to develop the properties of simple essences, whereas problems concern only events and affections which show evidence of a deterioration or projection of essences in the imagination. As a result, however, the genetic point of view is forcibly relegated to an inferior rank: proof is given that something cannot not be rather than that it is and why it is (hence the frequency in Euclid of negative, indirect and *reductio* arguments, which serve to keep geometry under the domination of the principle of identity and prevent it from becoming a geometry of sufficient reason). Nor do the essential aspects of the situation change with the shift to an algebraic and analytic point of view. Problems are now traced from algebraic equations and evaluated according to the possibility of carrying out a series of operations on the coefficients of the equation which provide the roots. However, just as in geometry we imagine the problem solved, so in algebra we operate upon unknown quantities as if they were known: this is how we pursue the hard work of reducing problems to the form of propositions capable of serving as cases of solution. We see this clearly in Descartes. The Cartesian method (the search for the clear and distinct) is a method for solving supposedly given problems, not a method of invention appropriate to the constitution of problems or the understanding of questions. The rules concerning problems and questions have only an expressly secondary and subordinate role. While combating the Aristotelian dialectic, Descartes has nevertheless a decisive point in common with it: the calculus of problems and questions remains inferred from a calculus of supposedly prior "simple propositions", once again the postulate of the dogmatic image.[21]

The variations succeed one another, but all within the same perspective. What do the empiricists do but invent a new form of possibility: probability or the physical possibility of finding a solution? And Kant himself? More than anyone, however, Kant wanted to apply the test of truth and falsehood to problems and questions: he even defined Critique in these terms. His profound theory of Ideas as problematising and problematic allowed him to rediscover the real source of the dialectic, and even to introduce problems into the geometrical exposition of Practical Reason. However, because the Kantian critique remains dominated by common sense or the dogmatic image, Kant still defines the truth of a problem in terms of the possibility of its finding a solution: this time it is a question of a transcendental form of possibility, in accordance with a legitimate use of the faculties as this is determined in each case by this or that organisation of common sense (to which the problem corresponds). We always find the

two aspects of the illusion: the natural illusion which involves tracing problems from supposedly pre-existent propositions, logical opinions, geometrical theorems, algebraic equations, physical hypotheses or transcendental judgements; and the philosophical illusion which involves evaluating problems according to their "solvability"—in other words, according to the extrinsic and variable form of the possibility of their finding a solution. It is then fatal that the ground should itself be no more than a simple external conditioning. A strange leap on the spot or vicious circle by which philosophy, claiming to extend the truth of solutions to problems themselves but remaining imprisoned by the dogmatic image, refers the truth of problems to the possibility of their solution. What is missed is the internal character of the problem as such, the imperative internal element which decides in the first place its truth or falsity and measures its intrinsic genetic power: that is, the very object of the dialectic or combinatory, the "differential". Problems are tests and selections. What is essential is that there occurs at the heart of problems a genesis of truth, a production of the true in thought. Problems are the differential elements in thought, the genetic elements in the true. We can therefore substitute for the simple point of view of conditioning a point of view of effective genesis. The true and the false do not suffer the indifference of the conditioned with regard to its condition, nor does the condition remain indifferent with regard to what it renders possible. The only way to take talk of "true and false problems" seriously is in terms of a production of the true and the false by means of problems, and in proportion to their sense. To do so, it is sufficient to renounce copying problems from possible propositions, and defining the truth of problems in terms of the possibility of their finding a solution. On the contrary, "solvability" must depend upon an internal characteristic: it must be determined by the conditions of the problem, engendered in and by the problem along with the real solutions. Without this reversal, the famous Copernican Revolution amounts to nothing. Moreover, there is no revolution so long as we remain tied to Euclidean geometry: we must move to a geometry of sufficient reason, a Riemannian-type differential geometry which tends to give rise to discontinuity on the basis of continuity, or to ground solutions in the conditions of the problems.

