Words and their strict meaning can thus be translated; the individuality of a certain turn of phrase, or the mood of a whole work, cannot. The genius of the translator must, in this latter case, be given liberty to express in a new and individual way what is striking but untranslatable in the original.<sup>122</sup>

The translation of poetry presents a special problem because here one must choose the medium in which the translation is to appear. D'Alembert concludes that despite the added difficulties poetry must be translated in poetic form; prose will not do. But the complications are enormous:

Cette question [si on doit traduire les poètes en vers] serait bientôt décidée, si l'on pouvait donner aux traducteurs-poètes le secret si difficile de s'assujétir en même temps à la contrainte de la ressemblance et à celle de la mesure et de la rime, sans renoncer aux autres qualités indispensables qu'exige un bon ouvrage en vers, l'élégance, la facilité, les images et l'harmonie.<sup>123</sup>

D'Alembert's reasons for maintaining this position are more complex than a mere unthinking respect for the inviolability of poetic form. He believes that the language of poetry is different from that of prose. One quality which poetry does not always share with prose is the melodious and pleasing succession of sounds which a

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<sup>122</sup>Cf. "Observations sur l'art de traduire . . .," Oeuvres, IV, 37: "[Le traducteur doit] savoir risquer des expressions nouvelles, pour rendre certaines expressions vives et énergiques de l'original."

<sup>123</sup>"Eloge de Jean Bouhier," Oeuvres, III, 324.

good poet provides:

L'harmonie est sans doute l'ame de la poésie, & c'est pour cela que les traductions des Poëtes ne doivent être qu'en vers; car traduire un poëte en prose, c'est le dénaturer tout-à-fait, c'est à-peu-près comme si l'on vouloit traduire de la musique italienne en musique française.<sup>124</sup>

Another distinguishing characteristic of poetry is that poetic expression is "hors du langage ordinaire."<sup>125</sup> It is "une langue peu commune,"<sup>126</sup> which requires rhythm and melody to reinforce its message.

But d'Alembert remains sceptical about the possibility of achieving these aims:

Traduire un poëte en prose, c'est mettre en récitatif un air mesuré; le traduire en vers, c'est changer un air mesuré en un autre qui peut ne lui céder en rien, mais qui n'est pas le même. D'un côté, c'est une copie ressemblante, mais faible; de l'autre, c'est un ouvrage sur le même sujet, plutôt qu'une copie.<sup>127</sup>

An accurate, truthful translation of poetry is thus impossible, and to appreciate poetry in another language one has no recourse but to learn that language.<sup>128</sup>

But even concerning this recourse d'Alembert is sceptical.

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<sup>124</sup>"Elocution," Encyc., V, 524. D'Alembert explains in "Sur l'harmonie des langues, et en particulier sur celle qu'on croit sentir dans les langues mortes" (Oeuvres, IV, 12) that by "harmonie" in this sense one really means "mélodie," and refers to a succession of sounds rather than to a combination of them.

<sup>125</sup>"Eloge de Mirabaud," Oeuvres, III, 529.

<sup>126</sup>Ibid.

<sup>127</sup>"Observations sur l'art de traduire . . .," Oeuvres, IV, 35.

<sup>128</sup>Ibid.

Especially with regard to ancient languages, then still of such great importance for everyone's general education and culture, he doubts the legitimacy of a claim to know another idiom as well as one's own. He declares that one can only know a dead language "très-mal."<sup>129</sup>

What then of those learned folk who insist on writing their verse in Latin? D'Alembert quotes Boileau, calling them "les singes modernes de la latinité ancienne."<sup>130</sup> His admiration for Jean Bernoulli's poetic efforts is not without glaring reservations:

Il faisait quelquefois pour se délasser, des vers latins, peut-être aussi mal qu'un homme né à Pékin ferait des vers français, mais assez bien cependant pour pouvoir tenir un rang honorable parmi la foule des modernes qui ont mieux aimé parler une langue morte que la leur.<sup>131</sup>

Even the incomparable Racine receives begrudging praise for his Latin poetry: "Ces vers ont même du feu et de l'harmonie, autant du moins qu'il est permis à un moderne d'en juger . . . ."<sup>132</sup>

What is the basis for his opinion that no one can really claim to know Latin or Greek well? First of all, empirical evidence points to some puzzling facts: each nation pronounces Latin differently, yet each claims to sense the beauties of the "harmonie" of the language.<sup>133</sup>

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<sup>129</sup>"Sur l'harmonie des langues . . .," Oeuvres, IV, 11.

<sup>130</sup>"Eloge de Fléchier," Oeuvres, II, 321.

<sup>131</sup>"Eloge de Bernoulli," Oeuvres, III, 358.

<sup>132</sup>"Eloge de Despréaux," Oeuvres, II, 411.

<sup>133</sup>"Sur l'harmonie des langues . . .," Oeuvres, IV, 12. Dubos (Réflexions critiques sur la poésie et sur la peinture, I, 364) holds the same opinion: "Les vers Latins n'ont pas naturellement le même pouvoir sur une oreille Française, qu'ils avoient sur une oreille Latine."

D'Alembert quotes a long passage from Cicero where the orator explains the nuances which distinguish those words signifying pain, an explanation which could never be found in a contemporary dictionary. This passage should convince us, says d'Alembert, that like subtleties could well exist, unbeknown to us, in other sets of synonyms:

. . . si les anciens avaient pris soin de définir ainsi tous les mots, nous verrions entre ces mots une infinité de nuances qui nous échappent dans une langue morte, et qui doivent nous faire sentir combien le premier des humanistes modernes, morts ou vivans, est éloigné de savoir le latin.<sup>134</sup>

The value of most inversions in Latin is likewise a mystery.<sup>135</sup> In the article "Collège," over which d'Alembert was embroiled in the "affaire Tolomas" from the end of 1754 through the first half of 1755,<sup>136</sup> he attacks the teaching of Latin as a living language. Teach it to a pupil to enable him to read Horace and Tacitus, if you will, but do not expect him to try to write it as they do.<sup>137</sup>

Is there any value, then, in learning to write Latin? Yes, according to d'Alembert; it should serve as an international language of scientific and philosophical learning, both because it is a language which is taught everywhere in the western world, and because the meanings of words can be precisely defined:

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<sup>134</sup>"Douleur, chagrin, tristesse, affliction, désolation," in *Synonymes*, *Oeuvres*, IV, 261-262.

<sup>135</sup>"Sur la latinité des modernes," *Oeuvres*, IV, 18.

<sup>136</sup>Grimsley, *Jean d'Alembert*, pp. 34-41.

<sup>137</sup>*Encyc.*, III, 636.

L'usage de la langue Latine, dont nous avons fait voir le ridicule dans les matieres de goût, ne pourroit être que très-utile dans les Ouvrages de Philosophie, dont la clarté & la précision doivent faire tout le mérite, & qui n'ont besoin que d'une Langue universelle & de convention.<sup>138</sup>

But this use of Latin presupposes the creation of an artificial structure, and not one which depends for its shades of meaning on comparison with ancient authors. Ferdinand Brunot adds that a language of this sort would run none of the risks of a living language, such as "les chances d'erreur, les déformations individuelles, l'influence illogique et perturbatrice de l'usage."<sup>139</sup>

Such a project received the approbation of many seventeenth- and eighteenth-century thinkers interested in creating a "philosophical" language, whose words would have meanings which would be precise, fixed, and universally accepted. Leibniz's desire to unify and organize all knowledge is reflected in his project for such a language. John Wilkins puts forward a similar proposal in his Essay towards a Real Character and a Philosophical Language (1668).<sup>140</sup>

Translation thus poses problems because there is an exact equivalence between no two languages. The translator's art consists of taking advantage of what equivalence there is, and by his own creativity smoothing over those passages where there is none. In

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<sup>138</sup> Discours préliminaire, Encyc., I, xxx.

<sup>139</sup> Brunot, Histoire de la langue française des origines à nos jours, VI, 601.

<sup>140</sup> Hans Aarsleff, "Leibniz on Locke on Language," American Philosophical Quarterly, I (1964), 168.



other words, the translator must remain objective as long as he can, and retreat into individually creative expression when he has no alternative. Because no two languages are word-for-word equivalents of one another, d'Alembert refuses to believe that one can know a foreign language. This scepticism is a characteristic of his intellectual makeup to which we shall have occasion to return in Chapter VI.

### Stylistics

For most students of literature d'Alembert is first and foremost a man of letters, an Encyclopaedist, and an outstanding member of the French Academy. By studying his statements on stylistics we approach as closely as we may this one pole of his immensely varied intellectual life. Although many branches of his activity have, as we have seen throughout this study, received critical attention, his stylistic statements have not interested as many students as they might. Morris Wachs, in the fifth chapter of his "Study of d'Alembert's Histoire des membres de l'Académie française,"<sup>141</sup> probes d'Alembert's literary theories as they are revealed in the academic eulogies. And Professor Pappas has recently studied d'Alembert's poetic theory.<sup>142</sup> But I shall try to relate d'Alembert's stylistic theories to the broader philosophical viewpoint which we have already seen.

The philosopher's own terse, almost tight-lipped style is aptly described in an autobiographical sketch, the "Portrait de l'auteur, fait par lui-même, et adressé, en 1760, à madame \*\*\*":

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<sup>141</sup>Pp. 105-154.

<sup>142</sup>See his article, "La Poétique de d'Alembert."

. . . son style, serré, clair et précis, ordinairement facile, sans prétention quoique châtié, quelquefois un peu sec, mais jamais de mauvais goût, a plus d'énergie que de chaleur, plus de justesse que d'imagination, plus de noblesse que de grâce.<sup>143</sup>

Most critics agree with this estimate. Voltaire, for example, finds that d'Alembert's style is never at variance with the tone the subject dictates:

Il y a aussi bien des gens qui barbotent dans Paris. En vérité, mon cher philosophe, je ne connais guère que vous qui soit clair, intelligible, qui emploie le style convenable au sujet, qui n'ait point un enthousiasme obscur et confus, qui ne cherche point à traiter la physique en phrases poétiques, qui ne se perde point dans des systèmes extravagants.<sup>144</sup>

But this sobriety and austerity, evident to any reader of the Discours préliminaire, has not always been welcomed: "[D'Alembert est un] écrivain lourd et pâteux, sans tact, d'une inélégance innée, et d'une sécheresse qui se dissimule mal par l'emphase et la fausse noblesse."<sup>145</sup>

It is true that some of d'Alembert's material, notably the scientific works, are virtually unreadable even for those familiar with his technical language, because he uses traditional geometric proofs rather than the more modern algebraic ones. But his other works, including for the most part his major articles in the Encyclopédie, maintain a high standard of, as he himself has said, clarity and precision. The figures of speech are rare, aptly chosen, and elegantly

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<sup>143</sup> Oeuvres, I, 10.

<sup>144</sup> Letter to d'Alembert, November 29, 1766, in Voltaire's Correspondence, LXIII, 132-133.

<sup>145</sup> Lanson, Histoire de la littérature française (Paris: Hachette, 1912), p. 735.

set off with a "pour ainsi dire," an "en quelque sorte," or a "si l'on peut se permettre l'expression."

As for rules which one might inductively formulate from the mass of d'Alembert's writings, Condorcet sums them up well in the "Eloge de d'Alembert" read at a session of the Academy of Sciences after d'Alembert's death:

Ecrire simplement, et surtout avec clarté; n'employer que des mots dont le sens soit précis, ou du moins déterminé par l'usage qu'on en a fait; éviter ce qui offense l'oreille, ce qui choque les convenances, le simple bon sens a dicté ces règles, et il n'en voulait point d'autres . . . .<sup>146</sup>

Condorcet seems thus to infer, and d'Alembert would doubtless have agreed with him, that the most obvious stylistic ideas are in a manner of speaking innate, and universally true for all men of sound reason. But what is simple, clear, precise, and inoffensive in the mouth of Jean-Jacques Rousseau or Voltaire is worlds away from what meets these same criteria in the style of d'Alembert. We shall now try to determine what, in d'Alembert's particular case, in practice gives these seemingly universal rules a personal ring.

First of all d'Alembert, like almost everyone else in French letters in his day, looks to the preceding century for models of good taste and pure expression. The Renaissance, which began with the laudable purpose of encouraging writing in the vernacular, was soon led astray by a misleading adoration of the ancients:

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<sup>146</sup>In Oeuvres, by d'Alembert, I, xv.

Les Gens de Lettres penserent . . . à perfectionner les Langues vulgaires; ils chercherent d'abord à dire dans ces Langues ce que les Anciens avoient dit dans les leurs. Cependant par une suite du préjugé dont on avoit eu tant de peine à se défaire, au lieu d'enrichir la Langue Françoisé, on commença par la défigurer. Ronsard en fit un jargon barbare, hérissé de Grec & de Latin: mais heureusement, il la rendit assez méconnoissable, pour qu'elle en devint ridicule.<sup>147</sup>

But good taste came to the rescue, and, bringing to the French language "les beautés & non les mots des Langues anciennes,"<sup>148</sup> imposed its rule on Malherbe, Boileau, Racine, Corneille, Molière, and La Fontaine.

Since the end of this golden age, the quality of language has deteriorated:

Dans le temps que notre langue n'était encore, grâce aux tribunaux de l'esprit, qu'un mélange bizarre de bas et de précieux, les grands écrivains la devinaient pour ainsi dire, en proscrivant de leurs ouvrages les tours et les mots qu'ils sentaient devoir bientôt vieillir . . . . Aujourd'hui que notre langue se dénature et se dégrade, les grands écrivains la devineront de même en proscrivant de leurs écrits le ramage éphémère de nos sociétés. Peut-être deviendra-t-il enfin si ridicule, que nos auteurs se trouveront plus ridicules encore de l'avoir adopté, et qu'ils en reviendront au vrai et au simple. Peut-être aussi cet heureux temps ne reviendra-t-il jamais.<sup>149</sup>

It is d'Alembert's intention to favour as much as is within his power this return "au vrai et au simple."

Observing rules, in stylistics as elsewhere, does not guarantee that a writer's style will show genius.<sup>150</sup> They serve as guides and aids, and must not be allowed to usurp the power which rightly rests

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<sup>147</sup>Discours préliminaire, Encyc., I, xxi.

<sup>148</sup>Ibid.

<sup>149</sup>"Essai sur la Société des Gens de lettres et des Grands, sur la Réputation, sur les Mécènes, et sur les Récompenses littéraires," Oeuvres, IV, 362.

<sup>150</sup>We have already met this idea. See p. 144.

with the individual writer:

Les regles ne rendront jamais un ouvrage ou un discours éloquent; elles servent seulement à empêcher que les endroits vraiment éloquens & dictés par la nature, ne soient défigurés & déparés par d'autres, fruits de la négligence ou du mauvais goût.<sup>151</sup>

Rules, such as those which Condorcet has suggested that d'Alembert observed, may be the product of reason, but they can easily be stretched beyond their applicability by arbitrary choice: "Dans tous les genres de littérature, la raison a fait un petit nombre de règles, le caprice les a étendues, et le pédantisme en a forgé des fers que le préjugé respecte, et que le talent n'ose briser."<sup>152</sup> Thus, taking d'Alembert's warning to heart, we must not consider as fixed rules those principles which he may seem to recommend categorically; these "rules" are rather codified opinions, which may or may not be applicable in a practical sense, but which should guide the spirit in which composition is undertaken.

The first rule which d'Alembert proposes, and the one of which the application is evident in much of his work, is the principle of clarity. Clarity in composition has certain similarities with clarity in the exposition of a science; the principles must be acceptable to everyone, and the development from these principles must be simple and obvious: "Tous les esprits justes, précis et clairs, appartiennent à la géométrie . . . ."<sup>153</sup> There is an "ordre naturel" according to

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<sup>151</sup>"Elocution," Encyc., V, 521.

<sup>152</sup>"Observations sur l'art de traduire . . .," Oeuvres, IV, 31.

<sup>153</sup>Letter to Frederick the Great, March 6, 1771, Oeuvres, V, 310.

which ideas should be presented;<sup>154</sup> one must proceed, in the exposition of a specific point, by measured steps from certain clear, universal principles, to the particular case in mind: "La maniere la plus naturelle & la plus sùre d'arriver à un objet, c'est d'y aller par le plus court chemin, pourvù qu'on y aille en marchant, & non pas en sautant d'un lieu à un autre."<sup>155</sup> And to enable each point to be seized without difficulty, one must avoid "les tours ambigus, les phrases trop longues, trop chargées d'idées incidentes & accessoires à l'idée principale, les tours épigrammatiques, dont la multitude ne peut sentir la finesse . . . ."<sup>156</sup> D'Alembert is speaking specifically here of the composition of public speeches, but he observes the basic principles of clear exposition and logical progression elsewhere with success.

An exposition cannot be clear without being brief, simple, and easy to understand. And however lofty and complicated the matter at hand, these ideals must never be neglected, for "le vrai sublime est celui qui joint à la grandeur de l'idée, la simplicité de l'expression."<sup>157</sup> It is to be stressed that these stylistic rules bear many resemblances to those which guide the proof of a mathematical theorem, or the formal solution of a problem in mechanics. When d'Alembert declares, "La briéveté consiste à n'employer que les idées nécessaires, & à les disposer dans l'ordre le plus naturel,"<sup>158</sup> his statement

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<sup>154</sup>"Elocution," Encyc., V, 523.

<sup>155</sup>Ibid., p. 526.

<sup>156</sup>Ibid., p. 523.

<sup>157</sup>"Eloge de Huet," Oeuvres, II, 544.

<sup>158</sup>Elémens des sciences," Encyc., V, 494.

applies equally well to art and to science.

Again it is to be stressed that these rules guide and do not guarantee by their being observed that a piece of writing will be an artistic success. Indeed, d'Alembert suggests that genius must be supported by art only when inspiration fails: "Il en est de l'orateur comme du musicien, à qui le génie seul inspire le chant, & que l'oreille & l'art guident dans l'enchaînement des modulations."<sup>159</sup> As we have seen before, genius makes its own rules and dwells alone in a special realm where it seemingly feeds on its own fire:

L'homme de génie ne doit craindre de tomber dans un style lâche, bas & rampant, que lorsqu'il n'est point soutenu par le sujet; c'est alors qu'il doit songer à l'élocution, & s'en occuper. Dans les autres cas, son élocution sera telle qu'elle doit être sans qu'il y pense.<sup>160</sup>

Objective rules seem in this way to ensure a certain minimum standard. Above this, genius in all its uncontrolled individuality roams free and imposes its own unique, remarkable nature on its productions.

Although rules are not, then, of an undeniable, categorical nature, breaking them is a step which demands caution and restraint. When two demands are made simultaneously on the artist, and when he must sacrifice one principle for another, he should do so in a spirit of compromise:

L'harmonie souffre quelquefois de la justesse & de l'arrangement logique des mots, & réciproquement: c'est alors à l'orateur à concilier, s'il est possible, l'une avec l'autre, ou à décider lui-même jusqu'à quel point il peut sacrifier l'harmonie à la justesse. La

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<sup>159</sup>"Elocution," Encyc., V, 522.

<sup>160</sup>Ibid.

seule regle générale qu'on puisse donner sur ce sujet, c'est qu'on ne doit ni trop souvent sacrifier l'une à l'autre, ni jamais violer l'une ou l'autre d'une manière trop choquante.<sup>161</sup>

D'Alembert again steps back from a too daring departure from established norms and again declines to place his trust in the exceedingly radical. In stylistics as in mechanics he fears the confused and the bizarre more than the reticent.

