

# THE DOCTRINE OF SCIENCE

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## I. THE EQUATION OF SUBJECTS AND SCIENCE<sup>1</sup>

Lacan poses an equation: "the subject upon which we operate in psychoanalysis can only be the subject of science."<sup>2</sup> This equation of subjects is based on three affirmations: (1) that psychoanalysis operates on a subject (and not for example on an ego); (2) that there is a subject of science; (3) that these two subjects are one and the same. What is common to the three affirmations is that they speak of the *subject* and what is understood by this depends on what can be termed the *axiom of the subject*:

- There is some subject distinct from any form of empirical individuality.<sup>3</sup>

This axiom of existence makes use of a term and a distinction that are entirely homologous with propositions arising from Kantian and post-Kantian metaphysics; whether they are synonymous is a question that for the moment will remain in suspense.

The third affirmation constitutes the equation as such; it is based on historical correlations but not founded upon them. The first affirmation concerns analytic practice (this is what the verb *to operate* indicates). This is in no way trivial; its validity is conferred by the authority of an enunciator supposed to know at what point he is in relation to psychoanalysis, and specifically in relation to what Freud made of it. The second affirmation sets a concept to work, that of the "subject of science," which Lacan uses in a precise sense but which is only in part Lacanian. The definition of science that is invoked is not Lacan's — he excuses himself sufficiently there — but what is credited to Lacan is rather the affirmation that this definition of science induces a particular figure of the subject (the existence of which is posed by the axiom of the subject). And what one has there, strictly speaking, is a hypothesis.

Therefore one can and must consider that the equation of subjects depends on this hypothesis, which from now on will be termed *the hypothesis of the subject of science*:

- Modern science, as modern and as science, determines a mode of constitution of the subject.

From this the definition of the subject of science is drawn:

- The subject of science is nothing outside the name of the subject insofar as, by hypothesis, modern science determines a mode of its constitution.

Note that the equation of subjects says nothing about psychoanalysis as *theory*. In particular, it is in no way affirmed that psychoanalysis itself is a science. Lacan is explicit on this point: the fact that “its *praxis* implies no other subject than that of science” is “to be distinguished from the question of knowing whether psychoanalysis is a science (i.e., whether its field is scientific).”<sup>4</sup> The word *praxis* is explicit. It ineluctably invokes the figure of *theoria*. It then appears remarkable that Lacan does not say that the equation of subjects concerns the *theoria* of psychoanalysis. This does not mean that the equation is not a proposition of *theoria*; it means that it is situated at the point of passage from *praxis* to *theoria*. It could be said that it articulates a *theoria* in a nascent state, grasped in the movement of a reflection initiated on *praxis*. On this basis one would conclude that all the propositions of the Lacanian *theoria* suppose the equation of subjects because they suppose the accomplishment of the movement of reflection on *praxis*. The equation thus ensures a seminal function.

This highlights how important it is that the equation is not void. And it only escapes being void on one condition: that the hypothesis of the subject of science itself is not void. This supposes two things: that the notion of science is the object of a sufficiently determined theory and, once this theory is admitted, that one can link to it a certain constitution of the subject.

There is effectively a theory of science in Lacan’s work. It is quite complete and not trivial.<sup>5</sup> To reconstitute its coherency, one can first establish what it isn’t, starting from the difference that separates Freud from Lacan. For in Freud’s work there is also a theory of science. It is very brief and if one asks why it is there the answer is simple. It resides in what is called Freud’s scientism and, in his work, is nothing other than a consent to the ideal of science.<sup>6</sup> This ideal is enough to found the wish that psychoanalysis be a science. I must emphasize *ideal of science*. What is at stake is an ideal point — exterior or infinitely distant — toward which the plan’s lines all tend and which at the same time belongs to all yet never meets up with any of them. This is not the *ideal science*, which “incarnates” in a

variable manner the ideal of science: a strictly imaginary determination, required for representations to be possible.<sup>7</sup>