Not only is sense ideal, but problems are Ideas themselves. There is always a difference in kind between problems and propositions, an essential hiatus. A proposition by itself is particular, and represents a determinate *response*. A series of propositions can be distributed in such a

way that the responses they represent constitute a general *solution* (as in the case of the values of an algebraic equation). But precisely, propositions, whether general or particular, find their sense only in the subjacent problem which inspires them. Only the Idea or problem is universal. It is not the solution which lends its generality to the problem, but the problem which lends its universality to the solution. It is never enough to solve a problem with the aid of a series of simple cases playing the role of analytic elements: the conditions under which the problem acquires a maximum of comprehension and extension must be determined, conditions capable of communicating to a given case of solution the ideal continuity appropriate to it. Even for a problem which has only a single case of solution, the proposition which designates this case would acquire its sense only within a complex capable of comprehending imaginary situations and integrating an ideal of continuity. To solve a problem is always to give rise to discontinuities on the basis of a continuity which functions as Idea. Once we "forget" the problem, we have before us no more than an abstract general solution, and since there is no longer anything to support that generality, there is nothing to prevent the solution from fragmenting into the particular propositions which constitute its cases. Once separated from the problem, the propositions fall back into the status of particular propositions whose sole value is designatory. Consciousness then attempts to reconstitute the problem, but by way of the neutralised double of particular propositions (interrogations, doubts, likelihoods, hypotheses) and the empty form of general propositions (equations, theorems, theories . . .).[22] So begins the double confusion which assimilates problems to the series of *hypotheticals* and subordinates them to the series of *categories*. The nature of the universal is lost, but with it equally the nature of the singular, for the problem or the Idea is a concrete singularity no less than a true universal. Corresponding to the relations which constitute the universality of the problem is the distribution of singular points and distinctive points which determine the conditions of the problem. Proclus, even while maintaining the primacy of theorems over problems, rigorously defined the conditions of the problem in terms of an order of events and affections.[23] Leibniz, too, clearly stated what separates problems and propositions: all kinds of events, "the how and the circumstances", from which propositions draw their sense. These events, however, are ideal events, more profound than and different in nature from the real events which they determine in the order of solutions. Underneath the large noisy events lie the small events of silence, just as underneath the natural

light there are the little glimmers of the Idea. Singularity is beyond particular propositions no less than universality is beyond general propositions. Problematic Ideas are not simple essences, but multiplicities or complexes of relations and corresponding singularities. From the point of view of thought, the problematic distinction between the ordinary and the singular, and the nonsenses which result from a bad distribution among the conditions of the problem, are undoubtedly more important than the hypothetical or categorical duality of truth and falsehood along with the "errors" which only arise from their confusion in cases of solution.

A problem does not exist, apart from its solutions. Far from disappearing in this overlay, however, it insists and persists in these solutions. A problem is determined at the same time as it is solved, but its determination is not the same as its solution: the two elements differ in kind, the determination amounting to the genesis of the concomitant solution. (In this manner the distribution of singularities belongs entirely to the conditions of the problem, while their specification already refers to solutions constructed under these conditions.) The problem is at once both transcendent and immanent in relation to its solutions. Transcendent, because it consists in a system of ideal liaisons or differential relations between genetic elements. Immanent, because these liaisons or relations are incarnated in the actual relations which do not resemble them and are defined by the field of solution. Nowhere better than in the admirable work of Albert Lautman has it been shown how problems are first Platonic Ideas or ideal liaisons between dialectical notions, relative to "eventual situations of the existent"; but also how they are realised within the real relations constitutive of the desired solution within a *mathematical, physical* or other field. It is in this sense, according to Lautman, that science always participates in a dialectic which points beyond it—in other words, in a meta-mathematical and extra-propositional power—even though the liaisons of this dialectic are incarnated only in effective scientific propositions and theories.[24] Problems are always dialectical. This is why, whenever the dialectic "forgets" its intimate relation with Ideas in the form of problems, whenever it is content to trace problems from propositions, it loses its true power and falls under the sway of the power of the negative, necessarily substituting for the ideal objecticity of the *problematic* a simple confrontation between opposing, contrary or contradictory, propositions. This long perversion begins with the dialectic itself, and attains its extreme form in Hegelianism. If it is true, however, that it is problems which are dialectical in principle, and their solutions which are scientific, we must distinguish

completely between the following: the problem as transcendental instance; the symbolic field in which the immanent movement of the problem expresses its conditions; the field of scientific solvability in which the problem is incarnated, and in terms of which the preceding symbolism is defined. The relation between these elements will be specifiable by only a general theory of problems and the corresponding ideal synthesis.