In each of several disciplines in which prose-writing is an essential task, there exist special stylistic principles which d'Alembert takes care to stress. For example, Malebranche is in his eyes "moins un grand philosophe qu'un excellent écrivain en philosophie".<sup>162</sup>

. . . ce qu'on apprendra réellement dans les ouvrages de Malebranche, c'est à faire parler à la philosophie le langage qui lui convient, le seul même qui soit digne d'elle, à être méthodique sans sécheresse, développé sans verbiage, intéressant et sensible sans fausse chaleur, grand sans effort, et noble sans enflure.<sup>163</sup>

D'Alembert is here paraphrasing the description of his own style which he has left us (see p. 181). He draws from Malebranche what seems most useful for his own purposes, and sees in the writings of the great Cartesian that which bears a family resemblance to stylistic elements of his own work.

In historical writing, one must try as much as possible to limit oneself to relating verifiable facts. And since the writer's personality is unavoidably present to some extent, that presence must remain

<sup>161</sup>Ibid., p. 525.

<sup>162</sup>"Sur la Destruction des Jésuites en France," Oeuvres, II, 24.

<sup>163</sup>"Réflexions sur les éloges académiques," Oeuvres, II, 158.



unobtrusive and subdued, aiding the reader to capture the material rather than distracting him:

Heureux l'historien, si dans ce genre d'écrire séduisant, mais dangereux, tandis que l'éloquence anime sa plume, la philosophie la conduit; si les faits ne reçoivent point leur teinture de la manière de penser particulière à l'écrivain; si cette teinture ne leur donne pas une couleur fausse et monotone; s'il ne rend pas son tableau infidèle en voulant le rendre brillant, confus en voulant le rendre riche, fatigant en voulant le rendre rapide!<sup>164</sup>

This opinion concerns of course an ideal case. In specific types of historical writing which d'Alembert considers, he finds it necessary to mingle fact with opinion and even with polemic. The historical panegyrics of the Eloges historiques were written not as objective expositions but rather as pieces in praise of academicians and the Academy: "Le but des éloges littéraires est de rendre les lettres respectables, et non de les avilir."<sup>165</sup> As we have seen by the variety of quotations I have used from them, d'Alembert's Eloges abound in "philosophical" digressions; these asides are however an essential part of this literary form since a eulogy of this type is as much a demonstration of the writer's talent as it is an exposition of a departed academician's career:

Le ton d'un éloge historique ne doit être ni celui d'un discours oratoire, ni celui d'une narration aride. Les réflexions philosophiques sont l'âme et la substance de ce genre d'écrits; tantôt on les entremêlera au récit avec art et brièveté, tantôt elles seront rassemblées et développées dans des morceaux particuliers, où elles formeront comme des masses de lumière qui serviront à éclairer le reste.<sup>166</sup>

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<sup>164</sup>"Réflexions sur l'histoire, et sur les différentes manières de l'écrire," Oeuvres, II, 7.

<sup>165</sup>"Réflexions sur les éloges académiques," Oeuvres, II, 151.

<sup>166</sup>Ibid., p. 152.

Here, facts are thus mingled with opinions to form a balanced, informative, stimulating and diverting whole. This genre seems much more to d'Alembert's liking than a dry recitation of facts which banishes the writer's presence from its pages.

D'Alembert does not keep silence on the subject of poetry either. He questions in considerable depth the nature of poetry, but, aside from a small number of critical opinions he holds, he reaches few conclusions. His main interest lies in justifying poetic form in a century of furious prose-writing, and in distinguishing what must take on verse form from what may better be expressed in prose. These opinions are particularly interesting in the light of what d'Alembert sees as a general poetic decline in his time.

First of all, rhyme is an essential part of poetry: "La rime . . . est un ornement indispensable aux vers français, qui, sans cela, différe-raient trop peu de la prose . . ." <sup>167</sup> Indeed he prefers an elegant and harmonious prose to blank verse. <sup>168</sup> However, as Professor Pappas has pointed out, d'Alembert believes that the necessity of rhyme diminishes when the verse is set to music, in which case rhythm is more important, and the rhyming words are heard too far apart for a listener to appreciate them. <sup>169</sup> Any successful poetic image may also be expressed pleasurably in a freer form, but this does not mean that

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<sup>167</sup>"Eloge de Destouches," Oeuvres, III, 422.

<sup>168</sup>"Eloge de Gedoyn," Oeuvres, III, 316.

<sup>169</sup>"La Poétique de d'Alembert," p. 259; see also d'Alembert, "Réflexions sur la poésie," Oeuvres, IV, 296.

good poetry necessarily makes good prose.<sup>170</sup> Poetry is on a level different from that of prose; it is a language apart, of which the elements can be given a prosaic rendering, but which retains, like a piece written in another language, an essential character dependent on its original form.

In the "Eloge de Despréaux" d'Alembert questions deeper than elsewhere the true and distinguishing nature of poetry. He poses a series of questions:

En quoi consiste précisément la véritable essence de la poésie?  
Est-ce uniquement dans le talent de peindre? Et qu'est-ce que peindre?

L'orateur ne doit-il pas peindre aussi bien que le poète?

Quelle est la différence essentielle de la peinture poétique et de la peinture oratoire?

Le poète est-il toujours obligé de peindre? Et ne peut-il pas y avoir de très-beaux vers sans images, tels que ceux qui expriment ou des pensées nobles, ou des sentimens vrais et profonds, ou de grandes vérités?

Quels sont les caractères qui constituent un tour ou une expression prosaïque?

A l'exception de la mesure et de la cadence, y est-il quelque chose dans la poésie qui ne puisse en aucun cas appartenir à la prose?<sup>171</sup>

These questions remain for the most part unanswered at the end of the "Eloge." We can deduce from them only the direction of d'Alembert's hinting and doubting.

Other questions in the same work are rather more familiar to us:

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<sup>170</sup>"Eloge de Despréaux," Oeuvres, II, 388.

<sup>171</sup>Ibid.

. . . s'il peut y avoir de poésie sans versification, et réciproquement de bonne versification sans poésie? s'il y a une langue poétique, au moins chez la plupart des peuples modernes? si la prose poétique doit être admise ou rejetée? s'il peut y avoir des poèmes en prose? s'il faut traduire les poètes en prose ou en vers?<sup>172</sup>

The last of these questions is, as we have seen, the only one to which d'Alembert gives a satisfactory response. But this one response aids us in ascertaining in which direction the philosopher leans concerning the others. If poetry must be translated in verse, then there is something extraordinary about poetic form which sets apart a selection in verse, from prose expressing the same ideas. Even if poetry cannot be translated completely, even if the translation must be to some extent an original composition, poetic language lends a certain elevation to any thought, an elevation which cannot be expressed in prose. D'Alembert asserts of poetry that "son vrai mérite est d'exprimer noblement des choses qui en valent la peine . . . ."<sup>173</sup>

But this "nobility" (which perhaps means "moral fortitude") remains an intangible quality, as elusive of definition (surprising in d'Alembert) as the questions quoted above are of precise answers.

Nobility is unfortunately not always a dominant preoccupation of poetry, as it should be. D'Alembert feels that lyric verse thus offends, to an extent, the basic nature of the medium. The techniques of lyric poetry, although shared with more serious matter, demand a certain tone

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<sup>172</sup>Ibid., p. 389. Dubos also questions the nature of poetic language and concludes: "C'est donc la Poésie du Style qui fait le Poète, plutôt que la rime & la césure." (Réflexions critiques sur la poésie et sur la peinture, I, 298)

<sup>173</sup>"Eloge de Despréaux," Oeuvres, II, 411. Professor Pappas stresses this point ("La Poétique de d'Alembert," p. 263).

or mood:

La poésie lyrique exige donc une certaine mollesse dans les idées, dans les images, dans les expressions, dans la mesure et la cadence des vers, dans leur rythme et dans leur mélange; elle exige même dans l'arrangement des syllabes une heureuse combinaison de longues et de brèves, nécessaire pour que le chant ne soit pas forcé de s'assujétir à une marche trop lente ou trop rapide.<sup>174</sup>

These are "qualités du second ordre"<sup>175</sup> which are nonetheless rare.

The lyric poet, while inferior to his loftier cousin, "demeure encore fort estimable."<sup>176</sup> However d'Alembert makes no secret of his opinion that the poet who is not seriously concerned with noble thoughts or great passions is committing a sin of omission.

High, noble, and impassioned thoughts are thus better expressed in poetry; at the same time poetic language itself demands these serious and high-born elements for the matter of its expression: "La vraie poésie, celle qui seule mérite ce nom, dédaigne non-seulement les idées populaires et basses, mais même les idées riantes et agréables, si elles sont triviales et rebattues."<sup>177</sup> The special language of poetry requires serious content, and vice versa.

Each language has its idiosyncrasies which, as we have seen, make accurate translation impossible. These idiosyncrasies are of course imposed on any literary production in that language, and d'Alembert feels that French is in this regard more demanding than most:

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<sup>174</sup>"Eloge de La Motte," Oeuvres, III, 123.

<sup>175</sup>Ibid.

<sup>176</sup>Ibid., p. 145.

<sup>177</sup>"Réflexions sur la poésie," Oeuvres, IV, 292.

"Notre langue . . . est la plus sévère de toutes dans ses lois, la plus uniforme dans sa construction, la plus gênée dans sa marche."<sup>178</sup> With special regard for poetry, French genius has judged part of its pleasing effect to consist of due reverence for established forms, patterns, and standards;<sup>179</sup> most other languages have been negligent in this matter, and their poetries fall into comparative chaos. Beyond this, French taste is more refined and delicate than that of other peoples; this explains why some French poets write better verse in Latin or Italian than they do in their own tongue.<sup>180</sup>

As we have seen many times before, lofty subjects and tasteful portrayal of them do not ensure the creation of poetry of genius. There is something beyond this, something more individual, which frees poetry from the yoke of laborious reworking. While Boileau's verse is the object of painstaking care, it shows it. Racine's does not. And Voltaire, in the view of d'Alembert the very pinnacle of classical development, produces verse that is relaxed and, although ingenious, quite natural.<sup>181</sup> Genius functions, then, at several levels. It allows Racine to polish his poetry while hiding his labour. But at its most sublime, genius functions freely and in a seemingly effortless manner. D'Alembert shares with Dubos this conception of one aspect of genius:

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<sup>178</sup>"Observations sur l'art de traduire . . .," Oeuvres, IV, 33.

<sup>179</sup>"Réflexions sur la poésie," Oeuvres, IV, 295.

<sup>180</sup>"Eloge de Regnier Desmarais," Oeuvres, II, 450.

<sup>181</sup>"Eloge de Despréaux," Oeuvres, II, 358. This eulogy was reworked in 1778 to be read before Voltaire, so we may take d'Alembert's enthusiasm with a grain of salt.

"On appelle génie, l'aptitude qu'un homme a reçu de la nature, pour faire bien & facilement certaines choses, que les autres ne sçauroient faire que très-mal, même en prenant beaucoup de peine."<sup>182</sup>

According to the standards set by the poetic richness of the seventeenth century, and the flowering of the nineteenth, the century which came between them seems to us poor and unproductive. This relative paucity of good verse, with reference to the seventeenth century, did not go unnoticed by d'Alembert. He speaks of "ces grands hommes du dernier siècle, de qui notre poésie a reçu presque en même temps la naissance et la perfection."<sup>183</sup> And all those types of poetry which were so enthusiastically practised in the past are falling into disrepute:

Le sonnet ne se montre plus, l'élégie expire, l'épigramme est sur son déclin, l'ode même, l'orgueilleuse ode commence à décheoir; la satire enfin, malgré tous les droits qu'elle a pour être accueillie, la satire en vers nous ennuie pour peu qu'elle soit longue; nous l'avons mise plus à son aise en lui permettant la prose; c'est le seul genre de talent que nous ayons craint de décourager.<sup>184</sup>

But d'Alembert does not foresee the demise of poetry. Indeed the form is very much alive, although in need of redirecting. What he condemns in the poetry of his century, in the "déluge de vers dont on l'accable,"<sup>185</sup> is its preoccupation with lifeless, useless subjects. The reforms he suggests for the Academy's poetry competitions are completely

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<sup>182</sup>Réflexions critiques sur la poésie et sur la peinture, II, 7.

<sup>183</sup>"Discours lu à l'Académie Française, le 25 août 1771, avant la distribution des Prix d'Eloquence et de Poésie," Oeuvres, IV, 316.

<sup>184</sup>"Réflexions sur la poésie," Oeuvres, IV, 291.

<sup>185</sup>Ibid.

in line with his conception of the necessary utility of art. In this way, he finds that poetry must meet a new criterion: "En un mot, voici, ce me semble, la loi rigoureuse, mais juste, que notre siècle impose aux poètes; il ne reconnaît plus pour bon en vers que ce qu'il trouverait excellent en prose."<sup>186</sup> Thus in his opinion aesthetics has lost sight of what must be one of its primary aims. Only the poetry of a Voltaire with its "philosophical" and therefore moral impact (like the paintings of Greuze for Diderot) can stand beside the great prose productions of the century.

Again we have seen how poetry, like other arts, admits of certain universal principles. But at the same time the surge of individual genius alone can make it great. D'Alembert senses the essential changes in direction of his century's poetic currents, but he remains imprisoned in a classical framework. Again he understands and codifies, but he does not innovate.

D'Alembert is not, despite what my analysis of what he considers to be objectively necessary in good writing would imply, insensitive to the purely aesthetic pleasures of the sounds of well-written language. We have already found the word "harmonie" applied to language; what is really meant here is "mélodie," which d'Alembert defines as "[le plaisir] qui résulte de plusieurs sons qu'on entend successivement."<sup>187</sup> This melody consists of the judicious intermingling of syllables of different qualities, just as, in musical melodies, different intervals

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<sup>186</sup>Ibid., p. 294.

<sup>187</sup>"Sur l'harmonie des langues . . .," Oeuvres, IV, 12.



are juxtaposed and blended together.<sup>188</sup> One must conclude from this, says d'Alembert, that since we don't know exactly how Latin was pronounced we cannot fully appreciate its harmonies. We can sense the proportions between different numbers of syllables in words occurring together, and the differences between long and short vowels,<sup>189</sup> but for the most part we depend for our appreciation of the harmony of a selection on the manner in which a modern reader chooses to pronounce it. This manner tends to change from nation to nation.<sup>190</sup> The perception of harmony in a dead language is in this way reduced unavoidably to something almost totally subjective.

An example of how qualities as subjective as "harmonie" came to be born in the course of artistic creation is given in d'Alembert's considerations of oratorical writing. Elocution is essentially a special way of communicating one's thoughts to others: "Etre éloquent, . . . c'est faire passer avec rapidité & imprimer avec force dans l'ame des autres, le sentiment profond dont on est pénétré."<sup>191</sup> Good oratorical writing is an intense, highly-charged medium, and as such is particularly suited for the exposition of a special individual style. But, like other arts we have seen there remain certain universal standards to be maintained. These universal characteristics d'Alembert calls "diction," which he contrasts with the more personal traits of good style:

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<sup>188</sup>Ibid., p. 13.

<sup>189</sup>Ibid., p. 15.

<sup>190</sup>Ibid., p. 16.

<sup>191</sup>"Elocution," Encyc., V, 520.

"Diction" ne se dit proprement que des qualités générales & grammaticales du discours, & ces qualités sont au nombre de deux, la correction & la clarté. Elles sont indispensables dans quelque ouvrage que ce puisse être, soit d'éloquence, soit de tout autre genre; l'étude de la langue & l'habitude d'écrire les donnent presque infailliblement, quand on cherche de bonne foi à les acquérir. "Style" au contraire se dit des qualités du discours, plus particulières, plus difficiles & plus rares, qui marquent le génie & le talent de celui qui écrit ou qui parle: telles sont la propriété des termes, l'élégance, la facilité, la précision, l'élévation, la noblesse, l'harmonie, la convenance avec le sujet &c.<sup>192</sup>

This text shows perhaps most clearly of all, the distinction which d'Alembert makes between universal qualities which can be learned, and personal ones which are innate in the writer of genius. The blending of these two families of qualities, especially, as we have seen in the case of poetry, if the labour is concealed,<sup>193</sup> results in the most successful compositions: "L'élocution n'a pour tous [l'orateur, l'historien, et le philosophe] qu'une même règle; c'est d'être claire, précise, harmonieuse, et surtout facile et naturelle."<sup>194</sup> Clarity and precision are universal qualities, harmony a personal one; but facility and a natural ease, like that of a Racine or a Voltaire, are a mark of special talent.

While good style portrays better than any objective representation the emotional state of the artist, a false, affected style perverts this expressivity.<sup>195</sup> Certain verse forms may be particularly well

<sup>192</sup> Ibid.

<sup>193</sup> "Réflexions sur l'élocution oratoire, et sur le style en général," Oeuvres, IV, 288.

<sup>194</sup> Ibid., p. 290.

<sup>195</sup> Ibid., p. 280.

suites for depicting specific emotions,<sup>196</sup> but by its style alone, a quality of so personal and unique a nature, does a work rise above a certain limited, minimum standard of expression.

Writers have a responsibility to their language. This responsibility is that of determining minimum standards of correctness: "C'est aux gens de lettres à fixer la langue, parce que leur état est de l'étudier, de la comparer aux autres langues, & d'en faire l'usage le plus exact & le plus vrai dans leurs ouvrages."<sup>197</sup> A language is in a state of constant change, but men of letters must steer this change, so to speak, and prevent evolution from becoming decline.<sup>198</sup> The philosopher's search for truth in many fields (and d'Alembert has without doubt in mind his own scientific background) alerts him to demands for clarity of expression and accuracy of definition.<sup>199</sup> While the court may set an example for the whole nation in matters of good taste in speech and writing, the judgment of the man of letters in regulating this position is indispensable; he must "se rendre, en quelque sorte, législateur dans la langue des grands et dans celle de la multitude, et assigner à chacune son partage et ses bornes."<sup>200</sup> Similarly the republic of letters, and in particular the French Academy, must control

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<sup>196</sup>In the Encyclopédie article "Elégiaque" (of which he wrote the first part) d'Alembert describes how the distich, with its uniformity and equally spaced pauses, expresses well the sadness and languor of the elegy. (Encyc., V, 483)

<sup>197</sup>"Dictionnaire," Encyc., IV, 961.

<sup>198</sup>Ibid.

<sup>199</sup>Ibid.

<sup>200</sup>"Eloge de Caillières," Oeuvres, II, 512.

the spelling of French words. While again it cannot fix spellings, it can provide a definitive description of the state of the language at a given time.<sup>201</sup> D'Alembert realizes, once again, that a language is in a constant state of change, and that orthographic evolution is part of that change. But he counsels a course midway between blind conservatism and brash innovation: "S'il y a de la pédanterie à révéler avec superstition l'ancien usage, il y a de la puérilité à la braver avec affectation."<sup>202</sup>

The aim of all this striving for technical perfection and creative originality is, from a writer's point of view, to obtain "l'estime public."<sup>203</sup> The public however judges him not by his intentions, but rather by what it receives:

Mais quel que soit le but d'un écrivain, soit d'être loué, soit d'être utile, ce but n'importe guère au public; ce n'est point là ce qui règle son jugement, c'est uniquement le degré de plaisir ou de lumière qu'on lui a donné. Il honore ceux qui l'instruisent, il encourage ceux qui l'amuse, il applaudit ceux qui l'instruisent en l'amusant.<sup>204</sup>

Utility and pleasurable beauty, each term being understood in a broad sense, must be the aims of any writer. In this way the writer's stylistic pains, his preoccupation with universal principles and more relative, personal qualities, are assigned a goal. Art does not exist, for d'Alembert, without its admirers.