It is true that humanity has always had need of representations. In particular, when claiming the ideal of science as one's own (as Freud did), it is difficult to avoid giving a representation of what science *must* be, and that is the ideal science. In general, characteristics are borrowed from a science that is constituted at the time of speaking and then one asks, "what must psychoanalysis be in order to be a science in conformity with the model?" From that moment the characteristics have been transformed into criteria. At the same time the way is opened to another scientism, not that of the ideal of science but that of the ideal science. Freud gave himself over to this, taking up a physiognomy of the ideal science generated by others, more qualified in his eyes than Freud himself: Helmholtz, Mach and Boltzmann can be cited, to name merely the greats.<sup>8</sup>

It is true that there is also a transversal theory of science that can be reconstituted from the thread of the Freudian texts, which is not only a theory of what science should be, but an answer to the question, "Why is there some science rather than no science at all?" But this theory remains dispersed and it is not evident that Freud would have consented to its being reassembled as he did regarding his theory of religion.

On the question of the why of science, Lacan did nothing other than repeat Freud's aphorisms, which he summarized in this way: science, at its birth, is a sexual technique.<sup>9</sup> He proceeds with some caution in this matter just as he does in responding to the question "Why is there some psychoanalysis rather than no psychoanalysis at all?" In any case, one does not find a fully constituted body of doctrine on these questions about origins. The Lacanian theory of science is concerned with other things.

Faithful to Freud on the previous point, Lacan goes his own way on the question of the ideal of science: he does not believe in it. To be exact, he doesn't believe in it *for psychoanalysis*. Contrary to what may be supposed, this is what ensues from the foundational equation. With regard to the analytic operation, science does not play the role of an ideal — possibly infinitely distant — point; strictly speaking, science is not exterior to psychoanalysis, it structures in an internal manner the very matter of the object of psychoanalysis. If one sticks with the language of geometry, the field of psychoanalysis can be conceived of as a plane determined by the lines of its propositions (after all, this would be to take up, by means of a calculable displacement, the interpretation Queneau gave of Hilbert); if the point of science is not exterior to this plane, it cannot structure it in a regulatory manner. There is therefore no sense in asking under what conditions psychoanalysis would be a science. There is no more sense in presenting some well-made science as a model that psychoanalysis would have to imitate. In other words, since there is no ideal

of science with regard to psychoanalysis, there is no ideal science for it. Psychoanalysis will find in itself the foundations of its principles and methods.

Still better, psychoanalysis will discover itself to be confident enough to be able to question science. “What is a science that includes psychoanalysis?” asks Lacan in 1965,<sup>10</sup> such that science itself could turn out to be the most consistent form of an activity that would be named *analysis*, which would be found, both diversified and still self-identical, in all regions of knowledge. Psychoanalysis would propose the ideal of this analysis, organizing the epistemological field and enabling orientation within it (witness the theme of the “Lacanian orientation”). Far from psychoanalysis consenting to an ideal of science, it would be the very responsibility of psychoanalysis to construct an ideal of analysis for science.

In its time, *Cahiers pour l’analyse* determined such a point, adding solely that Marxism both could and should be ordered accordingly. One can understand how in the very same gesture they laid claim to both psychoanalysis and epistemology. On the basis of the ideal of analysis, it is quite easy to end up with the ideal analysis, whose mannequin the little Lacanians set about dressing up — refashioning mathematics, logic, physics, biology and so on to measure. But that is of no concern, except socially.

## 2. THE THEORY OF THE MODERN

The first recognizable characteristic of the Lacanian theory of science can be explained in the following way: it must render apparent the singular connection by which science is essential to the existence of psychoanalysis, yet for this very reason is not posed in front of it like some ideal. The most fitting relation for this task is presented in terms homologous with the historical operators, succession and break. Also, Koyré is used as a base, read in the light of the historicizing Kojève.

For purposes of clarity, it is permissible to adopt here the habits of geometers, who reason by means of axioms and theorems. Here are the most important:

Kojève’s theorems:

- (i) There is a break between the ancient world and the modern universe.
- (ii) This break is tied to Christianity.

Koyré’s theorems:

- (i) There is a break between the ancient *episteme* and modern science.
- (ii) Modern science is Galilean science, whose type is mathematized physics.
- (iii) In mathematizing its object, Galilean science strips it of its sensible qualities.

