course of experiments, at the general idea of space. It remains to know whether this general idea of space is exactly the same as the general idea of book, and whether the word space signifies nothing more than the word book. Let us consult the human mind, and the truth of interior facts. It is an incontestable fact that, when you speak of book in general, you do not add to the idea of book that of real existence. On the contrary, I ask whether, when you speak of space in general, you add or do not add to this idea belief in the reality of space? I ask whether it is the same with space as with book; whether you believe, for example, that there is out of you only particular spaces, that there is not a universal space capable of embracing all possible bodies, a space one and continuous, of which different particular spaces are only arbitrary portions and measures? It is certain that when you speak of space, you have the conviction that there is something beyond you which is space, as, when you speak of time, you have the conviction that there is something out of you which is time, even when you know neither the nature of time, nor that of space. Different times, different spaces, are not the constituent elements of time and space; time and space are for you not merely the collection of those different times and those different spaces; but you believe that space and time exist by themselves, and that it is not two or three spaces, two or three centuries which constitute space and time; for every thing that is borrowed from experience, whether in regard to space, or in regard to time, is finite, and the character of space and time is for you that of being infinite, of being without commencement and without end: time is resolved into eternity, as space is resolved into immensity. In a word, an invincible belief of the reality of time and space is attached for you to the general idea of time and space. This is what the human mind believes; this is what is attested by consciousness. Here the phenomenon is precisely the inverse of that which I just before designated to you; and whilst the general idea of book does not suppose in the human mind a conviction of the existence of any thing which

is book, here, on the contrary, to the general idea of time and space is attached the invincible conviction of the reality of something which is space and time. Without doubt, the word space is a pure word like that of book; but this word bears with it the supposition of a thing, of something real in itself: herein is the root and reason of realism.

Nominalism thinks that general ideas are only words; realism thinks that general ideas suppose something real: on both sides there is equal truth, equal error. Yes, without doubt, there is a large number of general ideas which are purely collective, and which express nothing else than the common qualities of objects, without implying any existence; and in this sense nominalism is right. But it is also certain that there are general ideas which imply the supposition of the real existence of their object: realism rests upon this basis, which is incontestable. Now behold the error of nominalism and realism! The force of realism resides in general ideas which invincibly imply the exterior existence of their objects; they are, you know, general, universal, necessary ideas; it starts thence; but in the circle of these superior ideas it attracts and envelops ideas which are purely collective and relative, born of abstraction and language. That which it had a right to affirm of the former, it affirms of the latter. It was right upon one point; it claims an absolute right: therein it is wrong. On its side, nominalism, because it evidently demonstrates that there are many general ideas which are only collective, relative ideas, and pure words, hence concludes that all general ideas are nothing but general, collective, and relative ideas, pure signs. The one converts things into words, the other converts words into things. Both are right in the starting point; both err in the conclusion by their excessive and absolute pretensions. In general, the sensualistic school is nominalistic, and the idealistic is realistic. Once more, on both sides, as it always is with the incomplete and the exclusive, there is a mixture of truth and error.*

* On the difference of general collective ideas, and general necessary ideas, see First Series, Vol. 2, Lectures 2–4, p. 55; and on realism, nominalism,

IV. I conclude by designating to you another proposition, or rather another pretension of Locke, which it is important to confine within just limits. Everywhere Locke attributes to words (Book III. Chap. II. § 4; Book IV. *passim*) the greatest part of our errors; and if you expound the master by the pupils, you will find in all the writers of the school of Locke that all disputes are disputes of words; that science is nothing but a language, and consequently that a well-constructed science is a well-constructed language. I declare my opposition to the exaggerations of these assertions.* No doubt words have a great influence; no doubt they have much to do with our errors, and we should strive to make the best language possible. Who questions it? But the question is to know whether every error is derived from language, and whether science is merely a well-constructed language. No; the causes of our errors are very different; they are both more extended and more profound. Levity, presumption, indolence, precipitation, pride, a multitude of moral causes influence our judgments. The vices of language may be added to natural causes and aggravate them, but they do not constitute them. If you look more closely, you will see that the greater part of disputes, which seem at first disputes of words, are at bottom disputes of things. Humanity is too serious to become excited and often shed its best blood, for the sake of words. Wars do not turn upon verbal disputes: I say as much of other quarrels, of theological quarrels, and of scientific quarrels, the profundity and importance of which are misconceived when they are resolved into pure logomachies. Assuredly every science

and conceptualism, First Series, Vol. 4, Lecture 21, p. 457–463, and the *Introduction to the unpublished Works* of Abelard.