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<sup>201</sup>"Eloge de Louis Cousin," Oeuvres, II, 308.

<sup>202</sup>"Eloge de Regnier Desmarais," Oeuvres, II, 448.

<sup>203</sup>"Lettre à J.J. Rousseau, citoyen de Genève," Oeuvres, IV, 436.

<sup>204</sup>Ibid.

Although, as we have seen throughout this section, d'Alembert maintains a healthy respect for both objectivity and subjectivity in his theoretical statements about stylistics, his musing seems to be weighed more on the side of individual expression. In stylistics, the branch of artistic activity with which he is most familiar, he is less concerned than he is in other branches with a division between personal statement and universal truth. Perhaps, then, it would seem that the art where d'Alembert is the most at home is also the one in which his general philosophical method is the least discernible.

#### Conclusion

It must be stressed again that in all the fields of d'Alembert's activity which I have qualified as being of the aesthetic variety, in aesthetic theory, in music, in translation, and in stylistics, there is continuity. This continuity is evident not only in isolated aesthetic matters, such as the conceptions of artistic genius, style, and regulation of an art, but also in the larger realm of a universal analytical approach, consisting of reduction to principles and elaboration from there of particular cases, which, as Professor Schwab points out,<sup>205</sup> d'Alembert's aesthetics shares with his scientific work. From D'Alembert's Principle to the Eloges historiques we have seen the continuous presence of a desire to simplify by dividing the matter under consideration into its universal and relative elements. In this way, in aesthetic disciplines as in mechanics or linguistics, empiricist and rationalist methods each have their rôles to play.

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<sup>205</sup>Schwab, ed., Essai sur les Eléments de philosophie, by d'Alembert, p. xvi.

## CHAPTER VI

### THE RETREAT INTO THE KNOWABLE

#### Introduction

An examination of d'Alembert's conceptions of language has led us first of all into rationalist realms. The aims, methods and tendencies which colour the philosopher's view of the elements of language, have been, as we have seen, the basis of the first chapters of this study. Further on, we became aware of the empiricist intrusion into this idealized and idealistic world. And further still, we came to consider the delicate balance between the ideal and the relative, in aesthetics as in other domains of d'Alembert's intellectual activity. What remains, then, is to probe further into the implications of these linguistic ideas, to discover what limits this philosopher has set to the range of speculation. What can be known, and beyond what point does one try in vain to explore? How far does the linguistic structure with which we handle our ideas allow us to penetrate? Within what bounds, indeed, does man's competence lie?

The answers to these questions may seem difficult to supply, considering the universality of d'Alembert's mind. We need not push to the limits of each field of his inquiry, however, in order to see at what point he calls a halt to further probing, since as always d'Alembert has left us ample record of his more general, abstract meditations in this matter. Indeed, he shows himself to be remarkably consistent and true to his principles. Although opposed in general to the

submission of the mind to a system, he exhibits a systematic ability of his own in his standards of truth, and in his methods of extending the realm of positive knowledge. The same terms are used to describe the futility of the search for enlightenment outside the limits of this realm: vanity, impracticality, misdirection. This is the substance of his scepticism.

The searching mind may seem, even in d'Alembert's regimented world, to roam with some of the freedom of subjective whimsy. Even a superficial comparison of his Elémens de philosophie to Descartes's Principes de la philosophie shows how in the former work, d'Alembert, in some ways as rationalistic as Descartes, strives to liberate himself from Descartes's suffocatingly systematic order. Although d'Alembert's book deals in rationalistic terms with the search for knowledge, it shows more respect for empirical evidence than the Discours de la méthode, which pays it lip service,<sup>1</sup> and certainly more than the Principes de la philosophie. But this added measure of freedom in d'Alembert must draw in its train added measures of restraint, for the method he presents has really evolved from a purer rationalism, and is not merely a justification for the breakdown of rule. These additional restraints, certainly age-old but given special significance

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<sup>1</sup>On the suppositions which he makes in his Dioptrique and Météores, Descartes observes: "Il me semble que les raisons s'y entresuiuent en telle sorte que, comme les dernières sont démontrées par les premières, qui sont leurs causes, ces premières le sont réciproquement par les dernières, qui sont leurs effets. Et on ne doit pas imaginer que ie commette en cecy la faute que les Logiciens nomment vn cercle; car l'expérience rendant la plus part de ces effets tres certains, les causes dont ie les deduits ne seruent pas tant a les prouuer qu'a les expliquer; mais, tout au contraire, ce sont elles qui sont prouées par eux." (Discours de la méthode, in Oeuvres, VI, 76)

by our philosopher, are scepticism, pragmatism, and relativism. These three taken together constitute an undeniable force drawing the researcher back from the brink of overextended speculation, and restricting the uncontrolled growth of a cancerous pseudo-knowledge.

### Scepticism

Although each of these three restraints, scepticism, pragmatism, and relativism, implies the other two, enough of a distinction exists in d'Alembert's writings to merit their being treated separately here. In a particular case, for example, mistrust of the universality or usefulness of a judgment may lead to a wholesale sceptical rejection of the proposal. But each restraint can stand alone as a limiting factor in speculation, and of the three, a prudent, sometimes reticent scepticism looms the largest.

D'Alembert's scepticism is not, first of all, centred on fundamentally religious matters (his stands in this regard, varying from virtual atheism when he writes to Frederick, to strict orthodoxy in the Encyclopédie, seem to depend on who is listening and show an overall lack of deep concern). Nor is his scepticism of a wider metaphysical sort, occupying itself with chimerical systematic psychologies. Rather it stems from a sort of intellectual or epistemological anxiety: the desire to know what can be known, and how it can be discovered and verified in a positive way.

We have seen on several occasions that d'Alembert believes that the simpler an axiom or principle, the more universal is its applicability. This is in fact the whole basis of the Traité de dynamique.



Similarly the simplest of questions which one might pose concerning one's own existence are not only the most universal, but also, unfortunately, the most unanswerable. With all the resources of wisdom and reason, even the sage is left speechless and stupidly open-mouthed before some simple questions about everyday phenomena:

Vous voyez, me disait il n'y a pas long-temps un savant célèbre, cette bibliothèque immense que j'habite. Que de biens à la fois, ai-je dit en y entrant, comme cet animal affamé de la fable! Que de moyens d'être heureux sans avoir besoin de personne! J'ai passé mes plus belles années à épuiser cette vaste collection; que m'a-t-elle appris? L'histoire ne m'a offert qu'incertitude; la physique que ténèbres; la morale que vérités communes, ou paradoxes dangereux; la métaphysique que vaines subtilités. Après trente ans d'étude, vous me demanderiez en vain pourquoi une pierre tombe, pourquoi je remue la main, pourquoi j'ai la faculté de penser et de sentir. Sans des lumières supérieures à la raison, qui ont servi plus d'une fois à consoler mon ignorance, aucun livre n'aurait pu m'apprendre ce que je suis, d'où je viens et où je dois aller; et je dirais de moi-même, jeté comme au hasard dans cet univers, ce que le doge de Gênes disait de Versailles; "ce qui m'étonne le plus ici, c'est de m'y voir."<sup>2</sup>

Despite the most fervent efforts to answer these simple queries, the philosopher seems forever doomed to defeat:

A foi et à serment, je ne trouve dans toutes les ténèbres métaphysiques de parti raisonnable que le scepticisme; je n'ai d'idée distincte, et encore d'idée complète, ni de la matière ni d'autre chose; et en vérité quand je me perds dans mes réflexions à ce sujet, ce qui m'arrive toutes les fois que j'y pense, je suis tenté de croire que tout ce que nous voyons n'est qu'un phénomène, qui n'a rien hors de nous de semblable à ce que nous imaginons, et j'en reviens toujours à la question du roi indien: "Pourquoi y a-t-il quelque chose?" car c'est là en effet le plus surprenant.<sup>3</sup>

And this feeling of impotence degenerates sometimes into a dry defeatism which rationalizes failure:

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<sup>2</sup>"Apologie de l'étude," Oeuvres, IV, 5.

<sup>3</sup>Letter to Voltaire, August 29, 1769, Oeuvres, V, 186.

"Qu'en savons-nous," est, selon moi, la réponse à presque toutes les questions métaphysiques; et la réflexion qu'il y faut joindre, c'est que, puisque nous n'en savons rien, il ne nous importe pas d'en savoir davantage.<sup>4</sup>

D'Alembert's favorite maxim is "presque sur tout on peut dire tout ce qu'on veut,"<sup>5</sup> and the only advantage which a philosopher has over anyone else, in the feverish exchange of equally valid or invalid opinions and judgments which the maxim implies, is "de savoir réduire les notions à un petit nombre, d'y mettre de l'ordre, & de faire voir comment les autres en découlent."<sup>6</sup> He has learned a system, or rather a systematizing habit, which is his sole claim to strength and superiority.

Some questions, then, leave us baffled. Must we hypothesize blindly, until some plausible answer is reached? No, says d'Alembert; what is necessary in these cases is the patience, and prudence, to remain silent: "Le vrai philosophe n'est ni thomiste, ni moliniste, ni congruiste; il reconnoît & voit partout la puissance souveraine de Dieu; il avoue que l'homme est libre, & se tait sur ce qu'il ne peut

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<sup>4</sup>Letter to Voltaire, July 23, 1770, Oeuvres, V, 201. D'Alembert expresses the same idea in a letter to Frederick on August 2 of the same year (Oeuvres, V, 297): "Quand on se fait, sire, toutes ces questions [qui demeurent sans réponse], on doit, ce me semble, redire cent fois, 'que sais-je?' mais on doit en même temps se consoler de son ignorance, en pensant que, puisque nous n'en savons pas davantage, c'est une preuve qu'il ne nous importe pas d'en savoir plus."

<sup>5</sup>"Mémoire de d'Alembert, par lui-même," Oeuvres, I, 9.

<sup>6</sup>Letter to Formey, quoted by Richard N. Schwab in his edition of the Essai sur les éléments de philosophie, by d'Alembert, p. 479. The quotation is taken from J.H.S. Formey, Souvenirs d'un citoyen (Berlin, 1791), II, 362-363.

comprendre."<sup>7</sup> Such scepticism received many names in the eighteenth century. Pope, in the Essay on Man, counsels, "Tell (for you can) what is it to be wise? /'Tis but to know how little can be known . . . ."<sup>8</sup> Boerhaave, the great Dutch Newtonian, speaks of Newton's "Pyrrhonismus physicus,"<sup>9</sup> a Pyrrhonism to which Newton himself readily confessed:

These Principles [various forms of attraction such as gravity, fermentation, and the cohesion of bodies] I consider, not as occult Qualities, supposed to result from the specifick Forms of Things, but as general Laws of Nature, by which the Things themselves are form'd; their Truth appearing to us by Phaenomena, though their Causes be not yet discover'd. For these are manifest Qualities, and their Causes only are occult. . . . I scruple not to propose the Principles of Motion above-mention'd, they being of very general Extent, and leave their Causes to be found out.<sup>10</sup>

Newton, like d'Alembert, prefers descriptive theories to explicative ones.

Some questions may be answered in time by new information and creative reworking of data already at hand. But again, until such a time has come, and until the question can be given a positive, verified answer, there is for d'Alembert but one path: "Savoir attendre

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<sup>7</sup>"Fortuit (Métaphys.)," Encyc., VII, 205. Here, as elsewhere in the Encyclopédie, d'Alembert subscribes, with tongue in cheek, to strict religious orthodoxy. Cf. Discours préliminaire, Encyc., I, viii: "Quelques vérités à croire, un petit nombre de préceptes à pratiquer, voilà à quoi la Religion révélée se réduit: néanmoins à la faveur des lumieres qu'elle a communiquées au monde, le Peuple même est plus ferme & plus décidé sur un grand nombre de questions intéressantes que ne l'ont été toutes les sectes des Philosophes."

<sup>8</sup>An Essay on Man (Epistle IV, vv. 260-261), in The Poetical Works of Alexander Pope, I, 362.

<sup>9</sup>Quoted by Paul Hazard, La Crise de la conscience européenne (1680-1715) (Paris: Boivin, 1935), II, 114.

<sup>10</sup>Newton, Opticks, or a Treatise of the Reflections, Refractions, Inflections & Colours of Light, eds. A. Einstein, Sir Edmund Whittaker, I. Bernard Cohen, Duane H.D. Roller (New York: Dover, 1952), pp. 401-402.

et douter."<sup>11</sup>

In this willingness to doubt there is, it is true, another Cartesian echo. But d'Alembert's doubting is a little more reticent, a little less haughty than that of Descartes, and more like the modest resignation of Montaigne. Doubt is not necessarily a tactical retreat for d'Alembert, a step backward, taken in order to plunge forward again with greater force and assurance, as it is for Descartes. The sage must be prepared to keep silence forever on some matters, and to remain forever frustrated in his attempts to answer some questions:

. . . n'emprisonnons point la nature dans les limites étroites de notre intelligence; approfondissons assez l'idée que nous avons de la matière pour être circonspects sur les propriétés que nous lui attribuons, ou que nous lui refusons; & n'imitons pas le grand nombre des Philosophes modernes, qui en affectant un doute raisonné sur les objets qui les intéressent le plus, semblent vouloir se dédommager de ce doute par des assertions prématurées sur les questions qui les touchent le moins.<sup>12</sup>

Doubt is not for d'Alembert a part of method. It is an attitude of respect towards the unknown.

We have already seen on several occasions that true knowledge is based always on the logical arrangement of solid empirical data. All other research is dangerously hypothetical, and demands the utmost care. Synthesizing new principles is thus slow and costly labour demanding the most painstaking procedures:

La seule ressource qui nous reste donc dans une recherche si pénible, quoique si nécessaire, & même si agréable, c'est d'amasser le

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<sup>11</sup> Recherches sur différens points importants du système du monde, III, xlii.

<sup>12</sup> Ibid., I, lx.

plus de faits qu'il nous est possible, de les disposer dans l'ordre le plus naturel, de les rappeler à un certain nombre de faits principaux dont les autres ne soient que des conséquences. Si nous osons quelquefois nous élever plus haut, que ce soit avec cette sage circonspection qui sied si bien à une vûe aussi foible que la nôtre.<sup>13</sup>

The philosopher who tries to look beyond what is right in front of him, without utilizing these immediate facts in order to proceed with assurance to more distant ones, is doomed to a double ignorance: he will be unaware of what is at his feet, and his conjectures will have no firm, irrefutable basis.<sup>14</sup> Philosophy is "la science des faits ou celle des chimères."<sup>15</sup>

This attitude cannot help but draw after it as a consequence the condemnation of much of what traditional philosophy calls "metaphysics." And indeed d'Alembert spares no pains in clarifying just which interpretations of this term indicate a valid science, and which do not:

La métaphysique, selon le point de vue sous lequel on l'envisage, est la plus satisfaisante ou la plus futile des connaissances humaines; la plus satisfaisante quand elle ne considère que les objets qui sont à sa portée, qu'elle les analyse avec netteté et avec précision, et qu'elle ne s'élève point dans cette analyse au-delà de ce qu'elle connaît clairement de ces mêmes objets; la plus futile lorsque, orgueilleuse et ténébreuse tout à la fois, elle s'enfonce dans une région refusée à ses regards, qu'elle disserte sur les attributs de Dieu, sur la nature de l'âme, sur la liberté, et sur d'autres sujets de cette espèce, où toute l'antiquité philosophique s'est perdu, et où la philosophie moderne ne doit espérer d'être plus heureuse.<sup>16</sup>

<sup>13</sup>Discours préliminaire, Encyc., I, vii.

<sup>14</sup>"Attraction," Encyc., I, 855.

<sup>15</sup>"Elémens des sciences," Encyc., V, 493.

<sup>16</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 294. In the "Eclaircissement" d'Alembert generally shows his true religious colours more openly than in the Encyclopédie. Cf. footnote 7 of this chapter.

Each science has its own "métaphysique," which d'Alembert defines as,

les principes généraux sur lesquels une science est appuyée, et qui sont comme le germe des vérités de détail qu'elle renferme et qu'elle expose; principes d'où il faut partir pour découvrir de nouvelles vérités ou auxquels il est nécessaire de remonter pour mettre au creuset les vérités qu'on croit découvrir.<sup>17</sup>

In this light the Elémens de philosophie may be seen to be a metaphysical treatise, containing the methodological quintessence of all the sciences. And just as the basic principles of a discipline must be within the grasp of all men, so then must metaphysics, in the special reduced sense which d'Alembert imposes on it, retain the dimensions of a universally accessible body of facts:

La Métaphysique raisonnable ne peut consister, comme la Physique expérimentale, qu'à rassembler avec soin tous ces faits [universellement connus], à les réunir en un corps, à expliquer les uns par les autres, en distinguant ceux qui doivent tenir le premier rang & servir comme de base. En un mot les principes de la Métaphysique, aussi simples que les axiomes, sont les mêmes pour les Philosophes & pour le Peuple.<sup>18</sup>

If confusion does arise in the presentation of such universal facts, it can only proceed from inadequate definition and misleading language:

Le vrai en métaphysique ressemble au vrai en matière de goût; c'est un vrai dont tous les esprits ont le germe en eux-mêmes, auquel la plupart ne font point d'attention, mais qu'ils reconnaissent dès qu'on le leur montre. Il semble que tout ce qu'on apprend dans un bon livre de métaphysique, ne soit qu'une espèce de réminiscence de ce que notre âme a déjà su; l'obscurité, quand il y en a, vient toujours de la faute de l'auteur, parce que la science qu'il se propose d'enseigner n'a point d'autre langue que la langue commune.<sup>19</sup>

<sup>17</sup>Ibid., pp. 294-295.

<sup>18</sup>Discours préliminaire, Encyc., I, xxvii-xxviii.

<sup>19</sup>Elémens de philosophie, Oeuvres, I, 180.

Metaphysics must then concern itself only with "le résultat de nos sensations,"<sup>20</sup> and where the nature of bodies cannot be known, the researcher must be satisfied with knowledge of their appearance:

. . . la connoissance de la nature d'une chose (du moins par rapport à nous) ne peut consister que dans la notion claire & décomposée, non des principes réels & absolus de cette chose, mais de ceux qu'elle nous paroît renfermer.<sup>21</sup>

Pushing aside the whole traditional rationalist study of abstractions and essences, d'Alembert rejoins Locke's psychology<sup>22</sup> and the experimental ideal of Bacon and Newton. Metaphysics, like the natural and mathematical sciences, must be founded on firm logical ground, with elaboration based only on the most cautious acceptance of the sensations which we receive.

Professor Casini points out that d'Alembert's conception of metaphysics is a completely secular one:

Bien sûr, pour d'Alembert la "métaphysique," loin d'être la méditation sur l'harmonie divine du cosmos, n'est autre chose que la réflexion sur la science positive elle-même. Sa réserve sceptique nous ouvre une perspective bien différente, où l'image rationnelle de l'univers-machine apparaît désormais comme laïcisée et tout à fait dénuée de son substrat théologique.<sup>23</sup>

D'Alembert thus cuts away, in the name of exactitude and truth, vast areas of endeavour which, if they are called sciences, must be qualified as false ones. What is left is a core very reduced in extent:

<sup>20</sup>Ibid., p. 131.