Lacan's hypothesis:

Koyré's theorems are a particular case of Kojève's theorems.<sup>11</sup>

Lacan's lemmas:

- (i) Modern science is constituted by Christianity insofar as the latter is distinguished from the ancient world.
- (ii) Because the point of distinction between Christianity and the ancient world results from Judaism, modern science is constituted by the Judaism that remains in Christianity.<sup>12</sup>
- (iii) Everything that is modern is synchronous with Galilean science and there is no modern except that which is synchronous with Galilean science.

Conforming equally to this theme is the treatment of the hypothesis of the subject of science, which passes via Descartes. It is well known that Lacan endlessly analyzed and commented upon the Cartesian *cogito*.<sup>13</sup> This insistence, in the final analysis, is based on the thesis that Descartes is the first modern philosopher qua modern.

This proposition has certainly been advanced several times, most notably by Hegel. Yet one still has to agree upon what is meant by *modern*. In the strict sense that Lacan gives this term (see lemma [iii]), it can only mean the following: Descartes is supposed to show, by the internal order of his *oeuvre*, what is required of thought by the birth of modern science. Yet the Cartesian edifice is built upon the *cogito*. The thought of science therefore has needs, of which the *cogito* is the testimony. The fact that the author of the *Meditations* is also the creator of analytic geometry and the author of a *Dioptics* certainly constitutes weighty proof. But it is also necessary that this is not merely a contingent fact. This is what is supported by a set of propositions that articulate what could be termed Lacan's *radical Cartesianism*:

- If Descartes is the first modern philosopher it is because of the *cogito*.
- Descartes invents the modern subject.
- Descartes invents the subject of science.
- The Freudian subject, insofar as Freudian psychoanalysis is intrinsically modern, can be none other than the Cartesian subject.

Of course, this is not solely a matter of chronological correlation; a discursive kinship is also supposed. The sales pitch runs as follows: physics eliminates every quality from existents, therefore a theory of the subject that wishes to respond to such a physics must also strip the subject of every quality. This subject, constituted following the characteris-

tic determinations of science, is the subject of science as defined in section one. The qualitative markings of the empirical individual are not appropriate to the subject, whether they are somatic or psychic, nor are the qualitative properties of a soul. The subject is neither mortal nor immortal, neither pure nor impure, neither just nor unjust, neither sinner nor saint, neither damned nor saved. Even the properties that for a long time have been believed to constitute subjectivity as such are not appropriate: this subject has neither self, nor reflexivity, nor consciousness.

Such is precisely the existent that the *cogito* causes to emerge, if at least the order of reasons is taken seriously. At the very instant when this subject is pronounced as certain it is disjoint, by hypothesis, from every quality, the latter being at that moment collectively and distributively put into doubt. The very thought by which one defines the subject is strictly non-specific; it is the minimum common to all possible thought, because all thought, whatever it is (true or false, empirical or not, reasonable or absurd, affirmed or denied or put in doubt), can give me occasion to conclude that "I am." One can see in what sense this existent, a correlate without qualities supposed of a thought without qualities — named subject by Lacan, not by Descartes — responds to the gesture of modern science.

It is true that Descartes did not stop there; he passed on without delay, as if in haste, to consciousness and thought with qualities. For it is clearly a matter of thought with qualities once the synonymy is posed: "A thing which thinks. What is that? A thing that doubts, understands, affirms, denies, is willing, is unwilling, and also imagines and has sensory perceptions."<sup>14</sup> One then understands why Lacan only ever lays claim to what can be called the extreme point of the *cogito*, and employs every effort in trying to suspend the passage from the first moment to the second. To this end he confines the *cogito* to its strict enunciation; moreover, he buckles this enunciation back upon itself, making the conclusion ("therefore, I am") the pure *pronuntiatum* of the premise ("I think"): "writing: *I think: 'therefore, I am,'* with quotes around the second clause."<sup>15</sup> In this manner, the insistence of thought without qualities is assured before it diversifies into doubt, conception, affirmation, negation and so on.<sup>16</sup>

Yet thought without qualities is not only appropriate to modern science. Lacan demonstrates that it is also necessary for the Freudian unconscious. The very pivot of Freud's program resides in this acknowledgement, which the fact of the dream (*factum somnii*) appears to impose: "there is thought in the dream." From whence the reasoning: if there is thought in the dream (in the joke, in the parapraxes of everyday life, and so on), then thought is not what the philosophical tradition has said it to be: namely, it is not a corollary of self-consciousness. Now, if there is thought in the dream (in the joke, in the

parapraxes of everyday life, and so on; this is what the *Traumdeutung* and the later works established); therefore, and so on.