Problems and their symbolic fields stand in a relationship with signs. It is the signs which "cause problems" and are developed in a symbolic field. The paradoxical functioning of the faculties—including, in the first instance, sensibility with respect to signs—thus refers to the Ideas which run throughout all the faculties and awaken them each in turn. Conversely, the Idea which itself offers sense to language refers each case to the paradoxical functioning of the faculty. The exploration of Ideas and the elevation of each faculty to its transcendent exercise amounts to the same thing. These are two aspects of an essential apprenticeship or process of *learning*. For, on the one hand, an apprentice is someone who constitutes and occupies practical or speculative problems as such. Learning is the appropriate name for the subjective acts carried out when one is confronted with the objecticity of a problem (Idea), whereas knowledge designates only the generality of concepts or the calm possession of a rule enabling solutions. A well-known test in psychology involves a monkey who is supposed to find food in boxes of one particular colour amidst others of various colours: there comes a paradoxical period during which the number of "errors" diminishes even though the monkey does not yet possess the "knowledge" or "truth" of a solution in each case: propitious moment in which the philosopher-monkey opens up to truth, himself producing the true, but only to the extent that he begins to penetrate the coloured thickness of a problem. We see here how the discontinuity among answers is engendered on the basis of the continuity of an ideal apprenticeship; how truth and falsity are distributed according to what one understands of a problem; and how the final truth, when it is obtained, emerges as though it were the limit of a problem completely determined and entirely understood, or the product of those genetic series which constitute the sense, or the outcome of a genesis which does not take place only in the head of a monkey. To learn is to enter into the universal of the relations which constitute the Idea, and into their corresponding singularities. The idea of the sea, for example, as Leibniz showed, is a system of liaisons or differential relations between particulars and singularities corresponding to the degrees of variation among these relations—the

totality of the system being incarnated in the real movement of the waves. To learn to swim is to conjugate the distinctive points of our bodies with the singular points of the objective Idea in order to form a problematic field. This conjugation determines for us a threshold of consciousness at which our real acts are adjusted to our perceptions of the real relations, thereby providing a solution to the problem. Moreover, problematic Ideas are precisely the ultimate elements of nature and the subliminal objects of little perceptions. As a result, "learning" always takes place in and through the unconscious, thereby establishing the bond of a profound complicity between nature and mind.

The apprentice, on the other hand, raises each faculty to the level of its transcendent exercise. With regard to sensibility, he attempts to give birth to that second power which grasps that which can only be sensed. This is the education of the senses. From one faculty to another is communicated a violence which nevertheless always understands the Other through the perfection of each. On the basis of which signs within sensibility, by which treasures of the memory, under torsions determined by the singularities of which Idea will thought be aroused? We never know in advance how someone will learn: by means of what loves someone becomes good at Latin, what encounters make them a philosopher, or in what dictionaries they learn to think. The limits of the faculties are encased one in the other in the broken shape of that which bears and transmits difference. There is no more a method for learning than there is a method for finding treasures, but a violent training, a culture or *paideïa* which affects the entire individual (an albino in whom emerges the act of sensing in sensibility, an aphasic in whom emerges the act of speech in language, an acephalous being in whom emerges the act of thinking in thought). Method is the means of that knowledge which regulates the collaboration of all the faculties. It is therefore the manifestation of a common sense or the realisation of a *Cogitatio natura*, and presupposes a good will as though this were a "premeditated decision" of the thinker. Culture, however, is an involuntary adventure, the movement of learning which links a sensibility, a memory and then a thought, with all the cruelties and violence necessary, as Nietzsche said, precisely in order to "train a 'nation of thinkers'" or to "provide a training for the mind".