<sup>21</sup>"Elémens des sciences," Encyc., V, 494.

<sup>22</sup>Grimsley, Jean d'Alembert, p. 226.

<sup>23</sup>Paolo Casini, "Le 'newtonianisme' au siècle des lumières. Recherches et perspectives," Dix-huitième siècle, I (1969), 158.

On peut regarder la métaphysique comme un grand pays, dont une petite partie est riche et bien connue, mais confine de tous côtés à de vastes déserts, où l'on trouve seulement de distance en distance quelques mauvais gîtes prêts à s'écrouler sur ceux qui s'y réfugient.<sup>24</sup>

The metaphor of the islands of certainty in an unknown sea thus returns in a slightly modified form.<sup>25</sup> The unknown, and the seemingly unknowable, present a fearsome picture of intellectual danger and crushing uncertainty. Even geometry, the surest of sciences, is only "une espèce de hochet que la nature nous a jeté pour nous consoler et nous amuser dans les ténèbres."<sup>26</sup> The sometimes timid d'Alembert prefers the security of fact.

An example of the precise distinctions which d'Alembert establishes between the real and the chimerical in an idea or concept, is his criticism of some uses of the word "infini." Aside from its figurative, almost symbolic meaning, which makes of "infinity" a concrete attribute, there are more exact definitions of a mathematical, and more important for us, of an etymological nature. At least one historian of mathematics has pointed out that d'Alembert made a substantial contribution to the development of that science by defining different orders of infinity, and especially the conception of the limit.<sup>27</sup>

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<sup>24</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 136.

<sup>25</sup>Cf. Discours préliminaire, Encyc., I, xv: "L'Univers n'est qu'un vaste Océan, sur la surface duquel nous appercevons quelques îles plus ou moins grandes, dont la liaison avec le continent nous est cachée."

<sup>26</sup>Letter to Frederick the Great, Sept. 17, 1764, Oeuvres, V, 253.

<sup>27</sup>Dirk J. Struik, A Concise History of Mathematics, 2nd ed. (New York: Dover, 1967), p. 126.



First of all, in the least restrained sense which still permits a clear and logical definition, "infini" refers to that which has no finite boundaries:

La quantité infinie est proprement celle qui est plus grande que toute grandeur assignable, & comme il n'existe pas de telle quantité dans la nature, il s'ensuit que la quantité infinie n'est proprement que dans notre esprit, & n'existe dans notre esprit que par une espèce d'abstraction, dans laquelle nous écartons l'idée de bornes. L'idée que nous avons de l'infini est donc absolument négative, & provient de l'idée du fini, & le mot même négatif d'infini le prouve.<sup>28</sup>

Thus when we speak of immeasurable quantities, referring to them as "infinite," we are using this negative conception which the prefixes "im-" in "immeasurable" and "in-" in "infinite" presuppose.<sup>29</sup>

This negative idea of the infinite, the one which theologians are in reality using, but in which they do not recognize a negative nature, is of no use to the mathematician. Two supposedly infinite quantities cannot be compared like numbers:

La seule idée que nous ayons de la quantité infinie, est celle d'une quantité qui surpasse toute grandeur finie, & il suit de-là que tous les infinis que nous pouvons imaginer n'auront jamais, par rapport à notre manière de concevoir, d'autre propriété commune que celle-là; donc on ne peut pas dire proprement que l'un est plus grand que l'autre: en effet, pour dire que l'un est plus grand que l'autre il faudroit les pouvoir comparer: or toute comparaison suppose perception, & nous n'avons point de perception de la quantité infinie. Quand nous croyons comparer deux infinis entr'eux, faisons réflexion à l'opération de notre ame, & nous verrons que nous ne comparons jamais que des quantités finies indéterminées, que nous croyons supposer infinies, parce que nous les supposons indéterminées.<sup>30</sup>

<sup>28</sup>"Infini (Géomét.)," Encyc., VIII, 703.

<sup>29</sup>Elémens de philosophie, Oeuvres, I, 271-272.

<sup>30</sup>"Quantité (Philosophie)," Encyc., XIII, 655.

Therefore there is nothing positive and well-founded about such an idea of the infinite. D'Alembert sceptically rejects it as a basis for knowledge of a mathematical sort.

But in mathematics, one supposes the existence of limits, that is to say quantities to which a variable may be made to approach as closely as one wishes, but which it never reaches. For example, a mathematician may say  $\lim_{x \rightarrow \infty} \frac{1}{x} = 0$ , where  $x$  is a real number; this means that the larger he allows  $x$  to become, the closer the quotient  $\frac{1}{x}$  comes to zero. But he cannot say  $\frac{1}{\infty} = 0$ , since infinity is not a number and cannot be divided into 1. Infinity exists for the mathematician in this way as a limit:

Je n'examine point ici s'il y a en effet des quantités infinies actuellement existantes; si l'espace est réellement infini; si la durée est infinie; s'il y a dans une portion finie de matière un nombre réellement infini de particules. Toutes ces questions sont étrangères à l'infini des mathématiciens, qui n'est absolument . . . que la limite des quantités finies; limite dont il n'est pas nécessaire en mathématiques de supposer l'existence réelle; il suffit seulement que le fini n'y atteigne jamais.<sup>31</sup>

This is the only precise meaning which can be assigned to such a problematic concept. The notion of infinity as something very, very large, is meaningless and useless for purposes as rigorous as mathematical ones. And although the idea of the limit does not assign exact quantity to infinity, it expresses nevertheless a fundamental and utilitarian property of the concept.

D'Alembert's careful attention to the idea of infinity is an example of his concern for defining what is definable and hence

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<sup>31</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 289.

capable of sustaining the weight of further development. Much of the mystery of learning could be dispelled, he asserts, by simply clearing up linguistic difficulties such as this one:

On ne saurait rendre la langue de la raison trop simple et trop populaire: non-seulement c'est un moyen de répandre la lumière sur un plus grand espace, c'est ôter encore aux ignorans un prétexte de décrier le savoir. Plusieurs s'imaginent que toute la science d'un mathématicien consiste à dire "corollaire" au lieu de "conséquence," "scolie" au lieu de "remarque," "théorème" au lieu de "proposition." Ils croient que la langue particulière de chaque science en fait tout le mérite, que c'est une espèce de rempart inventé pour en défendre les approches; ne pouvant forcer la place, ils se vengent en insultant les dehors.<sup>32</sup>

Strange, cryptic technical vocabularies must then be explained, and those concepts which do not admit of clear definition, must, by the sceptic's standards, be rejected.

Although the scepticism which d'Alembert practises seems from time to time to border on deep pessimism, it has its optimistic moments as well. He acknowledges joyfully, if in a somewhat puzzled manner, the glory of pure curiosity:

Mais parmi les contradictions inconcevables dont la nature humaine est composée, et qui en font une production tout à la fois si admirable et si étrange, il n'est point de contraste plus étonnant que celui qui se trouve entre cette avidité incroyable de savoir, qui voudrait tout saisir et tout embrasser, et la connaissance qui nous est interdite de tant de choses, que notre inquiète curiosité désire si ardemment d'approfondir. . . . que le principe qui pense en nous se demande en pure perte ce qui constitue en lui la pensée, et que cette pensée qui voit tant de choses si éloignées d'elle, ne puisse se voir elle-même dont elle est si près, en cherchant néanmoins à se voir et à se connaître, voilà ce qui doit nous surprendre et nous confondre.<sup>33</sup>

By carefully observing the rules which we have considered, the

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<sup>32</sup>Elémens de philosophie, Oeuvres, I, 134.

<sup>33</sup>"Eloge de Despréaux," Oeuvres, II, 379.

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<sup>32</sup>Elémens de philosophie, Oeuvres, I, 134.

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philosopher may in his response to an inner call for knowledge grope slowly but securely towards truth.<sup>34</sup>

Simplicity must be the goal of the researcher's striving, for uncertainty follows close on the heels of confusion:

C'est à la simplicité de son objet que la Géométrie est redevable de sa certitude; à mesure que l'objet devient plus composé, la certitude s'obscurcit & s'éloigne. Il faut donc savoir s'arrêter sur ce qu'on ignore, ne pas croire que les mots & de "Théorème" et de "Corollaire," fassent par quelque vertu secrète l'essence d'une démonstration, & qu'en écrivant à la fin d'une proposition "ce qu'il falloit démontrer," on rendra démontré ce qui ne l'est pas.<sup>35</sup>

Once again we see that words are empty without clear concepts to fill them.

But one must make judgments as well to limit the applicability of such simplicity, for not all objects of study can be contained in simple concepts. Physical science is governed, says d'Alembert, by "la manie de tout expliquer."<sup>36</sup> And because it has enjoyed some success, the mathematical mind thinks it can penetrate everywhere:

L'esprit du calcul qui a chassé l'esprit de système, regne peut-être un peu trop à son tour: car il y a dans chaque siècle un goût de philosophie dominant; ce goût entraîne presque toujours quelques préjugés, & la meilleure philosophie est celle qui en a le moins à sa suite.<sup>37</sup>

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<sup>34</sup>We have already seen, in Chapter IV, how knowledge may be acquired by circumspect formulation of principles and careful analysis of empirical facts.

<sup>35</sup>Essai d'une nouvelle théorie de la résistance des fluides (Paris: David, 1752 [Reprint, Bruxelles: Culture et Civilisation, 1966]), pp. xlii-xliii.

<sup>36</sup>"Physique," Encyc., XII, 540.

<sup>37</sup>"Fluide," Encyc., VI, 890.

Thus even a system of knowledge bound up with mathematical certainty is subject to sceptical limitation. And in this case of which d'Alembert is specifically speaking, that of fluid mechanics, mathematical descriptions may not be rigorous because of weaknesses or even errors in basic assumptions. Until these assumptions (which concern the nature of fluids) are verified, then the calculations which are based on them can be accepted only if the results they provide agree with observation.

One's faith in a method is therefore to be tempered with respect for the range of applicability of that method. In this way faith and reason both have their domain:

Mais un objet qui intéresse et qui regarde particulièrement le philosophe, c'est de distinguer avec soin les vérités de la foi d'avec celles de la raison, et de fixer les limites qui les séparent. Faute d'avoir fait cette distinction si nécessaire, d'un côté quelques grands génies sont tombés dans l'erreur, de l'autre les défenseurs de la religion ont quelquefois supposé trop légèrement qu'on lui portait atteinte.<sup>38</sup>

While this statement may certainly be defended from the rationalist point of view (those hypotheses requiring faith as the basis or criterion of their validity, cannot be either defended or assailed by reason alone), as well it provides an excellent excuse for d'Alembert's timidity to keep him quiet on controversial matters. In this way, scepticism can be in the battle for truth, a shield as well as a sword.

D'Alembert reserves the right, however, to judge how much certainty is contained in a specific demonstration, and to determine his

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<sup>38</sup> Elémens de philosophie, Oeuvres, I, 129.

further actions by such a judgment:

Il serait sans doute à souhaiter qu'on n'employât jamais que des démonstrations rigoureuses; il serait du moins à souhaiter que, dans les cas où cette lumière manque, on se bornât à avouer simplement son ignorance; mais dans la plupart des sciences, telles que la physique, la médecine, la jurisprudence et l'histoire, il est une infinité de cas, où sans être ni éclairés ni convaincus, nous sommes forcés d'agir et de raisonner comme si nous l'étions. Ne pouvant alors atteindre au vrai, ou du moins s'assurer qu'on y est parvenu, il faut en approcher le plus qu'il est possible.<sup>39</sup>

The logically coherent structure which d'Alembert would impose on all language is in this way sometimes necessarily limited to mathematical forms. And even in the natural sciences, as we have observed, certainty is in the final analysis based on assumptions which may be only more or less true.

But perhaps the most valuable element of d'Alembert's method is the sceptical limit which he places on scepticism itself:

. . . en quelque matière que ce soit, on ne doit pas trop se hâter d'élever entre la nature & l'esprit humain un mur de séparation. Pour avoir appris à nous méfier de notre industrie, gardons-nous de nous en méfier avec excès. Dans l'impuissance que nous sentons tous les jours de surmonter tant d'obstacles qui se présentent à nous, nous serions sans doute trop heureux, si nous pouvions du moins juger au premier coup d'oeil jusqu'où nos efforts peuvent atteindre. Mais telle est tout à la fois la force & la foiblesse de notre esprit, qu'il est souvent aussi dangereux de prononcer sur ce qu'il ne peut pas, que sur ce qu'il peut.<sup>40</sup>

This important limitation to inquiry, that of assigning only with restraint boundaries to the range of our curiosity, keeps open those

<sup>39</sup>Ibid., pp. 153-154.

<sup>40</sup>Essai d'une nouvelle théorie de la résistance des fluides, pp. xxxiv-xxxv. The same passage is contained in "Physique," Encyc., XII, 540.

areas which may be inadvertently or too hastily closed off. It is the basis for an optimistic countering of the pessimism lying at the centre of d'Alembert's scepticism.

In conclusion one may observe that this scepticism is the result of d'Alembert's observations of the weaknesses and strengths of the inquiring mind. While his scepticism leaves much freedom to the inquiring mind when it is concerned with problems which it may legitimately approach, domains such as speculation on religious matters are forbidden. A system is at all times the product of the mind's acting on data, and imposing principles that fit the data without contradiction or confusion. The system thus has all the limitations of the data considered:

. . . telle est tout à la fois la sagesse et la manie du philosophe; tant que la collection des matériaux est facile et abondante, il n'est guère occupé que du soin de les recueillir et de les mettre en ordre; mais à l'instant qu'ils lui manquent, il commence aussitôt à discourir; obligé même, ce qui lui arrive souvent, de se contenter d'un petit nombre de matériaux, il est toujours tenté d'en former un corps, et de délayer en un système de science, ou en quelque chose du moins qui en ait la forme, un petit nombre de connaissances imparfaites et isolées.<sup>41</sup>

And since our knowledge must be based on the data which our senses supply us, what is hidden from our senses remains unknown, and what is distorted when it reaches them, is communicated in this form to us. Science is thus condemned to building upon an unavoidably subjective basis:

La nature est une machine immense dont les ressorts principaux nous sont cachés; nous ne voyons même cette machine qu'à travers un voile qui nous dérobe le jeu des parties les plus délicates; entre les parties

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<sup>41</sup>Elémens de philosophie, Oeuvres, I, 339.



plus frappantes, ou si l'on veut plus grossières, que ce voile nous permet d'entrevoir et de découvrir, il en est plusieurs qu'un même ressort met en mouvement, et c'est là surtout ce que nous devons chercher à démêler. Condamnés comme nous le sommes à ignorer l'essence et la contexture intérieure des corps, la seule ressource qui reste à notre sagacité est de tâcher au moins de saisir dans chaque matière l'analogie des phénomènes, et de les rappeler tous à un petit nombre de faits primitifs et fondamentaux.<sup>42</sup>

The perception of analogy (or in other words the synthesis of principles), with an ever-present respect for simplicity, guides the inquirer along the few paths which permit his passage.

D'Alembert proposes for reformers of all kinds the motto "Hâtez-vous lentement."<sup>43</sup> In this motto may be found both the progressist optimism and prudent pessimism which characterize his sceptical nature. Like his rationalist conception of language, and like his healthy respect for the subjective and the empirical in science, aesthetics and elsewhere, d'Alembert's scepticism has as its aims the assured solidity of all that is put forward as knowledge, and a prudent stepping back from all inquiry which does not have verified principles and acceptable logic as bases for its method.

#### Utilitarianism

In his article "D'Alembert epistemologo" Professor Casini places much weight on the importance of the utilitarian origin of scientific principles. Although d'Alembert certainly erects a system of principles from which specific examples may be deduced (as in the Elémens

<sup>42</sup>Ibid., p. 332.

<sup>43</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 147.

de philosophie, which is an essentially methodological work), in no wise does he conceal that such a structure is an imposed one. Derived from sense data by the perception of "l'analogie des phénomènes,"<sup>44</sup> principles depend on constant reference to these data for a reaffirmation of their validity:

D'Alembert non distingue astrattamente il momento della definizione analitica da quello del controllo empirico; anzi, nel solco della tradizione baconiana e newtoniana, insiste sulla genesi tecnica e pratica delle generalizzazioni scientifiche.<sup>45</sup>

As Professor Casini points out,<sup>46</sup> scientific principles do not proceed, according to d'Alembert, from logical axioms by a process of a purely parthenogenetic nature; rather there must be an eclectic interplay of logic and observation, of which the sole criterion is a pragmatic weighing of the results:

Anche nel confronto geometria-natura l'accento non cade sull'assolutezza, logica o metafisica, dell'uno o dell'altro termine; ma sulla fecondità pratica del loro incontro, particolarmente nelle applicazioni dell'ottica e della meccanica razionale.<sup>47</sup>

In this way, as we have already seen, d'Alembert chooses a path midway between rationalism and empiricism, a path from which he can freely utilize the methods of each, while retaining a due regard for the other as a sort of guide and balance, as a source of verification.

<sup>44</sup>Elémens de philosophie, Oeuvres, I, 339.

<sup>45</sup>Casini, "D'Alembert epistemologo," p. 43.

<sup>46</sup>Ibid.

<sup>47</sup>Ibid., p. 47.

Prudent scepticism prevents the inquiring mind from engaging in speculation which strays beyond the limits set by observation. In the same way a pragmatic respect for the everyday needs of science guides the scientist's movements back and forth between principle and experiment. This pragmatism, much favoured by the practical philosophes, coupled with an eclecticism which sets up pragmatic criteria for its borrowings, constitutes another stern guide for the meeting and mixing of realism and idealism.<sup>48</sup> Principles and methods which from identical data arrive at identical conclusions, are equally valid. But the system which provides the shorter, more concise, and more fruitful explanation, is to be preferred.

#### Relativism

The third guide which compels our philosopher to refrain from making blanket judgments which have applicability beyond legitimate realms, is consciousness of the relative significance of these judgments in face of changing circumstances. Relativism, preventing the inquirer from pushing his principles too far, thus becomes a form of scepticism which soberly limits intellectual extravagance.

Relativism is as important for d'Alembert in literary criticism

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<sup>48</sup> Another, more mundane example of the rule of pragmatism, but which holds some interest for us, is d'Alembert's discussions of whether Latin or French should be used for inscriptions. His conclusion is a common-sense one: "L'inscription doit être dans celle des deux langues qui rendra de la manière la plus courte, la plus énergique et la plus noble, sans dureté ni sécheresse, ce qu'on veut exprimer." ("Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 260) In this way taste and style, as far as inscriptions are concerned, are made to depend only on individual circumstances (see "Eloge de Charpentier," Oeuvres, II, 222-223).

as it is in physical science. In both fields it reduces the danger of extending principles to cases where they cannot apply, of being blinded by the brilliance of a system. The principles of good taste of d'Alembert's century do not necessarily apply to the works of past ages. Concerning Tasso's use of obscenity, for example, d'Alembert magnanimously allows that "ces défauts étaient moins les siens, que ceux d'un siècle où la saine littérature et le bon goût commençaient à peine à renaître."<sup>49</sup> Similarly a writer must be placed in the context of his time for his true value to be determined: "Ce n'est pas seulement par leurs ouvrages qu'il faut mesurer les hommes, c'est en les comparant à leur siècle et à leur nation . . ."<sup>50</sup> For example, Descartes's theories, as we have seen, were shown to be insufficient in some respects even by the mid-eighteenth century, but his value as an innovator in his own century was undiminished. And whether a line of emotional, representational, or intellectual poetry is to be preferred in any given case, depends on many factors: "Tout dépend de la nature du sujet, de l'endroit où est placé le vers, soit de sentiment, soit d'image, et surtout du genre de sensibilité de celui qui lit."<sup>51</sup> An aesthetic principle by which one compares one sort of verse to another thus cannot be pushed too far. Each type of poetic line has its special worth when the ideas it presents are taken into account.