If one allows that the name *unconscious* is shorthand for the negative proposition “self-consciousness is not a constitutive property of thought,” then the following theorem is obtained:

- If there is thought in the dream, there is an unconscious.

By the same token the following lemma is obtained:

- The dream is the royal road of the unconscious.

And the definition that is deduced from the theorem and the lemma:

- To affirm that there is an unconscious is equivalent to affirming *it thinks*.

Lacan adds solely the proposition drawn from Descartes and extended to Freud:

- If there is thinking, there is some subject.

However this reasoning is only correct on two conditions. First, it is necessary that it be possible for there to be a subject while there is neither consciousness nor self — this would require a nontrivial theory of the subject. Second, it is necessary that the thought that makes up the material of the dream and the parapraxis is disjoint from any quality. In this manner the phenomena will be saved.<sup>17</sup>

Being Freudian, according to Lacan, consists in a triple affirmation: that there is some unconscious, that it is not foreign to thinking, and on that basis, that it is not foreign to a thinking subject. If it were, psychoanalysis would be illegitimate in principle and doubtlessly impossible in practice. An unconscious foreign to the subject that thinks is actually somatic, but the somatic has nothing to do with either truth or speech; yet psychoanalysis has to do with both truth and speech. The unconscious, insofar as psychoanalysis has something to do with it, is therefore neither foreign to the subject nor to thought. By way of consequence, neither the subject nor thought requires consciousness.

But to say that self-consciousness is not a constitutive property of the subject is to correct the philosophical tradition and notably Descartes, that is, the Descartes of the second moment, who is in as much of a hurry to leave the extreme point of the *cogito* as certain prisoners are to leave their prison. In light of Freud, self-consciousness becomes solely a mark of empirical individuality, unduly introduced by philosophy into the subject, however meticulous its filtering in other regards. Psychoanalysis therefore understands the axiom of the subject more strictly than any other doctrine. With an unparalleled precision, it separates two entities: in one, self-consciousness can be supposed to be

non-essential without contradiction; and in the other, self-consciousness cannot be supposed to be non-essential without contradiction. The first alone responds exactly to the requirements of science, and it alone falls within the limits fixed by the axiom of the subject; it will then be termed, in all legitimacy, the subject of science. It is at this moment that one understands why it is just as much a Cartesian subject as a Freudian subject.<sup>18</sup> As for the second entity, the name *ego* suits it as much as any other.

The theory of science is derived from Koyré and Kojève; the unitarian interpretation of Descartes, the scientist and Descartes, the metaphysician is based on Koyré; the interpretation of the *cogito* is dependent upon Gueroult; the axiom of the subject is taken up, in homonymy or synonymy, from the post-Kantian tradition; but the hypothesis of the subject of science, the equation of subjects, the interpretation that this implies of Freud, and the articulation of the ensemble are all specific to Lacan. This is why, concerning Lacan, it is fair to speak not of a theory of science nor even of an epistemology, but of a veritable *doctrine of science*. What is specifically designated by this is the conjunction of the propositions on science and the propositions on the subject.

### 3. THE HISTORICIST STYLISTICS

At first sight, the doctrine of science is fundamentally historicizing in each of its parts. It historicizes that which concerns the hypothesis of the subject of science: "...a certain moment of the subject that I consider to be an essential correlate of science, a historically defined moment...the moment Descartes inaugurates, which goes by the name of the *cogito*."<sup>19</sup> It is historicizing in what concerns science: "the decisive change which, with physics paving the way, founded *science* in the modern sense..."<sup>20</sup> It is historicizing in what concerns the articulation of science and the subject: "In this situation what seems radical to me is a modification in our subject position, in a double sense: that it is inaugural therein and that science continually reinforces it. Koyré is our guide here..."<sup>21</sup>

The historicism is all the more accentuated if one follows Koyré in more detail. He drew two discriminatives from his own theorems, suitable, according to him, for distinguishing a Galilean science from among an ensemble of discourses that present themselves as science. The first states:

A science is Galilean if it combines two traits: mathematization and empiricity.