* First Series, Vol. 3, Lecture 1, p. 63. "In order that this should be true, it would be necessary that our thought might take place without the aid of language, which is not the case. I will give but one example among a thousand. Is it by the aid of the word *me* or of the word *existence* that I feel that I exist? Have I here been from the word to the thing? The very supposition is absurd. Consciousness directly perceives its phenomena by the virtue which is in it, and not by that of words; words powerfully aid it, they do not constitute it."

should seek a well-constructed language; but to suppose that there are well-constructed sciences because there are well-constructed languages, is to take the effect for the cause. The contrary is true: sciences have well-constructed languages when they are themselves well constructed. The mathematics have a well-constructed language. Why? Because in mathematics the ideas are perfectly determined; the simplicity, the rigor, and the precision of ideas have produced rigor, precision, and simplicity of signs. Precise ideas cannot be expressed in confused language; and if in the infancy of a language it were so for a while, soon the precision, the rigor, and the fixedness of the ideas would dissipate the vagueness and the obscurity of the language. The excellence of physical and chemical sciences evidently comes from well-made experiments. Facts having been observed and described with fidelity, reason has been able to apply itself to these facts with certainty, and to deduce from them legitimate consequences and applications. Hence has sprung, and should have sprung, a good system of signs. Make the contrary supposition; suppose badly made experiments: the more strict the reasoning, founded upon these false data, shall be, the more errors will it draw from them, the greater reach and extent will it communicate to the errors. Suppose that the theories which result from these imperfect and vicious experiments were represented by the most simple, the most analogous, the best determined signs; of what importance will the goodness of the signs be, if that which is concealed under this excellent language is a chimera or an error? Take medicine. The complaint is made that this science has advanced so little. What do you think must be done to bring it up from the regions of hypothesis, and to elevate it to the rank of a science? Do you think that at first you could, by a well-constructed language, reform physiology and medicine? Or do you not think that the true method is experiment, and with experiment the severe employment of reasoning? A good system of signs would of itself follow; it would not come before, or it would uselessly come. It is the same in

philosophy. It has been unceasingly repeated that the structure of the human mind is entire in that of language, and that philosophy would be finished the day in which a philosophical language should be achieved; and starting thence an endeavor has been made to arrange a certain philosophical language more or less clear, easy, elegant, and it has been believed that philosophy was achieved. It was not; it was far from being achieved. This prejudice has even retarded it, by separating experiment from it. Philosophical science, like every science of observation and reasoning, lives by well-made observation and strict reasonings. There, and not elsewhere, is the whole future of philosophy.

LECTURE XXI.

ESSAY, FOURTH BOOK. THEORY OF REPRESENTATIVE IDEAS.*

Examination of the Fourth Book of the *Essay*, in regard to knowledge. That knowledge, according to Locke, depends, 1st, on ideas; 2d, on ideas conformed to their object.—That the conformity or nonconformity of ideas with their objects, as the foundation of the true or of the false in knowledge, is not a simple metaphor in Locke, but a veritable theory.—Examination of the theory of representative ideas, 1st, in relation to the exterior world, to secondary qualities, to primary qualities, to the *substratum* of these qualities, to space, to time, etc.; 2d, in relation to the spiritual world.—Appeal to revelation. Paralogism of Locke.

Being in possession of all the ideas which are in the human understanding, their origin, their generation, their mechanism, and their characters; being in possession of the signs by which they are expressed, manifested, and developed, it concerns us to see what man does with these ideas, what knowledge he derives from them, what is the extent of this knowledge, and what are its limits. Such is the subject of the fourth book of the *Essay on the Human Understanding:* it treats of knowledge, that is, not simply of ideas taken in themselves, but in relation to their objects, in relation to other beings; for knowledge goes thus far; it attains to God, to bodies, and to ourselves. Now here, at the outset, is presented a prejudicial question. Knowledge reaches as far as beings, the fact is incontestable; but how does this fact take place? Having set out from ideas which are in it, how does the understanding attain to beings which are without it? What bridge is there between the faculty of knowing which is within us, and the objects of knowledge which are without us? When we shall have arrived on the other shore, we shall see what

* On the theory of representative ideas, see 1st Series, Vol. 1, Lecture 8, pp. 36–42; Lecture 10, p. 71, etc.; Vol. 3, Lecture 1, p. 63; especially Vol. 4, Lecture 20, pp. 356–370; Lecture 21, pp. 417–431.