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<sup>49</sup>"Eloge de Mirabaud," Oeuvres, III, 527.

<sup>50</sup>"De la liberté de la musique," Oeuvres, I, 517.

<sup>51</sup>"Dialogue entre la Poésie et la Philosophie, pour servir de préliminaire et de base à un traité de paix et d'amitié perpétuelle entre l'une et l'autre," Oeuvres, IV, 378.

Relativity rules as well in the assessment of standards of taste. Each large social group, with its own level of sophistication, determines its own standards: "Les nations moins éclairées que la nôtre ne sont pas moins heureuses, parce qu'avec moins de désirs elles ont aussi moins de besoins, et que des plaisirs grossiers ou moins raffinés leur suffisent . . . ." <sup>52</sup> Similarly different types of study furnish different sorts of rewards:

Je ne doute point . . . , que si les hommes vivaient séparés, et pouvaient s'occuper dans cet état d'un autre objet que de leur propre conservation, ils ne préférassent l'étude des sciences qu'on appelle exactes à la culture des sciences agréables; c'est pour les autres principalement qu'on se livre à celles-ci, et c'est pour soi qu'on étudie les premières. Un poète, ce me semble, ne serait guère vain dans une île déserte, au lieu qu'un géomètre pourrait encore l'être. <sup>53</sup>

Even so universal a vice as vanity thus springs from somewhat relative sources. The philosopher may be vain about that which he destines for another's ears, only if the other approves; but in the silent solitude of his own labour, self-satisfaction is possible and indeed required.

During the eighteenth century much scientific energy was expended in just such a squabbling over words and points of view as d'Alembert warns against. What has come to be called the vis viva controversy, involved the best scientific minds of the century (including d'Alembert) in an argument about the nature of the "force" which a

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<sup>52</sup>"Réflexions sur l'usage et sur l'abus de la Philosophie dans les matières de goût," Oeuvres, IV, 333. For a discussion of the rôle of cultural conditioning in setting up standards of taste, see pp. 140-141.

<sup>53</sup>"Essai sur la Société des Gens de lettres et des Grands, sur la Réputation, sur les Mécènes, et sur les Récompenses littéraires," Oeuvres, IV, 341.

moving body bears. More specifically the participants were trying to decide whether such a "force" was proportional to the velocity of the body, or to the square of the velocity. We know today that both of these statements are true: if "force" is taken to mean "momentum," then it is indeed proportional to the velocity; but if it means "kinetic energy," then it is of course proportional to the square of the velocity.

D'Alembert rightly saw that clearing up the meaning of "force" would resolve the difficulty:

Enfin ceux même qui ne seraient pas en état de remonter jusqu'aux principes métaphysiques de la question des forces vives, verront aisément qu'elle n'est qu'une dispute de mots, s'ils considèrent que les deux partis sont d'ailleurs entièrement d'accord sur les principes fondamentaux de l'équilibre et du mouvement.<sup>54</sup>

Each group, however, has left the word "force" veiled in mystery: "Le mot de 'force' ne nous représente qu'un être vague, dont nous n'avons point d'idée nette, dont l'existence même n'est pas trop bien constatée, et qu'on ne peut connaître tout au plus que par ses effets."<sup>55</sup> The solution which d'Alembert offered consists of eliminating concepts which he feels are misleading and unnecessary. He rejects forces, and tries to deduce an adequate descriptive theory through the use of strict logic, from fundamental concepts of matter and motion. He thus avoids defining what a "force" really is, and while, in so doing, he follows his own precepts in a very admirable fashion, mechanics is really no

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<sup>54</sup>"Introduction au Traité de dynamique," Oeuvres, I, 401. (The Belin Oeuvres reproduces the introduction to the 1758 edition of the Traité; the statements on vis viva in this later edition are much more satisfactory than they were in the 1743 edition.)

<sup>55</sup>"Eloge de Bernoulli," Oeuvres, III, 356.

further ahead. In fact, Thomas L. Hankins, who has assiduously studied d'Alembert's rôle in eighteenth-century science, claims that d'Alembert actually misled subsequent researchers by steering them away from this fundamental concept.<sup>56</sup> The whole problem was not really solved until it was attacked, in the nineteenth century, from another direction; when the concept of energy was developed, forces were analysed from that point of view.<sup>57</sup>

The essential lesson to be learned from this controversy, and from d'Alembert's involvement in it, is that scientists approaching the same problem, reasoning from the same basic principles, will all reach valid conclusions, if their methods are sound. But failure to define one's terms with proper care can lead to unnecessary disputes, where what seems to be a dispute over one term, is in reality the confused identification of one term with another quite different one. If the two sides in this controversy had taken care to clarify their terms, says d'Alembert, there would have been no disagreement. If each side had taken into account the relativity of its own preoccupation, neither would have wasted effort in an empty conflict.

Relativism is thus, with scepticism and pragmatism, a factor in the constructive limiting of speculation. Above all it is concerned with perceiving in what ways a judgment is based on a limited point of view. The philosophic spirit, as we find it manifest in d'Alembert, hopes to keep itself concerned with propositions as universal as

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<sup>56</sup>"Eighteenth-Century Attempts to Resolve the Vis viva Controversy," p. 286.

<sup>57</sup>*Ibid.*, p. 297.

possible by muting the important influences of prejudice and shortsightedness.

### Intuition

Finally in this chapter concerning the forces at work bridling our somewhat chaotic curiosity, we must return to the almost Platonic concept of intuition to which d'Alembert subscribes. We have seen how d'Alembert approves of his own method as long as it remains in touch with empirical reality, as long as its definitions are clear, precise, and universally accessible. But some ideas, as Muller points out, are so simple that they defy any attempt at rational explanation:

. . . d'Alembert a . . . conçu une intuition à la fois claire, qui s'impose à l'esprit, et cependant telle que l'idée puisse rester inexprimable, soit par la nature de l'idée, soit à cause de l'imperfection du langage.<sup>58</sup>

Muller is here only attaching the label "intuition" to a tendency clearly recognized and expressed in almost identical words by d'Alembert himself:

Mais ces deux définitions [de la ligne droite et de la surface plane], quoique peut-être préférables à toutes celles qu'on pourrait imaginer, ne renferment pas l'idée primitive que nous nous formons de la ligne droite et de la surface plane; l'idée si simple, et pour ainsi dire si indivisible et si une, qu'une définition ne peut la rendre plus claire, soit par la nature de cette idée même, soit par l'imperfection du langage.<sup>59</sup>

And in addition the definition usually given of the straight line

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<sup>58</sup>Maurice Muller, Essai sur la philosophie de Jean d'Alembert, pp. 214-215.

<sup>59</sup>Eléments de philosophie, Oeuvres, I, 270.



expresses "plutôt une propriété de la ligne droite, que sa notion primitive."<sup>60</sup> Such ideas as the basic notions of the straight line and the plane surface are thus very similar to the "clear and distinct" ideas of Descartes, and hence do not admit of definition in the usual linguistic form.<sup>61</sup>

Being able to sense these notions is part of what d'Alembert calls "l'esprit géomètre." But when such intuition embraces the whole range of human knowledge, as it did in Newton's case, our philosopher calls it "l'esprit géométrique." Both these forms of intuition are characterized by an ability to seize the analogies presented by phenomena, however hidden they may be to the ordinary observer:

L'esprit qui ne reconnaît le vrai que lorsqu'il en est directement frappé, est bien au-dessous de celui qui sait non-seulement le reconnaître de près, mais encore le pressentir et le remarquer dans le lointain à des caractères fugitifs. C'est là ce qui distingue principalement l'esprit géométrique, applicable à tout, d'avec l'esprit purement géomètre, dont le talent est restreint dans une sphère étroite bornée.<sup>62</sup>

This talent for making fruitful conjectures in a scientific realm can apply either to movement from the empirical to the universal, or vice versa:

<sup>60</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 279.

<sup>61</sup>Condillac, in the Essai sur l'origine des connoissances humaines, Part I, Section III, par. 10 (in Oeuvres philosophiques de Condillac, I, 38-39), speaks of ideas which are too simple to be defined; the Cartesians, he says, sometimes try to define ideas which are in themselves clear and distinct, while leaving undefined other ideas of some complexity. In a later work he adds, "Si l'on peut voir sans définir, les définitions deviennent inutiles." (La Logique ou les premiers développemens de l'art de penser [Part II, Chap. vi], from Cours d'études, in Oeuvres philosophiques de Condillac, II, 403)

<sup>62</sup>Elémens de philosophie, Oeuvres, I, 154-155.

En physique l'art de conjecturer peut avoir pour but, ou de trouver la cause des faits que l'expérience et l'observation nous découvrent, ou de nous conduire à la découverte de nouveaux faits qui ajoutent quelques degrés de perfection aux connaissances que nous avons sur les phénomènes de la nature.<sup>63</sup>

In this way intuition, a mysterious quality like genius, leads the philosopher deep into the matter of his preoccupation. Intuition, and with it "l'art de conjecturer," to some extent lead him out of his scepticism, but this latter quality must in turn limit the wanderings and flights of the former.

#### Conclusion

We have seen in this chapter that, as for most other major thinkers of his time, the whole of d'Alembert's search for truth is limited by the ends in view. Scepticism, pragmatism, and relativism each cause the philosopher to re-examine his methods, his data, and his conclusions, in the context of what can be known, rather than of what merely would be known. Thus we see that the whole linguistic structure, in which more sophisticated methods like deduction and induction are implicit, is in turn limited by these forces: scepticism declares what is definable, pragmatism sketches out the best formulae for communication of thoughts, and relativism keeps us always aware of the universal. In short, for d'Alembert, the search for truth is prudently and unavoidably limited, in a methodological sense, by specific predetermined aims.

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<sup>63</sup>"Eclaircissement" to the Elémens de philosophie, Oeuvres, I, 158.

CHAPTER VII  
GENERAL CONCLUSION: THE IMPLICATIONS  
OF A THEORY OF LANGUAGE

In this thesis it has been my purpose to consider d'Alembert's conceptions of language from two points of view. First, I have investigated the answers which d'Alembert supplies to some individual, separable questions about the nature and purpose of language. Such questions concern the origin of language in primitive man, the nature and importance of definitions in an established idiom, the purpose of the sentence, inversions in the order of words in a propositional statement, the nature of the translation process, and a fundamental stylistic credo. As well I have tried throughout the thesis to show how a knowledge of these linguistic conceptions can help us to understand the approach which d'Alembert adopts to questions of wider philosophical import, such as the correspondence of language to ideas, the interplay of analysis and synthesis in the thought process of rational man, the structure which can be perceived in the vast body of human knowledge, and the assessment of mankind's legitimate intellectual range and domain.

It certainly cannot be concluded from this study that d'Alembert's ideas on language constitute a unified, original body of conjectural statements which determine his philosophical position. It has not been my aim to prove such a thesis. Rather I have tried to show that his conceptions of language, as I have understood them, are implicit in the attitudes and methods he adopts in investigating many

subjects; by studying his language theory and its implications, we have perceived a unity of approach in his diverse activities.

Let us briefly review d'Alembert's conceptions of language. As a follower of Locke, d'Alembert accepted empiricist opinion about the origin of our ideas: be they simple or complex, they derive from sense experience. He also agreed with Locke's opinion that men, who are rational beings, supply word-symbols for their ideas. These symbols were seen to receive a fixed and universally accepted form not because speakers habitually used them and automatically accepted them, but rather because they rationally decided that a particular sign should symbolize a particular idea. D'Alembert believed, then, that words are arbitrary signs for our thoughts, instituted by agreement among the rational members of a society. Need provides the impetus to bring men together in societies, and for them to institute a language to communicate their thoughts to one another. D'Alembert saw that in order to survive, human beings had to supply themselves with protection, shelter, and sustenance; it is easier to fulfil these needs when the individual shares the burdens with his fellows and communicates with them by means of language.

Words are for d'Alembert the arbitrary signs which men give to their ideas. Similarly, definitions are formulated to fix and clarify the meaning of the concept which a word signifies. Thus a definition describes an idea and clarifies a word; it does not provide an objective description of the thing which the word is meant to signify. It is of paramount importance for d'Alembert to provide clear, precise definitions from which all the implications of a word can be deduced.

New truths are arrived at by manipulating facts which have previously been carefully verified, and symbolized by a word for which a complete and universally accepted definition exists. Therefore all advances in knowledge are based on the clear definition of the more basic, rudimentary symbols which go into making up more complex ones.

The medium in which symbols are combined, and in which the results of these combinations are described, is for d'Alembert the sentence, or propositional statement. In his opinion the sentence is a reflection of the thought processes in the mind. Various ideas brought into play in thought processes are symbolized by the words which make up the sentence; the order of these ideas in the mind is reproduced in the order of the parts of the sentence. The words which we use to express our thoughts should thus be made to conform to the "logical" order, the order in which these thoughts are linked together in the mind. In d'Alembert's philosophy, then, words are arbitrarily instituted signs, and their order reflects that of the ideas which make up a train of thought.

In his theory of knowledge, d'Alembert admits two types of thought processes in the mind, analysis and synthesis. In the first, the mind progresses, by means of abstraction, from particular details to general statements or principles. The observer perceives a characteristic which is shared by two or more phenomena, and assigns a name to the shared characteristic. In synthesis, the opposite movement is undertaken. Principles are elaborated in order to produce descriptive statements about real phenomena. These two processes are not considered by d'Alembert as separate, distinct philosophical viewpoints,

from which the whole of nature should be regarded. Even though the analytic process is identified with empiricist method, and synthesis with rationalist method, both processes take place, according to d'Alembert, within the framework of language. Words and sentences are the elements of which analytic and synthetic judgments are composed. The purpose of these two processes is to permit the thinking mind to rove freely within the structure of knowledge. According to d'Alembert's conception all fields of knowledge are related. One should be able to proceed from any one known fact to any other by a continuous path; one should be able to pass from each recognized truth to its neighbour, which is either deduced or induced from facts coming before. D'Alembert suggests that language has two purposes, to communicate knowledge and to extend its limits. Analysis and synthesis, which take place within the linguistic framework of word-symbols and propositional statements, are the methods by which this aim is achieved.

D'Alembert carried this view of the structure of knowledge over to other realms as well, the most important of which is aesthetics. Just as knowledge is composed of interrelated principles and particular facts, so too in aesthetic theory, the beautiful is made up of both universal and relative elements. In the individual arts which d'Alembert considers, such as music, translation, and stylistics, attention must be paid, he asserts, to both of these sets of constituent elements. In a musical phrase, in a translation, or in a piece of prose or poetry, an astute observer must be able to perceive the simultaneous presence of both a regard for basic rules, which set out the universal criteria of beauty, and the fire of genius. The balance between these two

influences, rule and individual creativity, is determined by the canons of good taste, which are ingrained as a result of a conditioning process. Universal and relative elements, which reflect the two ways in which linguistic building blocks may be manipulated, must be recognized and evaluated when either the artist or his critic tries to judge a work of art. Aesthetics is a field of concern in which the implications of d'Alembert's language theory can be most easily and profitably discerned.

D'Alembert approaches in a similar manner the limitations which he judges should be imposed on man's intellectual endeavour. The idea of a structure of knowledge is in essence an optimistic one; the philosopher who adopts it claims, in effect, that everything, from the most abstract first principles to the most insignificant phenomena, can be known and that every piece of knowledge can be assigned a place in an all-inclusive order. This is the optimism which is generally associated with the Enlightenment idea of progress. But d'Alembert tempers this attitude with an awareness of the necessary limits to human curiosity. Some questions, he declares, are beyond our reach, at least for the moment; these must be left alone, for blind speculation is of no use when one is trying to accumulate sure knowledge. Similarly, trying to gain knowledge with no imaginable practical use, or knowledge which is true for only a restricted group, is unjustifiably vain. The criteria dictated by scepticism, utilitarianism, and relativism, cautions d'Alembert, must be continually borne in mind; to ignore them, for example by using incomplete definitions, is to slip into error and futility.

It has been made clear throughout this study that with regard to the specific linguistic ideas which he advances, d'Alembert is seldom original. His theory of language origin is reminiscent of Locke. Other contemporaries, such as Condillac and Rousseau, thought more deeply about the matter and produced more detailed, coherent theories. And such thinkers as Charles de Brosses and Turgot advanced well developed theories about what factors determine the form of linguistic signs. Universal grammar theory was a rationalist notion which eighteenth-century thinkers confidently accepted from their seventeenth-century predecessors. D'Alembert did not question either it or its basic assumption that language represents universal patterns of thought. D'Alembert's concept of the analytical form which aesthetic theory must take, was common among his contemporaries and their predecessors, from Shaftesbury and Hutcheson to Diderot and the abbé Batteux. His scepticism, his utilitarianism, and his relativism, taken together with his conviction that progress was by its very nature both possible and desirable, were of course characteristics of not only the philosophes and their intellectual allies, but of more conservative eighteenth-century groups of thinkers and writers as well.

But we must not be in doubt about d'Alembert's extraordinary position in the European Enlightenment. He was probably the greatest of the eighteenth-century philosopher-scientists, the most eminent of an extensive international community of thinkers who made lasting scientific contributions as well as influential literary ones. Certainly other great "natural philosophers," such as Condorcet in mathematics, Maupertuis in physics and geography, and Buffon in



natural history, wrote voluminously and well on a variety of subjects. Only d'Alembert of this number, however, enjoyed throughout the key years of the 1750's and 1760's a dominant position in the circles of the philosophes and Encyclopaedists, circles which we tend to look upon today as the intellectual centre of eighteenth-century Europe.

What distinguishes d'Alembert's particular contribution to eighteenth-century science and letters is the kind of continuity of approach which I have tried to reveal throughout this study. A drive for order, and confidence in the value of his methods, which are borrowed from both Descartes and rationalism, and Locke and empiricism, are evident in all his writings. Posterity has judged that his method was most successful first of all in mathematics, or more precisely in theoretical physics, where he has many legitimate claims to fame:

He published two treatises on hydrodynamics, made the first extensive use of partial differential equations, wrote the wave equation and applied it to vibrating strings, solved the problem of the precession of the equinoxes, gave an approximate solution to the three-body problem, and contributed to the development of lunar theory.<sup>1</sup>

Speaking more generally, it has been admitted that d'Alembert provided a new language for Newtonian mathematical and gravitational theory, and thus paved the way for such later theorists as Laplace and Lagrange:

In a large measure it is true to say that d'Alembert helped to work an accomodation of Newtonian and Cartesian thought, for already--only 15 years after the death of Newton--the strongly physical intuition of Newton was being transformed into a rigorously abstract set of differential equations.<sup>2</sup>

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<sup>1</sup>Thomas L. Hankins, ed., Traité de dynamique, by d'Alembert, p. xv.

<sup>2</sup>J. Morton Briggs, Jr., "D'Alembert: Philosophy and Mechanics in the Eighteenth Century," p. 55.