Of course, the importance and dignity of learning are often recognised. However, this takes the form of a homage to the empirical conditions of knowledge: a nobility is discovered in this preparatory movement which must nevertheless disappear in the result. Moreover, even if we insist upon

the specificity of learning and upon the time involved in apprenticeship, this is in order to appease the scruples of a psychological conscience which certainly does not allow itself to dispute the innate right of knowledge to represent the entire transcendental realm. Learning is only the intermediary between non-knowledge and knowledge, the living passage from one to the other. We may well say that learning is, after all, an infinite task: it is none the less cast with the circumstances and the acquisition of knowledge, outside the supposedly simple essence of knowledge in the form of an innate or *a priori* element, or even a regulative Idea. Finally, apprenticeship falls rather on the side of the rat in the maze, while the philosopher outside the cave carries off only the result—knowledge—in order to discover its transcendental principles. Even in Hegel, the extraordinary apprenticeship which we find in the *Phenomenology* remains subordinated, with regard to its result no less than its principle, to the ideal of knowledge in the form of absolute knowledge. It is true that, here again, Plato is the exception. For him, learning is truly the transcendental movement of the soul, irreducible as much to knowledge as to non-knowledge. It is from "learning", not from knowledge, that the transcendental conditions of thought must be drawn. That is why Plato determines the conditions in the form of *reminiscence*, not innateness. In this manner, time is introduced into thought,—not in the form of the empirical time of the thinker subject to factual conditions, and for whom it takes time to think, but in the form of an in-principle condition or time of pure thought (time takes thought). Reminiscence then finds its proper object, its memorandum, in the specific material of apprenticeship—in other words, in questions and problems as such, in the urgency of problems independently of their solutions, in the realm of the Idea. Why should it be that so many fundamental principles concerning what it means to think are compromised by reminiscence itself? For as we have seen, Platonic time introduces difference, apprenticeship and heterogeneity into thought only in order to subject them again to the mythical form of resemblance and identity, and therefore to the image of thought itself. As a result, the whole Platonic theory of apprenticeship functions as a repentance, crushed by the emerging dogmatic image yet bringing forth a groundlessness that it remains incapable of exploring. A new Meno would say: it is knowledge that is nothing more than an empirical figure, a simple result which continually falls back into experience; whereas learning is the true transcendental structure which unites difference to difference, dissimilarity to dissimilarity, without mediating between them; and introduces

time into thought—not in the form of a mythical past or former present, but in the pure form of an empty time in general. We always rediscover the necessity of reversing the supposed relations or divisions between the empirical and the transcendental. Moreover, we must regard the postulate of knowledge as the eighth postulate of the dogmatic image, one which incorporates and recapitulates all the others in a supposedly simple result.

We have listed eight postulates, each in two forms: (1) the postulate of the principle, or the *Cogitatio natura universalis* (good will of the thinker and good nature of thought); (2) the postulate of the ideal, or common sense (common sense as the *concordia facultatum* and good sense as the distribution which guarantees this concord); (3) the postulate of the model, or of recognition (recognition inviting all the faculties to exercise themselves upon an object supposedly the same, and the consequent possibility of error in the distribution when one faculty confuses one of its objects with a different object of another faculty); (4) the postulate of the element, or of representation (when difference is subordinated to the complementary dimensions of the Same and the Similar, the Analogous and the Opposed); (5) the postulate of the negative, or of error (in which error expresses everything which can go wrong *in* thought, but only as the product of *external* mechanisms); (6) the postulate of logical function, or the proposition (designation is taken to be the locus of truth, sense being no more than the neutralised double or the infinite doubling of the proposition); (7) the postulate of modality, or solutions (problems being materially traced from propositions or, indeed, formally defined by the possibility of their being solved); (8) the postulate of the end, or result, the postulate of knowledge (the subordination of learning to knowledge, and of culture to method). Each postulate has two forms, because they are both natural and philosophical, appearing once in the arbitrariness of examples, once in the presuppositions of the essence. The postulates need not be spoken: they function all the more effectively in silence, in this presupposition with regard to the essence as well as in the choice of examples. Together they form the dogmatic image of thought. They crush thought under an image which is that of the Same and the Similar in representation, but profoundly betrays what it means to think and alienates the two powers of difference and repetition, of philosophical commencement and recommencement. The thought which is born in thought, the act of thinking which is neither given by innateness nor presupposed by reminiscence but