The principal directions which d'Alembert followed in his scientific work were followed as well in his more literary and philosophical pursuits. The Discours préliminaire, his most famous single work, and the one with which his name was most commonly associated even during his lifetime, is in essence a brilliantly compact popular history of the mouvement philosophique viewed from the mid-eighteenth century. As we saw in Chapter V, his place in the history of musical theory is assured by his simplified rendering of Rameau's system of harmony. And the Elémens de philosophie, which in my opinion is his most characteristic work, is based on a method of approaching any field of inquiry by way of its simplest, most universal principles. This method, as Comte saw it embodied in D'Alembert's Principle, formed much of the basis for the positivist tradition:

Son entière extension mécanique [celle de la loi de Newton] conduit au célèbre principe construit par d'Alembert, pour ramener l'étude du mouvement d'un système quelconque à celle de l'équilibre correspondant. Or, les plus nobles phénomènes permettent aussi, d'après une marche analogue, une équivalente réduction des conceptions dynamiques aux notions statiques. C'est ainsi que j'ai construit le grand aphorisme sociologique ("le progrès est le développement de l'ordre") sur lequel repose tout ce traité.<sup>3</sup>

From the viewpoint of posterity, d'Alembert's method bore the most fruit in these realms which we have just seen. But it is nonetheless present in other, less popular works as well, such as the pieces on translation which are read today only to aid in picturing eighteenth-century standards in that art. It seems to me that d'Alembert's whole production is written in a tone of modesty and reserve, which may well in some

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<sup>3</sup>Auguste Comte, Système de politique positive (Paris: Mathias, Carilian-Goeury and Victor Dalmont, 1851-54), I, 494-495.

cases have been affected, but which nevertheless shows that the aims he envisaged were in fact rather limited. He did not aspire to any kind of artistic or literary flamboyance; order and solidity are his most characteristic stylistic and intellectual traits. In an era in which such undivided attention was devoted to problems of knowledge and communication, d'Alembert, with his concern for the order and accessibility of all knowledge, played an extremely important rôle.

Diderot, Rousseau, and Voltaire are of course the dominating figures of eighteenth-century letters, and d'Alembert cannot be classed with them. But it seems that we admire today the works of these three outstanding writers which were unknown, unpopular, or simply regarded as second-rate in their own time. Of Voltaire's immense production, the correspondence and the contes philosophiques are now preferred, writings which in the eighteenth century were classed below his tragedies and poetry in importance. Le Neveu de Rameau and Le Rêve de d'Alembert, which are essential for understanding Diderot's great genius, were not published in their original form until long after their author's death. And Rousseau's whole life was spent facing adverse reaction to his supposedly dangerous ideas. Such was the creative genius of these giants that today we find inexhaustible sources of pleasure in their art and intelligence.

D'Alembert's major contribution must be sought not in great individual creative acts, but rather in his symbolizing or embodying much of the spirit of the French Enlightenment. Intellectual versatility, a particular brand of social grace, oratorical talent, and universal curiosity, are characteristics which members of all intellectual circles

admired, from courtiers to habitués of the cafés, from the readers of the Mercure de France to supporters of the Année littéraire and the Journal de Trévoux. D'Alembert, along with the other philosophes (except Rousseau, who was unable or unwilling to conform to the standards of behaviour the salons demanded) possessed all these traits to a high degree. Faith in progress, faith in reason, and faith in man, all typical articles of Enlightenment thought, were also part of d'Alembert's makeup, as were concern for the practical utility of all worthwhile knowledge, and its communication to literate, thinking individuals. But the characteristics of the period which he stressed are, as I have mentioned, the drive for order and the conviction that all knowledge must be carefully formulated and linked to facts already known in order to ensure its universal truth. Most of d'Alembert's contemporaries readily recognized the value of such principles as these, but d'Alembert seized upon them, perfected them, codified them, and employed them in all his intellectual pursuits. Because of his evident preference for these methodological ideals and the excellent use he made of them, d'Alembert came to be regarded as their most powerful, systematic, and influential proponent. It is upon them that much of his glory rests, even though such a contribution was valued more by his contemporaries, for whom the battle for solidly based and logically ordered knowledge was an immediate concern, than by posterity, which sometimes finds surprising the enthusiastic praises which d'Alembert received during his lifetime.

Such intellectual traits as the drive for order and simplicity can be seen, as I have shown, as implications of d'Alembert's ideas

about language. It has been my purpose in preparing this dissertation to show that his conceptions of the word and of the sentence contain the germ of a systematic justification for the order and simplicity to which he aspired. I believe that by adopting this point of view I have been able to demonstrate how d'Alembert's extraordinarily diverse talent was governed by a uniquely personal approach to many different kinds of problems. Knowledge of d'Alembert's style, method, and preoccupations, gained through a study of his conceptions of language, is a key to a clearer understanding of the spirit of his age.

APPENDIX A

CHRONOLOGY OF D'ALEMBERT

- 1717 Born during the night of November 16-17. He is the illegitimate son of Madame de Tencin and the chevalier Louis-Camus Destouches. Exposed the same night on the steps of the church of Saint-Jean-Lerond, which at that time stood near Notre Dame. On November 17 he is baptized Jean Lerond, and taken to the Maison de la Couche, a home for abandoned children, and thence to Crémery, in Picardy, for six weeks.
- 1718 By his father's intervention through Dr. Molin, physician to the king, the baby is placed with Mme Rousseau, wife of a glazier in the rue Michel-le-Comte, in the Marais. The child receives his first formal education at the private school of one M. Bérée. He then enters the Collège des Quatre-Nations, where he uses the name D'alembert. Soon afterwards he chooses the final form of his name.<sup>1</sup>
- 1726 On the death of his father, d'Alembert receives an annuity of 1200 livres.
- 1735 Receives the degree of bachelier. Begins law studies.
- 1738 Named avocat. Spends a year studying medicine.
- 1739 July: sends to the Academy of Sciences his remarks concerning some errors in the Analyse démontrée of Reyneau, a standard mathematical work.
- 1740 Communicates to the same assembly a work on the refraction of solid bodies; the paper receives Clairaut's praises.
- 1741 May 29: named adjoint of the Academy of Sciences.
- 1743 Publishes the Traité de dynamique, his first significant work and his most influential scientific one. In this treatise is enunciated for the first time the theorem which has come to be known as D'Alembert's Principle.<sup>2</sup>

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<sup>1</sup>I have chosen to use the form "d'Alembert" throughout this thesis, even though Mr. Besterman prefers that the form "Alembert" be employed in works which he edits. D'Alembert himself, in the autographs which I have seen, wrote "Dalembert," a form used by some critics, such as Lanson, until quite recently. However most printed sources, including eighteenth-century ones, use "d'Alembert," and place his name in alphabetical listings with the A's.

<sup>2</sup>See Appendix B.

- 1744 Traité de l'équilibre et du mouvement des fluides.
- 1745 Named simple adjoint of the Academy of Sciences; receives an annuity of 500 livres.  
December: comes in contact with the publishers of a proposed translation of Chambers' Cyclopaedia. This project will develop into the Encyclopédie.
- 1746 Produces his Réflexions sur la cause générale des vents, which in a Latin version wins a prize offered by the Berlin Academy. Named a member of that assembly, and associé géomètre of the French Academy of Sciences.  
Begins his participation in Parisian salon society; introduced to Mme Geoffrin, and in the following few years to the duchesse Du Maine and to Mme Du Deffand. He meets, among others, Montesquieu and Hénault.
- 1747 Recherches sur les cordes vibrantes, an important work in which the mathematical description of wave motion receives its modern form.  
October 16: Diderot and d'Alembert named editors of the Encyclopédie.  
Begins his relations with Rousseau about this time.
- 1749 Recherches sur la précession des équinoxes, et sur la nutation de l'axe de la terre, dans le système newtonien.
- 1750 Diderot publishes the "Prospectus" of the Encyclopédie.
- 1751 June: first volume of the Encyclopédie (Discours préliminaire, "Académie [Hist. litt.]," "Algebre," "Analytique," "Arithmétique," "Astronomie," "Attraction").<sup>3</sup>
- 1752 January: volume II of the Encyclopédie ("Caractere," "Causes finales"); and later in the same year volume III ("Avertissement des éditeurs," "Collège").  
Frederick the Great offers him the position of President of the Berlin Academy, which he refuses.  
Elémens de musique théorique et pratique suivant les principes de M. Rameau.  
Essai d'une nouvelle théorie de la résistance des fluides.
- 1753 First edition (in two volumes) of the Mélanges de littérature, d'histoire, et de philosophie.
- 1754 Volume IV of the Encyclopédie ("Corollaire," "Corps [Métaphys. & Phys.]," "Cosmologie," "Cours [Gramm.]," "Déduction,"

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<sup>3</sup>After the announcement of each volume, I include in parentheses the names of d'Alembert's more important contributions. He provided in all about 1500 articles for the enterprise, of which most deal with purely scientific matters.

- "Définition, en Mathématiques," "Dictionnaire").  
 Meets Julie de Lespinasse in the salon of Mme Geoffrin.  
 Frederick awards him an annuity of 1200 livres.  
 Publishes the first two volumes of the Recherches sur différens points importans du système du monde.  
 November 28: elected to the French Academy, succeeding the Bishop of Vence.  
 November 30: Tolomas, a Jesuit and professor at the Grand-Collège at Lyon, is chosen to reply to the attacks on his order voiced by d'Alembert in "Collège." The "Affaire Tolomas" begins.
- 1755 Volume V of the Encyclopédie ("Eloge de Montesquieu," "Elémens des sciences," "Elocution," "Erudition").
- 1756 April 10: named a pensionnaire of the Academy of Sciences.  
 Volume VI of the Encyclopédie ("Expérimental").  
 Third volume of the Recherches sur différens points importans du système du monde.  
 August: visits Voltaire at Geneva.  
 Receives a pension from the king of France.
- 1757 March: "Réflexions sur l'usage et sur l'abus de la philosophie dans les matières de goût."  
 November: volume VII of the Encyclopédie ("Eloge de Du Marsais," "Fondamental," "Force," "Forme substantielle," "Gamme," "Genève," "Géometre," "Géométrie").
- 1758 February: d'Alembert leaves the post of editor of the Encyclopédie, in large part because of the storm provoked by "Genève."
- 1759 Second edition of the Mélanges, expanded this time to four volumes (in which appears for the first time the Elémens de philosophie). This edition will be republished in 1760 and again in 1764.
- 1761 "Réflexions sur l'histoire" read at the Academy.  
 Suppression of the Jesuits.  
 First volume of the Opuscles mathématiques (there will be seven more, published up to 1780, and a ninth volume will remain unfinished at his death).
- 1762 "Réflexions sur la poésie" read at the Academy.  
 Beginning of his correspondence with Catherine the Great, which will continue until 1772.  
 Second edition of the Elémens de musique, with the addition of more polemic comment against Rameau.
- 1763 Visits Frederick at Potsdam.
- 1764 Julie de Lespinasse leaves Mme Geoffrin and establishes her own salon.



- 1765 D'Alembert is seriously ill. He leaves his adopted mother's home and moves to the house of his friend Watelet in the boulevard du Temple, where he stays a short time. He then takes up residence in the same house as Julie at the corner of the rue Saint-Dominique and the rue de Belle-Chasse.  
Sur la destruction des Jésuites en France, par un auteur désintéressé.  
 Named titulaire of the Academy of Sciences (with an annuity). Volumes VIII to XVII of the Encyclopédie ("Nature [Philos.]," "Newtonianisme," "Physique," "Quantité [Philosophie]").
- 1767 Expulsion of the Jesuits from France.  
 Fifth edition of the Mélanges, with the addition of a fifth volume containing the "Eclaircissements" to the Elémens de philosophie.
- 1768 Named pensionnaire géomètre of the Academy of Sciences.
- 1770 Sets out, for health reasons, on a trip to Italy, for which Frederick pays. Stops at Geneva to visit Voltaire, and then returns to Paris.  
 Second edition of the Traité de l'équilibre et du mouvement des fluides.  
 Sixth edition of the Mélanges.
- 1772 Named permanent secretary of the French Academy.
- 1776 Julie de Lespinasse dies. D'Alembert moves shortly thereafter to the apartments in the Louvre which, as permanent secretary of the Academy, he has the right to occupy.
- 1777 Nouvelles expériences sur la résistance des fluides (with the abbé Bossut and Condorcet).
- 1778 Last meeting with Voltaire, when Voltaire returns to Paris for the last time.
- 1783 After more than a decade of ill health, d'Alembert finally succumbs, on October 29, to an ailment of the urinary tract. His body lies in state at the Louvre and then is taken at nightfall on October 31 to the church of Saint-Germain-l'Auxerrois, where vespers are chanted. D'Alembert is buried with little ceremony in the fosse commune of the cimetière des Porcherons, which was located close to the church of Notre-Dame de Lorette, near the present Place Pigalle, and was shared by the parishes of Saint-Eustache and Saint-Germain-l'Auxerrois. Alexandre Rémy, Watelet, and Condorcet, his executors, try at the last moment to obtain for him an individual grave but are not successful.

## APPENDIX B

### D'ALEMBERT'S PRINCIPLE

In 1743, at the age of twenty-five, d'Alembert published the first important work of his career, the Traité de dynamique. This is the standard volume to which historians of mathematics and mechanics turn in their discussion of the principle bearing his name.

Before this important publication the method which is outlined in a generalized form in D'Alembert's Principle had been recognized by Newton and Johann Bernoulli.<sup>1</sup> D'Alembert himself had discussed the type of problem which the principle treats in a communication to the Academy of Sciences in 1742.<sup>2</sup> But it is given its first full, exhaustive presentation in the Traité itself, where it appears together with a philosophical discussion of the basis of mechanics and illustrations of how it can be put to practical use.

D'Alembert's Principle describes a system of bodies in equilibrium, that is, joined together by inflexible rods, for example, which is being acted upon by an external force which affects each member body. D'Alembert asserts that since the system is in equilibrium, the sum of the forces which are exerted on each individual body can be resolved into "inertial forces," or forces which cause the body to move with the system as a whole, and "forces of constraint," which

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<sup>1</sup> Florian Cajori, A History of Mathematics (New York: MacMillan, 1938), p. 242.

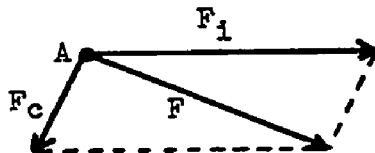
<sup>2</sup> René Dugas, A History of Mechanics, p. 248.

hold the body in its position in the system. A modern enunciation of the theorem is given by Professor Hankins as follows: "The impressed forces on a mechanical system are balanced by the sum of the inertial forces and the forces of constraint."<sup>3</sup> In simpler terms, this means that from the point of view of someone observing the system as a whole, the individual body in the system may be executing a very complex motion, but from the point of view of an observer sitting within the system and moving with it, each constituent body appears to remain stationary no matter what external forces are impressed on the system.

The formal enunciation of the principle in the Traité is as follows:

Décomposés les Mouvements  $a, b, c$  &c. imprimés à chaque Corps, chacun en deux autres  $a, \alpha; b, \beta; c, \gamma$  &c. qui soient tels, que si l'on n'eût imprimé aux Corps que les Mouvements  $a, b, c$  &c., ils eussent pu conserver ces Mouvements sans se nuire réciproquement; & que si on ne leur eût imprimé que les Mouvements  $\alpha, \beta, \gamma$  &c. le système fut demeuré en repos; il est clair que  $a, b, c$  seront les Mouvements que ces Corps prendront en vertu de leur action.<sup>4</sup>

To simplify this form of the principle, let us consider a body A, which is being acted on by forces of which the sum is F, the impressed force:



If the force  $F_c$  is the sum of the forces of constraint, or in other words of all forces acting to hold the body in its place in the

<sup>3</sup>Thomas L. Hankins, ed., Traité de dynamique, by d'Alembert, p. xxxi.

<sup>4</sup>Traité de dynamique (1743 ed.), p. 51.

system, then a force  $F_i$ , the inertial force, which added to  $F_c$  gives  $F$ , is the force acting on A which causes it to move with the whole system. In summary, the body A moves as if  $F$  alone were being exerted on it. But  $F$  is the sum of  $F_i$ , the force exerted on the whole system, and  $F_c$ , the force resulting from the structure of the system. If any two of these forces are known, then the third can be determined by calculation.

The value of this principle to mechanics is that it allows the motion of a whole system to be described without regard to its complex internal forces. This virtue, as Ernst Mach points out, is primarily that of a labour-saver: "The principle does not so much promote our insight into the processes as it secures us a practical mastery of them. The value of the principle is of an economical character."<sup>5</sup> That is to say that the problems which D'Alembert's Principle helps us to solve could be solved in another fashion, but it would be a solution more complicated than the one that the principle permits.

This principle may be given, it seems to me, a wider interpretation; by setting it in the context of d'Alembert's philosophy as a whole and considering his involvement in many fields of inquiry, we can perceive more clearly the motives behind much of his activity. First of all, the most obvious motive is the propensity for economy, brevity, and conciseness, which is as much a characteristic of d'Alembert's aesthetic theory and style as it is of his mechanical principle.

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<sup>5</sup>Mach, The Science of Mechanics, p. 341.

But more important is the division of the forces acting on each body into interior and exterior ones. In a system of bodies on which exterior forces are acting, the movement of the whole system is not affected by the forces holding the bodies themselves together; but on the other hand the manner in which each individual body reacts is determined in part by the sum of these interior equilibrating forces. The force on the individual body is equal to the combined effects of interior forces and exterior ones. The interior forces are determined partly by the nature of the body itself, partly by the nature of other bodies in the system, and partly by the nature of the links among the bodies. Similarly the subjectivity which we cannot avoid bringing into play in forming a judgment is determined by our own perceptive mechanisms and our own mind. An objective judgment does not depend on any variable characteristics of the individual; it is based on a passive perception of the exterior world. D'Alembert suggests that in a mechanical system such as the one that has been described, the bodies are subject to internal and external forces, just as in the reasoning individual both internal and external forces are at work when he makes a judgment.

The kind of breakdown of causes which d'Alembert proposes in his discussion of aesthetics, music, translation, and style (see Chapter V), that is to say the breakdown into impersonal, absolute natures and personal, relative ones, is the same kind of analysis to which his principle gives licence in solving mechanical problems. The description of the movement of a system corresponds to the resolution of a problem with reference only to universal principles, while the

description of the movement of an individual body in the system corresponds to that solution which respects individual considerations as well as the universal ones. Without neglecting personal preference, which always comes into play in determining the attitude of the individual, d'Alembert tries as well to analyse what universally-shared conceptions, such as absolute beauty and universal grammar, can be perceived and codified.

I do not wish to infer that d'Alembert's approach to aesthetic problems, or indeed to the structure of thought and language, proceeds directly from the analytic methods outlined in the Traité de dynamique. Rather in my opinion D'Alembert's Principle contains the essential elements of the much more versatile philosophy of nature and theory of knowledge which we have seen throughout this study: the drive for simplicity through careful analysis and judicious formulation of principles.

## APPENDIX C

### A SELECTED TEXT

In May, 1777, six and a half years before his death, d'Alembert read before the French Academy his "Réflexions sur la théorie de la musique." Included in this address are the following paragraphs:

Il paroît que l'habitude influe beaucoup plus encore sur le plaisir qui résulte de l'harmonie que sur celui qui naît de la mélodie simple, et qu'un homme qui entendroit pour la première fois un grand concert n'entendrait que du bruit: je parle même d'un concert vraiment harmonique et à plus forte raison de cette musique étourdissante et pauvre, malheureusement trop commune, qui ressemble à une conversation décousue, où tout le monde parleroit à la fois et où personne ne diroit rien qui valût la peine d'être écouté.