engendered in its genitality, is a thought without image. But what is such a thought, and how does it operate in the world?

Notes

1 See Descartes, "The Search for Truth by Means of the Natural Light", in *The Philosophical Writings of Descartes*, transl. John Cottingham, Robert Stoothoff and Dugald Murdoch, Cambridge: Cambridge University Press, 1984, vol. II.

2 Feuerbach is among those who have pursued farthest the problem of where to begin. He denounces the implicit presuppositions of philosophy in general, and those of Hegel in particular. He shows that philosophy must not begin with its accord with a *pre-philosophical* image, but with its "difference" from *non-philosophy*. (However, he supposes that this exigency of the true beginning is sufficiently met by beginning with empirical, perceptible and concrete being.) See *Contribution à la Critique de la Philosophie de Hegel*, transl. Louis Althusser, in *Manifestes philosophiques*, Paris: Presses Universitaires de France, 1960, especially p. 33.

3 *The sentence "Good sense is of all things in the world the most equally distributed", opens Part 1 of the *Discourse on the Method*, which appears in *The Philosophical Writings of Descartes*, vol. I.

4 *Descartes, "Second Meditation", in *The Philosophical Writings of Descartes*, vol. II, p. 21.

5 Nietzsche, "Schopenhauer as Educator", in *Untimely Meditations*, transl. by R.J. Hollingdale, Cambridge: Cambridge University Press, 1983, p. 137.

6 On this common sense and the persistence of the model of recognition, see Maurice Merleau-Ponty, *Phenomenology of Perception*, transl. Colin Smith, London: Routledge & Kegan Paul, 1962, pp. 239 ff, 313 ff. On the Kantian theory of common senses, see especially the *Critique of Judgment*, transl. Werner S. Pluhar, Indianapolis, IN: Hackett, 1987, sections 18–22 and 40, and the declarations of principle in the *Critique of Pure Reason*: "The ideas of pure reason can never be dialectical in themselves; any deceptive illusion to which

they give occasion must be due solely to their misemployment. For they arise from the very nature of our reason; and it is impossible that this highest tribunal of all the rights and claims of speculation should itself be the source of deceptions and illusions" (Kant, *Critique of Pure Reason*, transl. Norman Kemp Smith, London: Macmillan, 1973, Appendix to the Transcendental Dialectic, p. 533); "in regard to the essential ends of human nature the highest philosophy cannot advance further than is possible under the guidance which nature has bestowed even upon the most ordinary understanding." (from "The Transcendental Doctrine of Method", ch. 2, *Critique of Pure Reason*, p. 652).

7 On the double subordination of difference to conceived identity and perceived resemblance in the "classical" world of representation, see Michel Foucault, *The Order of Things*, transl. Alan Sheridan, London: Tavistock, 1977, pp. 54 ff, 67 ff.

8 Plato, *The Republic*, Book VII, 523b, transl. Paul Shorey, in *Plato: The Collected Dialogues*, ed. E. Hamilton and H. Cairns, Princeton, NJ: Princeton University Press, 1963.

9 Ibid., 524a, b. Note that Gaston Bachelard opposes the problem or the object-bearer of problem to Cartesian doubt, and denounces the recognition model in philosophy: *Le rationalisme appliqué*, Paris: Presses Universitaires de France, 1949, pp. 51–6.

10 The case of the imagination: this is the only case in which Kant considers a faculty liberated from the form of a common sense, and discovers for it a truly legitimate "transcendent" exercise. In effect, the schematic imagination in the *Critique of Pure Reason* is still under the logical common sense; the reflective imagination of judgements of beauty is still under the aesthetic common sense. Yet with the sublime, according to Kant, the imagination is forced or constrained to confront its own limit, its *phantasteon*, its maximum which is equally the unimaginable, the unformed or the deformed in nature (*Critique of Judgment*, s. 26). Moreover, it transmits this constraint to thought itself, which in turn is forced the think the supra-sensible as foundation of both nature and the faculty of thought: thought and imagination here enter into an essential discordance, a reciprocal violence which conditions a new type of accord (s. 27). As a result, in the case of the sublime, the recognition model and the form of common sense are found wanting in favour of a quite different conception of thought (s. 29).

11 Martin Heidegger, *What is Called Thinking?* transl. J. Glenn Gray, New York: Harper & Row, 1968, p. 3. It is true that Heidegger retains the theme of a desire or a *philia*, of an analogy—or rather, a homology—between thought and that which is to be thought. The point is that he retains the primacy of the Same, even if this is supposed to include and comprehend difference as such—whence the metaphors of gift which are substituted for those of violence. In all

these senses, Heidegger does not abandon what we called above the subjective presuppositions. As can be seen in *Being and Time* (transl. John Macquarie and Edward Robinson, Oxford: Basil Blackwell, 1987), there is in effect a pre-ontological and implicit understanding of being, *even though*, Heidegger specifies, *the explicit conception must not follow from it.*

12 The notion of a "discordant—harmony" is well specified by Kostas Axelos, who applies it to the world and employs a particular sign ("and/or") to designate ontological difference in this sense: see *Vers la pensée planétaire*, Paris: Editions de Minuit, 1964.

13 Artaud, "Correspondence with Jacques Rivière", *Collected Works*, vol. 1, transl. Victor Corti, London: John Calder, 1968, p.19 (*translation modified).

14 See Hegel, *Phenomenology of Spirit*, transl. A.V. Miller, Oxford: Oxford University Press, 1977, p. 23: "Dogmatism as a way of thinking, whether in ordinary knowing or in the study of philosophy, is nothing else but the opinion that the true consists in a proposition which is a fixed result, or which is immediately known. To such questions as, when was Caesar born? or how many feet were there in a stadium?, etc., a clear-cut answer ought to be given . . . but the nature of a so-called truth of that kind is different from the nature of philosophical truth."

15 Flaubert, *Bouvard et Pécuchet*. Schelling wrote some splendid pages on evil (stupidity and malevolence), its source which is like the Ground become autonomous (essentially related to individuation), and on the entire history which follows from this, in "Recherches philosophiques sur la nature de la liberté humaine", in *Essais*, transl. S. Jankélévitch, Paris: Aubier, 1949, pp. 265–7: "God allowed this ground to act quite independently . . . ".

16 *Bertrand Russell, *An Inquiry into Meaning and Truth*, Harmondsworth: Penguin, 1962, p. 201.

17 Whence Russell's attitude, which privileges singular propositions: see his polemic with Carnap in *An Inquiry into Meaning and Truth*, pp. 244 ff.

18 See Hubert Elie's excellent book *Le complexe significabile*, Paris: Vrin, 1936, which shows the importance and the paradoxes of this theory of sense as it was developed in the course of the fourteenth century among Ockham's school (Gregory of Rimini, Nicholas d'Autrecourt), and also as it was rediscovered by Meinong. The sterility and ineffectiveness of sense conceived in this manner appears again in Husserl when he writes: "The stratum of expression—and this constitutes its peculiarity—apart from the fact that it lends expression to all other intentionalities, is not productive. Or if one prefers: its productivity, its noematic service, exhausts itself in *expressing* and in the form of the conceptual introduced by that function": *Ideas: General Introduction to Pure Phenomenology*, transl. W.R. Boyce Gibson, London: George Allen & Unwin, 1931, Section 124.