L'harmonie est pourtant dans la nature, car il est certain qu'un son simple en apparence en renferme plusieurs autres; il est vrai que l'harmonie donnée par la nature est bien moins composée que celle de nos concerts; mais l'art ne peut-il pas ajouter sur ce point à la nature? Voilà en moins ce qu'il a tâché de faire et tel est l'objet principal de la théorie de la musique.<sup>1</sup>

This passage is drawn from a work on a subject which d'Alembert knew well, and on which he had written a great deal since the first edition of his Elémens de musique théorique et pratique, suivant les principes de M. Rameau, which appeared in 1752. Aside from summing up his attitude towards harmony as a science, these lines communicate as well many of the essential ideas which go towards making up his philosophy of nature. They also provide a characteristic example of the crisp rhetorical style which so much of his prose displays.

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<sup>1</sup>Oeuvres et correspondances inédites de d'Alembert, pp. 136-137.

In this selection music is considered from an artistic and a scientific point of view. This corresponds to the division which d'Alembert establishes in his general aesthetic theory, the division of beauty into universal and relative elements. Harmony has a basis in nature which can be studied scientifically, he declares, but art adds something to nature's production which can only be evaluated in terms of one's personal or cultural preference.

Man, according to d'Alembert, has an innate sense of appreciation for music, but his primitive tastes are limited to simpler forms. To seize the universally beautiful element of music, in a simple melodic line for example, the listener does not need the preparation for more complex forms which a long cultural experience provides. This cultural conditioning, however, is essential for appreciating the kind of music which d'Alembert would hear at the opera or at a concert. The profusion of parts and timbres which make up more sophisticated music would only be noise to an uninitiated ear.

D'Alembert includes in the first paragraph a veiled parenthetical comment against much of the music of his day, "cette musique étourdissante et pauvre, malheureusement trop commune . . . ." The proliferation of florid musical lines being played or sung simultaneously was a characteristic of French baroque music which the Encyclopaedists during the "Querelle des bouffons" had found especially irksome. They preferred the simple, delicate accompaniment for which Italian rococo music furnished a model. Even twenty years after the "Querelle" ended, d'Alembert typically continues to express support for the position



which his associates had advanced before.<sup>2</sup> This type of comment, whose subtle polemic intent would be immediately understood by the Academic audience, is typical of d'Alembert's writing.

But d'Alembert hastens to recognize that harmony does have a kind of basis in nature. In Rameau's system, which d'Alembert knew very well, single musical tones are recognized as being composite; for Rameau, each bass note contains in the form of overtones all the notes of the chords which can be built upon it. D'Alembert does not go so far. He declares that nature's laws can only supply the simplest kind of harmony. The music which is heard in Paris in 1777 is according to his conception built up from a theoretical groundwork which is much more complicated than one which the laws of acoustics can provide. But this is precisely the aim of art for d'Alembert: to elaborate the whole theory of music in such a way that it depends on a few simple, verifiable physical laws, while recognizing the spontaneous creativity and whimsy of human artistry.

In this extract of a discussion about musical theory, d'Alembert brings into consideration his concept of universal human nature, the division of art into universal and relative elements, Rameau's rationalist theory of harmony, and the French baroque style of composition. All these elements are brought together to reinforce his view of the essential nature of harmony: it must be in agreement with observation of universal human experience, but at the same time it

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<sup>2</sup>It must be remembered that in 1777 the philosophe party dominated the French Academy, and d'Alembert was the acknowledged leader of the group.

must describe and codify the elusive quality of creativity. D'Alembert's faith in reason and the systematic ordering of knowledge does not carry with it a condemnation of creative genius; rather he believes that individual expression in art can be understood and described systematically, in order to produce theoretical principles.

## BIBLIOGRAPHY OF WORKS CONSULTED

### Works by d'Alembert

This section does not contain items in which letters by d'Alembert are presented along with extensive, significant editorial comment. These items are listed in the third section, under the commentator's name. Collections of the correspondence of other major figures, such as Lagrange or Voltaire, which appear in the second section, may contain letters by d'Alembert. Such cases are noted when they were consulted specifically for that purpose.

"Avertissement aux Géomètres, par M. d'Alembert." Mercure de France, June, 1765, pp. 154-158.

"Correspondance inédite de d'Alembert avec Cramer, Lesage, Clairaut, Turgot, Castillon, Béguelin, etc.," ed. Charles Henry. Bulletino di bibliografia e di storia delle scienze matematiche e fisiche, XVIII (1885), 507-570, 605-649.

"Discours Préliminaire de la nouvelle Edition des Elémens de Musique de M. d'Alembert." Mercure de France, Feb., 1762, pp. 117-145.

Einleitung zur Enzyklopädie von 1751, ed. Erich Kohler. Hamburg: Felix Meiner, 1955.

Essai d'une nouvelle théorie de la résistance des fluides. Paris: David, 1752. Reprint, Bruxelles: Culture et Civilisation, 1966.

Essai sur les éléments de philosophie, ed. Richard N. Schwab. Hildesheim: G. Olm, 1965.

Histoire des membres de l'Académie française morts depuis 1700 jusqu'en 1771, pour servir de suite aux Eloges imprimés et lus dans les séances publiques de cette Compagnie, par M. d'Alembert. 6 vols. Paris: Moutard, 1785-87.

"Lettre de M. d'Alembert, à l'auteur du Mercure." Mercure de France, Sept., 1757, pp. 109-120.

"Lettre de M. d'Alembert, à l'auteur du Mercure." Mercure de France, July, 1760, vol. I, pp. 121-122.

- "Lettre de M. d'Alembert, à l'Auteur du Mercure." Mercure de France, Sept., 1760, p. 106.
- "Lettre de M. d'Alembert, à l'Auteur du Mercure." Mercure de France, Jan., 1761, vol. II, p. 107.
- "Lettre de M. d'Alembert à Mlle Vigée." Journal Encyclopédique, 1775, vol. VII, part I, pp. 146-147.
- "Lettre de M. d'Alembert à M. Rameau." Mercure de France, Apr., 1761, vol. II, pp. 124-126.
- "Lettre de M. d'Alembert aux auteurs de ce Journal." Journal Encyclopédique, 1765, vol. VII, part I, pp. 130-131.
- "Lettre de M. d'Alembert aux Auteurs du Journal Encyclopédique." Journal Encyclopédique, 1761, vol. III, part I, pp. 118-122.
- "Lettre de M. d'Alembert aux Auteurs du Journal Encyclopédique, concernant quelques difficultés que présente le sujet du prix proposé au nom de l'Académie des Sciences." Journal Encyclopédique, 1764, vol. VI, part I, pp. 124-28.
- "Mémoire sur les principes de la mécanique," in Histoire de l'Académie royale des sciences: Année MDCCLXIX, pp. 278-286. Paris: Imprimerie Royale, 1772.
- Oeuvres de d'Alembert. 5 vols. Paris: Belin, 1821-22. Reprint: Genève: Slatkine, 1967.
- Oeuvres et correspondances inédites de d'Alembert, ed. Charles Henry. Paris: Perrin, 1887. Reprint, Genève: Slatkine, 1967.
- Oeuvres philosophiques, historiques et littéraires de d'Alembert. 18 vols. Paris: Bastien, 1805.
- Oeuvres posthumes de d'Alembert, ed. Charles Pougens. 2 vols. Paris: Pougens, 1799.
- Opuscules mathématiques. 8 vols. Paris: David, Briasson, Jombert; 1761-80.
- Preliminary Discourse to the Encyclopedia of Diderot, ed. and trans. Richard N. Schwab. Indianapolis, New York: Bobbs-Merrill, 1963.
- Recherches sur différens points importants du système du monde. 3 vols. Paris: David, 1754-56. Reprint, Bruxelles: Culture et Civilisation, 1966.
- Recherches sur la précession des équinoxes, et sur la nutation de l'axe de la terre, dans le système newtonien. Paris: David, 1749. Reprint, Bruxelles: Culture et Civilisation, 1967.

Réflexions sur la cause générale des vents. Paris: David, 1747.

Réflexions sur la musique en général, et sur la musique française en particulier. N.p., 1754.

This work is attributed to d'Alembert; see p. 153 of this study for a discussion of it.

"Réflexions sur la théorie de la résistance des fluides, lues dans l'Assemblée publique de l'Académie des Sciences." Mercur de France, Jan., 1752, vol. I, pp. 6-27.

"Réponse de M. d'Alembert à une Lettre imprimée de M. Rameau." Mercur de France, March, 1762, pp. 132-152.

Traité de dynamique. Paris: David, 1743. Reprint, Bruxelles: Culture et Civilisation, 1967.

Traité de dynamique, 2nd ed. Paris: David, 1758. Reprint, ed. T.L. Hankins, New York: Johnson Reprint Corporation, 1968.

Traité de l'équilibre et du mouvement des fluides. Paris: David, 1744. Reprint, Bruxelles: Culture et Civilisation, 1966.

#### Other Works Written Before 1800

This section lists items composed during the seventeenth and eighteenth centuries, whether or not a later edition was used.

Batteux, abbé Charles. Les beaux arts réduits à un même principe, new ed. Paris: Saillant & Nyon, Desaint; 1773. Reprint, Genève: Slatkine, 1969.

Boileau-Despréaux, Nicolas. Oeuvres complètes, ed. C.-H. Boudhors, 2nd ed. 7 vols. Paris: Belles Lettres, 1952.

Brosses, Charles de. Traité de la formation mécanique des langues et des principes physiques de l'étymologie. 2 vols. Paris: Saillant, Vincent, Desaint; 1765.

Chas, J. Esprit, maximes et principes de d'Alembert. Paris, Genève: Briand, 1789.

Clément, Pierre. Les cinq années littéraires. 2 vols. Berlin, 1755. Reprint, Genève: Slatkine, 1967.

- Condillac, Etienne Bonnot, abbé de. Oeuvres philosophiques de Condillac, ed. Georges Le Roy. 3 vols. Paris: Presses Universitaires de France, 1947-51.
- Court de Gébelin, Antoine. Le monde primitif, analysé et comparé avec le monde moderne. 9 vols. Paris: Court de Gébelin, Boudet, Valleyre, Duchesne, Saugrain, Ruault; 1773-84.
- Descartes, René. Oeuvres, eds. Charles Adam and Paul Tannery, 2nd ed. 13 vols. Paris: Vrin, 1956-57.
- Diderot, Denis. Lettre sur les sourds et muets à l'usage de ceux qui entendent et qui parlent, ed. Paul Hugo Meyer. Diderot Studies, VII (1965).
- \_\_\_\_\_. Le Neveu de Rameau, ed. Jean Fabre. Genève: Droz, 1963.
- \_\_\_\_\_. Oeuvres complètes de Diderot, eds. J. Assézat and Maurice Tourneux. 20 vols. Paris: Garnier, 1875-77.
- Dubos, abbé Jean-Baptiste. Réflexions critiques sur la poésie et sur la peinture. Paris: Pissot, 1770. Reprint, Genève: Slatkine, 1967.
- Du Marsais, César Chesneau. Logique et principes de grammaire. Paris: Briasson, Le Breton, Hérisson fils; 1769.
- \_\_\_\_\_. Véritables Principes de la grammaire, ou, Nouvelle Grammaire raisonnée pour apprendre la Langue Latine. N.p., [1729?].
- "Eloge de d'Alembert" (anonymous review of work by Joseph Dumas). Année littéraire, 1789, vol. II, pp. 289-326.
- Encyclopédie, ou Dictionnaire des arts, des sciences et des métiers, par une société de gens de lettres. 35 vols. Paris: Briasson, David, Le Breton, Durand; 1751-80. Reprint, Stuttgart: Friedrich Frommann, 1966-67.
- "Examen des réflexions de M. Dalembert sur la liberté de la Musique." Mercure de France, July, 1759, vol. II, pp. 73-103.
- Fontenelle. "Eloge de Newton," in Oeuvres complètes, ed. G.-B. Deping, I, 387-403. Paris, 1818. Reprint, Genève: Slatkine, 1968.
- Lagrange, J.-L. Oeuvres de Lagrange, eds. M.J.A. Serret and L. Lannan. 14 vols. Paris: Gauthier-Villars et Fils, 1867-92. Volume XIII contains the d'Alembert-Lagrange correspondence.
- La Harpe, Jean-François de. Correspondance littéraire. 7 vols. Paris: Migneret, 1801-07.

- \_\_\_\_\_. De la philosophie du XVIII<sup>e</sup> siècle. 2 vols. Paris, 1826.  
Reprint, Genève: Slatkine, 1970.
- \_\_\_\_\_. "Précis historique sur d'Alembert," in Oeuvres, IV,  
429-446. Paris, 1829. Reprint, Genève: Slatkine, 1968.
- Lancelot, and Arnauld. Grammaire générale et raisonnée de Port-Royal,  
ed. A. Bailly. Paris, 1846. Reprint, Genève: Slatkine, 1968.
- "Lettre à M. d'Alembert sur l'art de traduire." Mercure de France,  
Oct., 1759, vol. II, pp. 30-42; Nov., 1759, pp. 18-38.
- Locke, John. An Essay Concerning Human Understanding, ed. Alexander  
Campbell Fraser, 2nd ed. 2 vols. New York: Dover, 1959.
- Maupertuis, P.L. Moreau de. "Dissertation sur les différens moyens  
dont les hommes se sont servis pour exprimer leurs idées," in  
Oeuvres, III, 435-468. Lyon, 1768. Reprint, Hildesheim:  
G. Olm, 1965.
- Newton, Sir Isaac. Opticks, or a Treatise of the Reflections, Refrac-  
tions, Inflections & Colours of Light, eds. A. Einstein, Sir  
Edmund Whittaker, I. Bernard Cohen, Duane H.D. Roller. New York:  
Dover, 1952.
- Pope, Alexander. An Essay on Man, in The Poetical Works of Alexander  
Pope, ed. Robert Carruthers, I, 312-367. London: Bohn, 1858.
- Rameau, Jean-Philippe. Complete Theoretical Writings, ed. Erwin R.  
Jacobi. 5 vols. N.p.: American Institute of Musicology,  
1967-69.
- \_\_\_\_\_. "Lettre de M. Rameau à l'Auteur du Mercure." Mercure de  
France, May, 1752, pp. 75-77.
- \_\_\_\_\_. "Réponse de M. Rameau à la lettre de M. d'Alembert, qu'on  
vient de lire." Mercure de France, April, 1761, vol. II,  
pp. 127-129.
- Rousseau, Jean-Jacques. Essai sur l'origine des langues, ed. Charles  
Porset. Bordeaux: Guy Ducros, 1968.
- \_\_\_\_\_. Lettre sur la musique françoise, in [Oeuvres], XII, 251-323.  
Paris: Pourrat, 1838-39.
- \_\_\_\_\_. Oeuvres complètes, eds. Bernard Gagnebin and Marcel Raymond.  
vol. III. Paris: Pléiade, 1964.
- Sabatier, abbé Antoine [Sabatier de Castres]. Les trois siècles de  
notre littérature, ou Tableau de l'esprit de nos écrivains, depuis  
François I<sup>er</sup> jusqu'en 1772: par ordre alphabétique. 3 vols.  
Amsterdam, Paris: Gueffier, Dehansi; 1772.

Smith, Adam. Considerations Concerning the First Formation of Languages, and the Different Genius of Original and Compounded Languages, in Works, V, 1-48. London, 1811-12. Reprint, Aalen: Otto Zeller, 1963.

Turgot, Anne Robert Jacques. Oeuvres de Turgot, ed. Gustave Schelle. 5 vols. Paris: Félix Alcan, 1913-23.

Voltaire. Oeuvres complètes de Voltaire, ed. Louis Moland. 52 vols. Paris: Garnier, 1877-85.

\_\_\_\_\_. Voltaire's Correspondence, ed. Theodore Besterman. 107 vols. Geneva: Institut et Musée Voltaire, 1953-65.

Warburton, William, Bishop of Gloucester. The Divine Legation of Moses Demonstrated, 4th ed. 5 vols. London: A. Millar and J. and R. Tonson, 1765-66.

#### Works Written After 1800

Aarslef, H. "Leibniz on Locke on Language." American Philosophical Quarterly, I (1964), 165-188.

Ages, Arnold. "Voltaire, D'Alembert and the old Testament: a Study in the Manipulation of Scripture." Studi francesi, XI (1967), 86-89.

Alatri, Paolo. "La 'questione' d'Alembert." Studi francesi, IX (1965), 248-259.

"Alembert, Jean Le Rond d'," in Grove's Dictionary of Music and Musicians, 5th ed., I, 102.

Barber, W.H. Leibniz in France from Arnauld to Voltaire: A Study in French Reactions to Leibnizianism, 1670-1760. Oxford: Clarendon Press, 1955.

Barni, Jules R. Histoire des idées morales et politiques en France au XVIII<sup>e</sup> siècle. 2 vols. Paris: Germer-Baillière, 1865-67. Reprint, Genève: Slatkine, 1967.

Barthélemy, Maurice. "Essai sur la position de d'Alembert dans la Querelle des Bouffons." Recherches sur la musique française classique, VI (1966), 159-175.

Baudelaire, Charles. Oeuvres complètes, ed. Marcel Ruff. Paris: Seuil, 1968.



- Becker, Carl L. The Heavenly City of the Eighteenth-Century Philosophers. New Haven: Yale University Press, 1932.
- Bell, E.T. The Development of Mathematics. New York, London: McGraw-Hill, 1945.
- Bersot, Ernest. "Etudes sur la philosophie du XVIII<sup>e</sup> siècle. D'Alembert." La Liberté de penser, IV (1849), 199-225.
- Bertrand, Joseph. L'Académie des sciences et les académiciens de 1666 à 1793. Paris: Hetzel, 1869.
- \_\_\_\_\_. D'Alembert. Paris: Hachette, 1889.
- \_\_\_\_\_. "D'Alembert. Sa vie et ses travaux." Revue Anglo-Française, IV (1875-76), 361-367.
- Bloomfield, L. Language, 2nd ed. New York: Henry Holt, 1946.
- Boas, George. Review of The Philosophy of the Enlightenment, by Ernst Cassirer. Journal of Philosophy, XLIX (1952), 244-247.
- Boiteux, L.-A. "Le rôle de d'Alembert dans la querelle Rousseau-Hume." Annales de la Société Jean-Jacques Rousseau, XXXII (1950-52), 143-154.
- Bonnardet, E. "La mort et les funérailles de M<sup>r</sup> d'Alembert." Oratoire France, 1937, 98-106.
- Borgerhoff, E.B.O. The Freedom of French Classicism. Princeton: Princeton University Press, 1950.
- Brady, Patrick. "Rococo Style in French Literature." Studi francesi, X (1966), 428-437.
- Briggs, J. Morton, Jr. "D'Alembert: Philosophy and Mechanics in the Eighteenth Century." University of Colorado Studies. Series in History, III (1964), 38-56.
- Broglie, Louis de. "Un mathématicien, homme de lettres: d'Alembert," in L'Encyclopédie et le progrès des sciences et des techniques, pp. 1-9. Paris: Presses Universitaires de France, 1952.
- Brunel, Lucien. Les philosophes et l'Académie française au dix-huitième siècle. Paris, 1884. Reprint, Genève: Slatkine, 1967.
- Brunet, Pierre. L'introduction des théories de Newton en France au XVIII<sup>e</sup> siècle. Paris: Blanchard, 1931.
- \_\_\_\_\_. Les physiciens hollandais et la méthode expérimentale en France au XVIII<sup>e</sup> siècle. Paris: Blanchard, 1926.