19 *These paradoxes of sense are discussed further, with reference to Lewis Carroll, in *The Logic of Sense*, transl. Mark Lester, New York: Columbia University Press, 1990, pp. 28–35.

20 Aristotle, *Topics*, I, 4, 101b, 30–5, in *The Complete Works of Aristotle*, ed. Jonathan Barnes, Princeton, NJ: Princeton University Press, 1984, vol. I, p. 169. The same illusion continues within modern logic: the calculus of problems as it is defined—notably by Kolgomoroff—still remains traced from a calculus of propositions, in "isomorphism" with it. See Paulette Destouches-Février, "Rapports entre le calcul des problèmes et le calcul des propositions", *Comptes rendus des séances de l'Académie des Sciences*, April 1945. As we shall see, an attempt at "mathematics without negation" such as that of G.F.C. Griss is limited only by this false conception of the category of problems.

Leibniz, on the other hand, was aware of the variable but always profound gap between problems or themes and propositions: "There are indeed 'themes' which can be said to be midway between an idea and a proposition, namely *questions*. Some of these ask only for a Yes or a No, and these are the closest to propositions; but there are others which ask how, and ask for details, and so on, and more must be added to these if they are to become propositions: *New Essays on Human Understanding*, transl. and ed. Peter Remnant and Jonathan Bennett, Cambridge: Cambridge University Press, 1981, Book 4, ch. 1, p. 356.

21 In his *Rules for the Direction of the Mind*, Descartes distinguishes the precepts relating to "simple propositions" from the precepts relating to "questions" (Rule XII). The latter begin only with Rule XIII, and are the first to be concluded. Descartes himself underlines the point of resemblance between his method and the Aristotelian dialectic: "This is the sole respect in which we imitate the dialecticians: when they *exposed* the forms of the syllogisms, they presupposed that the terms or the subject-matter of the syllogisms are known; similarly, we are making it a prerequisite here that the problem under investigation is perfectly understood": *The Philosophical Writings of Descartes*, vol. I, p. 51. Similarly, "questions" have a subordinate role in Malebranche —see *The Search After Truth*, transl. T.M. Lennon and P.J. Olscamp, Columbus: Ohio State University Press, 1980, VI, 2, ch. 7—and in Spinoza, where the use of the geometric method involves no "problems" at all.

In the *Geometry*, however, Descartes underlines the importance of the analytic procedure from the point of view of the constitution of problems, and not only with regard to their solution (Auguste Comte, in some fine pages, insists on this point, and shows how the distribution of "singularities" determines the "conditions of the problem": *Traité élémentaire de géométrie analytique*, 1843). In this sense we can say that Descartes the geometer goes further than Descartes the philosopher.

22 One of the most original characteristics of modern epistemology is the recognition of this double irreducibility of "problems" (in this sense the use of the word "problematic" as a substantive seems to us an indispensable neologism). See Georges Bouligand and his distinction between the "problem-element" and the "global synthesis-element" (notably in *Le déclin des absolus mathématico-logiques*, Editions d'Enseignement supérieur, 1949); Georges Canguilhem and his problem–theory distinction (notably in *On the Normal and the Pathological*, transl. Carolyn R. Fawcett, Dordrecht, Holland: D. Reidel, 1978.

23 Proclus, *A Commentary on the First Book of Euclid's Elements*, transl. Glenn R. Morrow, Princeton, NJ: Princeton University Press, 1970, pp. 63–7.

24 Albert Lautman, *Essai sur les notions de structure et d'existence en mathématiques*, Paris: Hermann, 1938, vol. I, p. 13; vol. II, p. 149 ("the only *a priori* element we allow is that given in the experience of this urgency of problems prior to the discovery of their solutions . . . "). On the double aspect of problems –Ideas, transcendence and immanence, see *Nouvelles recherches sur la structure dialectique des mathématiques*, Paris: Hermann, 1939, pp. 14–15.