- Brunot, Ferdinand. Histoire de la langue française des origines à nos jours, 2nd ed. 13 vols. Paris: Armand Colin, 1966-72.
- Burtt, Edwin Arthur. The Metaphysical Foundations of Modern Physical Science, 2nd ed. London: Routledge and Kegan Paul, 1932.
- Bury, J.B. The Idea of Progress. An Inquiry into its Origin and Growth, 2nd ed. New York: Dover, 1955.
- Butterfield, H. The Origins of Modern Science. London: G. Bell, 1949.
- Butts, Robert E. "Rationalism in Modern Science: d'Alembert and the 'esprit simpliste'." Bucknell Review, VIII (1958-59), 127-139.
- Cajori, Florian. A History of Mathematics. New York: MacMillan, 1938.
- Casini, Paolo. "D'Alembert epistemologo." Rivista critica di storia della filosofia, 1964, fasc. I (Jan.-March), 28-53.
- \_\_\_\_\_. "Le 'newtonianisme' au siècle des lumières. Recherches et perspectives." Dix-huitième siècle, I (1969), 139-159.
- \_\_\_\_\_. "Il problema d'Alembert." Rivista di filosofia, LXI (1970), 26-47.
- Cassirer, Ernst. The Philosophy of the Enlightenment, trans. F.C.A. Koelln and J.P. Pettegrove. Princeton: Princeton University Press, 1951.
- Chomsky, Noam. Cartesian Linguistics: A Chapter in the History of Rationalist Thought. New York, London: Harper & Row, 1966.
- Claparède, Edouard. "Rousseau et l'origine du langage." Annales de la Société Jean-Jacques Rousseau, XXIV (1935), 95-119.
- Comte, Auguste. Système de politique positive. 4 vols. Paris: Mathias, Carilian-Goeury and Victor Dalmont; 1851-54.
- Costabel, Pierre. "La mécanique dans l'Encyclopédie," in L'Encyclopédie et le progrès des sciences et des techniques, pp. 64-90. Paris: Presses Universitaires de France, 1952.
- Cousin d'Avallon, C.-Y. D'Alembertiana, ou Recueil d'Anecdotes, Bons mots, plaisanteries, Maximes, Réflexions, Sentences et Pensées de d'Alembert, suivi de Notes et d'Eclaircissemens relatifs à ce Philosophe. Paris: Davi and Locardi, 1813.
- Granston, Maurice. John Locke, a biography. London, New York, Toronto: Longmans, Green and Co., 1957.

- Dieckmann, Herbert. "An Interpretation of the Eighteenth Century." Modern Language Quarterly, XV (1954), 295-311.
- \_\_\_\_\_. "The Concept of Knowledge in the Encyclopédie," in Essays in Comparative Literature, by H. Dieckmann, H. Levin, and H. Motekat, pp. 73-107. St. Louis, Missouri, 1961.
- \_\_\_\_\_. "Diderot's Conception of Genius." Journal of the History of Ideas, II (1941), 151-182.
- \_\_\_\_\_. "L'Encyclopédie et le fonds Vandeuil." Revue d'histoire littéraire de la France, LI (1951), 318-332.
- Dugas, René. A History of Mechanics, trans. J.R. Maddox. London: Routledge and Kegan Paul, 1957.
- Evans, W. Hugo. "A Practical Application of d'Alembert's and Diderot's Classification of Human Knowledge." Modern Language Review, XXXVI (1941), 460-466.
- Fletcher, Dennis J. "Bolingbroke and the Diffusion of Newtonianism in France." Studies on Voltaire and the Eighteenth Century, LIII (1967), 29-46.
- Folkierski, Wladyslaw. Entre le classicisme et le romantisme, étude sur l'esthétique et les esthéticiens du XVIII<sup>e</sup> siècle, 2nd ed. Paris: Champion, 1969.
- Foucault, Michel. Les mots et les choses. Paris: Gallimard, 1966.
- Fournier, Edouard. "Les bouffonneries de d'Alembert." Revue des provinces, XI (1866), 148-149.
- Fubini, Enrico. "Musica e linguaggio negli Enciclopedisti." Rivista di filosofia, LX (1969), 49-71.
- Gassier, Emile. Les Cinq cents immortels. Histoire de l'Académie française, 1634-1906. Paris: Jouve, 1906.
- Gay, Peter. The Enlightenment: An Interpretation. 2 vols. New York: Alfred A. Knopf, 1967-69.
- Gilson, Etienne. Etudes sur le rôle de la pensée médiévale dans la formation du système cartésien. Paris: Vrin, 1951.
- Gordon, Douglas H., and Norman L. Torrey. The Censoring of Diderot's Encyclopédie and the Re-established Text. New York: Columbia University Press, 1947.
- Goulemot, Jean-Marie, and Michel Launay. Le siècle des Lumières. Paris: Seuil, 1968.

- Grimley, Ronald. "D'Alembert and Hume." Revue de littérature comparée, XXXV (1961), 583-595.
- \_\_\_\_\_. "D'Alembert and J.D. Michaelis. Unpublished Correspondence." Revue de littérature comparée, XXXIII (1959), 258-261.
- \_\_\_\_\_. "D'Alembert at Potsdam (1763): An English Comment." Revue de littérature comparée, XXXV (1961), 114-115.
- \_\_\_\_\_. Jean d'Alembert. Oxford: Clarendon Press, 1963.
- \_\_\_\_\_. "Jean-Jacques Rousseau and the Problem of 'Original' Language," in The Age of Enlightenment: Studies presented to Theodore Besterman, eds. W.H. Barber et al., pp. 275-286. Edinburgh, London: Oliver and Boyd, 1967.
- \_\_\_\_\_. "Mauvertuis, Turgot and Maine de Biran on the origin of language." Studies on Voltaire and the Eighteenth Century, LXII (1968), 285-307.
- \_\_\_\_\_. "Quelques lettres inédites de Jean d'Alembert." Revue d'histoire littéraire de la France, LXII (1962), 74-78.
- \_\_\_\_\_. "Some aspects of 'nature' and 'language' in the French Enlightenment." Studies on Voltaire and the Eighteenth Century, LVI (1967), 659-677.
- Gunderson, K. "Descartes, La Mettrie, Language and Machines." Philosophy, XXXIX (1964), 193-222.
- Hankins, Thomas L. "Eighteenth-Century Attempts to Resolve the Vis viva Controversy." Isis, LVI (1965), 281-297.
- \_\_\_\_\_. "The Influence of Malebranche on the Science of Mechanics during the Eighteenth Century." Journal of the History of Ideas, XXVIII (1967), 193-210.
- \_\_\_\_\_. Jean d'Alembert, Science and the Enlightenment. Oxford: Clarendon Press, 1970.
- Harnois, Guy. Les théories du langage en France de 1660 à 1821. Etudes françaises, XVII (1929), 1-95.
- Hawkins, Richard Laurin. "Unpublished French Letters of the Eighteenth Century." Romanic Review, XXI (1930), 1-14, 128-131, 209-217, 308-314.
- Hayton, Hope Haskell. "A Study of the Origin, Content, and Literary Significance of the Eloges Académiques of Jean Le Rond d'Alembert." Diss., University of Southern California, 1959. Abstract in Dissertation Abstracts, XX (1960), 1787.

- Hazard, Paul. La crise de la conscience européenne (1680-1715). 3 vols. Paris: Boivin, 1935.
- \_\_\_\_\_. La pensée européenne au XVIII<sup>e</sup> siècle de Montesquieu à Lessing. 2 vols. Paris: Boivin, 1946.
- Hubert, René. Les sciences sociales dans l'Encyclopédie. Paris: Félix Alcan, 1923.
- Hughes, Peter. "Language, History & Vision: An Approach to 18th-Century Literature," in The Varied Pattern: Studies in the 18th Century, vol. I of the Publications of the McMaster University Association for 18th-Century Studies, eds. Peter Hughes and David Williams, pp. 77-96. Toronto: A.M. Hakkert, 1971.
- Hunt, H.J. "Logic and Linguistics: Diderot as Grammairien-Philosophe." Modern Language Review, XXXIII (1938), 215-233.
- Iltis, Carolyn. "D'Alembert and the vis viva controversy." Studies in History and Philosophy of Science, I (1970), 135-144.
- Jespersen, Otto. Language. New York: Henry Holt, 1922.
- \_\_\_\_\_. The Philosophy of Grammar. London: George Allen & Unwin; New York: Henry Holt; 1924.
- Josephs, Herbert. Diderot's Dialogue of Language and Gesture: Le Neveu de Rameau. Columbus: Ohio State University Press, 1969.
- Julliard, Pierre. Philosophies of Language in Eighteenth-Century France. The Hague, Paris: Mouton, 1970.
- Kaye, F.B. "Mandeville on the origin of language." Modern Language Notes, XXXIX (1924), 136-142.
- Kiernan, Colm. "Rousseau and Music in the French Enlightenment." French Studies, XXVI (1972), 156-165.
- \_\_\_\_\_. Science and the Enlightenment in Eighteenth-Century France. Studies on Voltaire and the Eighteenth Century, LIX (1968).
- Knight, Isabel F. The Geometric Spirit: The Abbé de Condillac and the French Enlightenment. New Haven, London: Yale University Press, 1968.
- Kuehner, Paul. Theories on the Origin and Formation of Language in the Eighteenth Century in France. Diss., University of Pennsylvania. Philadelphia, 1944.
- Kukenheim, Louis. Esquisse historique de la linguistique française et de ses rapports avec la linguistique générale. Leyde: Universitaire Pers, 1966.

- Lang, Paul Henry. Music in Western Civilization. New York: Norton, 1941.
- Lanson, Gustave. Etudes d'histoire littéraire. Paris: Librairie Ancienne Honoré Champion, 1929.
- \_\_\_\_\_. Histoire de la littérature française. Paris: Hachette, 1912.
- Laufer, Roger. Style rococo, style des "Lumières." Paris: Corti, 1963.
- Leigh, R.A. "D'Alembert's Copy of Rousseau's First Discours." The Library, XXII (1967), 243-245.
- Lemoine, L. [M. Barroux] "D'Alembert," in Dictionnaire de biographie française, I, 1397-1416. Paris: Letouzey et Ané, 1933.
- Le Roy, Georges. La psychologie de Condillac. Paris: Boivin, 1937.
- Leroy, Maurice. Main Trends in Modern Linguistics, trans. Glanville Price. Berkeley, Los Angeles: University of California Press, 1967.
- Lévi-Strauss, Claude. Le totémisme aujourd'hui. Paris: Presses Universitaires de France, 1965.
- Ley, Hermann. "Sur l'importance de d'Alembert." Pensée, 1952, Sept.-Oct., pp. 49-57; 1953, Jan.-Feb., pp. 39-50.
- Lough, John. Essays on the Encyclopédie of Diderot and d'Alembert. London: Oxford University Press, 1968.
- \_\_\_\_\_. "Mme Geoffrin and the Encyclopédie." Modern Language Review, LVIII (1963), 219-222.
- Lovejoy, Arthur O. Essays in the History of Ideas. Baltimore: Johns Hopkins Press, 1948.
- \_\_\_\_\_. The Great Chain of Being. Cambridge, Mass.: Harvard University Press, 1936.
- Mach Ernst. The Science of Mechanics, trans. Thomas J. McCormack. Chicago: Open Court, 1919.
- May, Gita. Diderot et Baudelaire, critiques d'art, 2nd ed. Genève: Droz, 1967.
- Mayer, Jean. "D'Alembert et l'Académie des Sciences," in Literature and Science: Proceedings of the Sixth Triennial Congress, Oxford, 1954 (of the International Federation for Modern Languages and Literatures), pp. 202-205. Oxford: Blackwell, 1955.

- \_\_\_\_\_. Diderot homme de science. Rennes: Imprimerie Bretonne, 1959.
- McRae, Robert. The Problem of the Unity of the Sciences: Bacon to Kant. Toronto: University of Toronto Press, 1961.
- Michaut, Dr. "D'Alembert a-t-il fait des études médicales?" La Chronique médicale, IX (1902), 82-84.
- Miller, John Richardson. Boileau en France au dix-huitième siècle. Baltimore: Johns Hopkins Press; London: Oxford University Press; Paris: Belles Lettres; 1942.
- Mornet, Daniel. "Les enseignements des bibliothèques privées (1750-80)." Revue d'histoire littéraire de la France, XVII (1910), 449-496.
- \_\_\_\_\_. La pensée française au XVIII<sup>e</sup> siècle. Paris: Armand Colin, 1926.
- Mossner, E.C. The Life of David Hume. Edinburgh: Nelson, 1954.
- Mounin, Georges. Histoire de la linguistique des origines au XX<sup>e</sup> siècle. Paris: Presses Universitaires de France, 1967.
- Muller, Maurice. Essai sur la philosophie de Jean d'Alembert. Paris: Payot, 1926.
- Müller, Robert. Abstract of D'Alemberts Aesthetik (diss., Berlin, 1924), in Jahrbuch der Dissertationen der Philosophischen Fakultät der Friedrich-Wilhelms-Universität zu Berlin, 1923-24, 454-460.
- Nicolini, Fausto. "Lettere inedite del d'Alembert, del maresciallo di Brissac, e del marchese di Croismare all abate Galiani." Revue de littérature comparée, X (1930), 747-759.
- Niklaus, Robert. A Literary History of France. The Eighteenth Century 1715-1789. London: Ernest Benn; New York: Barnes & Noble; 1970.
- Oliver, Alfred Richard. The Encyclopedists as Critics of Music, 2nd ed. N.p.: AMS Press, 1966.
- Page, Alex. "The Origin of Language and Eighteenth-Century English Criticism." The Journal of English and Germanic Philology, LXXI (1972), 12-21.
- Pappas, John Nicholas. Berthier's Journal de Trévoux and the Philosophes. Studies on Voltaire and the Eighteenth Century, III (1957).

- \_\_\_\_\_. "D'Alembert et la querelle des bouffons d'après des documents inédits." Revue d'histoire littéraire de la France, LXV (1965), 479-484.
- \_\_\_\_\_. "D'Alembert et Madame Corneille." Revue des sciences humaines, 1962, 39-47.
- \_\_\_\_\_. "Diderot, D'Alembert et l'Encyclopédie." Diderot Studies, IV (1963), 191-208.
- \_\_\_\_\_. "L'Esprit de finesse contre l'esprit de géométrie: un débat entre Diderot et Alembert." Studies on Voltaire and the Eighteenth Century, LXXXIX (1972), 1229-53.
- \_\_\_\_\_. "La Poétique de d'Alembert," in Beiträge zur Französischen Aufklärung und zur Spanischen Literatur. Festgabe für Werner Krauss zum 70. Geburtstag, ed. Werner Bahner, pp. 257-270. Berlin: Akademie Verlag, 1971.
- \_\_\_\_\_. "Rousseau and d'Alembert." Publications of the Modern Language Association of America, LXXV (1960), 46-60.
- \_\_\_\_\_. Voltaire and d'Alembert. Bloomington: Indiana University Press, 1962.
- Proust, Jacques. Diderot et l'Encyclopédie. Paris: Armand Colin, 1962.
- \_\_\_\_\_. "Diderot et les problèmes du langage." Romanische Forschungen, LXXIX (1967), 1-27.
- \_\_\_\_\_. "Travaux soviétiques récents sur le XVIII<sup>e</sup> siècle français." Revue d'histoire littéraire de la France, LXI (1961), 589-592.
- Rezler, Marta. "The d'Alembert Question: A Study in Problematics." Diderot Studies, VI (1964), 323-337.
- \_\_\_\_\_. "The Voltaire-d'Alembert correspondence: an historical and bibliographical re-appraisal." Studies on Voltaire and the Eighteenth Century, XX (1962), 9-139.
- Rice, Howard C., Jr. "A D'Alembert Letter Re-examined." Princeton University Library Chronicle, XVIII (1956-57), 189-193.
- Robins, R.H. A Short History of Linguistics. London: Longmans, Green and Co., 1967.
- Roger, Jacques. Les sciences de la vie dans la pensée française du XVIII<sup>e</sup> siècle. Paris: Armand Colin, 1963.



- Rosenfeld, L. "Condillac's Influence on French Scientific Thought," in The Triumph of Culture: 18th Century Perspectives, vol. II of the Publications of the McMaster University Association for 18th-Century Studies, eds. Paul Fritz and David Williams, pp. 157-168. Toronto: A.M. Hakkert, 1972.
- Roth, Leon. Descartes' Discourse on Method. Oxford: Clarendon Press, 1937.
- Sahlin, Gunvor. César Chesneau Du Marsais et son rôle dans l'évolution de la Grammaire générale. Paris: Presses Universitaires de France, 1928.
- Sainte-Beuve, G.-A. Causeries du lundi, 7th ed., II, 121-142. Paris: Garnier, n.d.
- Sautebin, Hippolyte. Un linguiste français du dix-huitième siècle, le président de Brosses. Berne, 1899. Reprint, Genève: Slatkine, 1971.
- Schwab, Richard N. "The Diderot Problem, the Starred Articles and the Question of Attribution in the Encyclopédie." Eighteenth-Century Studies, II (1969), 240-285, 370-438.
- Spurlin, Paul M. "Diderot, Alembert and the Encyclopédie in the United States, 1760-1800." Studies on Voltaire and the Eighteenth Century, LVII (1967), 1417-33.
- Stackelberg, Jürgen von. "Rousseau, d'Alembert et Diderot traducteurs de Tacite." Studi francesi, II (1958), 395-407.
- Struik, Dirk J. A Concise History of Mathematics, 2nd ed. New York: Dover, 1967.
- Swadesh, Morris. The Origin and Diversification of Language, ed. Joel Sherzer. Chicago, New York: Aldine-Atherton, 1971.
- Tagliavini, Carlo. Panorama di storia della linguistica. Bologna: Patron, 1963.
- Trevor-Roper, H.R. "The Historical Philosophy of the Enlightenment." Studies on Voltaire and the Eighteenth Century, XXVII (1963), 1667-87.
- Trousson, Raymond. "Jean-Jacques Rousseau traducteur de Tacite." Studi francesi, 1970, fasc. XLI, pp. 231-243.
- Velluz, Léon. Maupertuis. Paris: Hachette, 1969.
- Venturi, Franco. Le Origini dell'Encyclopedia, 2nd ed. Torino: Einaudi, 1963.

- Vernière, Paul. Spinoza et la pensée française avant la Révolution. 2 vols. Paris: Presses Universitaires de France, 1954.
- Wachs, Morris. "A Study of d'Alembert's Histoire des membres de l'Académie française." Diss., University of Wisconsin, 1958. Abstract in Dissertation Abstracts, XIX (1959), 1764.
- Wade, Ira Owen. The Clandestine Organization and Diffusion of Philosophic Ideas in France from 1700 to 1750, 2nd ed. New York: Octagon, 1967.
- Wasserman, Earl R., ed. Aspects of the Eighteenth Century. Baltimore: Johns Hopkins Press, 1965.
- White, R.J. The Anti-Philosophers: A Study of the Philosophes in Eighteenth-Century France. London, etc.: MacMillan, 1970.
- Wilson, Arthur M. Diderot, the testing years, 1713-1759. New York: Oxford University Press, 1957.
- Wolf, A. A History of Science, Technology, and Philosophy in the Eighteenth Century. New York: MacMillan, 1939.