- This first discriminative, it's true, could be interpreted in non-historicist terms; all that is needed for that would be a general interpretation of the term "empiricity" and a response to the question, "by what mark is a proposition recognized as empirical?" But Koyré himself said nothing of the sort. In order

to clarify the first discriminative he added a second, just as historicizing:

- Given that all empirical existents can be treated by a technique and that mathematization is the paradigm of all theory, Galilean science is a theory of technique and technique is a practical application of science.

The value of this discriminative is apparently entirely dependent upon its capacity to describe and explain exhaustively what everyone can observe today: “the galloping form of [science’s] inmixing in our world,” “the chain reactions which characterize what one might call the expansions of its energetics.”<sup>22</sup> Thus, Lacan gave the lunar expeditions the value of a sign (“the lunar landing vehicle, being Newton’s formula realized in a machine...”<sup>23</sup>). Yet these are the proofs of a historian of the present, in the same sense that the first discriminative is in fact based upon the proofs of a historian of the past.

One can draw some consequences from the first discriminative: science has as its object the set of what exists empirically — which can be called the universe — and science treats this set with as much precision as the literal disciplines treat theirs.<sup>24</sup> In other words, science made literal, as such, is a precise science. But this can also be interpreted in historical terms.

Take Galileo’s aphorism, “the great book of the universe is written in mathematical language and its characters are triangles, circles, and other geometric figures.”<sup>25</sup> It can only be completely understood if referred to humanism (Florence had been the latter’s capital for a long time, and Galileo was Tuscan). To speak of the book of nature or of the world or of the universe, is in itself an extremely ancient figure of style, but it acquired a new range once printed editions became a scholarly art and once the editing of texts became subject to constraining rules. To speak of the characters of this book was to rediscover Democritus, Epicurus and Lucretius (Redondi has marked the importance, perhaps revelatory, of this alliance), but it was also to say something different, once typography, as such, was submitted to geometric forms and it was revealed that corrections could depend upon the form of a letter.<sup>26</sup>

In other words, literality clarified the hold of mathematization, which, when it was a matter of nature, was both its sign and its means; but it also immediately became something more: a demand for precision. This is because, by way of humanism, the ensemble of disciplines of the letter (let’s say, philology) constituted the ideal science with regard to precision. That the physician be as precise with regard to the universe (and as free of the fetters of tradition) as Estienne had been concerning Plato’s *text*, or Laurent Valla had been concerning the *text* of the Gift of Constantine, or Erasmus concerning the *text* of the Evangiles, such is the injunction hidden in the very word *book*.

This means that the apparently direct passage from literality to precision can only be entirely explained by a history. The same thing goes for the passage, apparently direct, from precision to instrumentation. In Galileo's eyes, mathematics and measure were the means — among the means, the rest will be revealed — that would allow humble physics to one day equal what the prestigious philology, through the science of language (via grammar), and through the science of written documents, had, long ago, accomplished. It is true that precision concerning empirical material required instruments that were themselves material, that is, quite different, from those the philologist used, and undoubtedly quite inferior in dignity in Galileo's eyes. Modern science, as empirical, is not only experimental; it is instrumental.<sup>27</sup>

The second discriminative intervenes here. Technique has always been a material treatment by material instruments of the empirical as material. Once science takes the empirical for its object, technique can and must provide instruments for it because, after all, this science, which takes the empirical for its object, is also a literal science, that is, a precise science; the instruments provided by technique can and must be made as instruments of precision. It so happens that this was possible at that point in time because of technological progress, thanks to the celebrated engineers of the Renaissance — a thesis that, again, is historical.

The universe of modern science is at the same time and via the same movement a universe of precision and a universe of technique. Science is only literally precise if the instruments produced by technique allow it to be so materially. It is true that in the eyes of Galileo, these instruments only permitted precision insofar as science presided over their conception and their execution. Such is the true sense of the telescope and of science's relation to engineers. In this way the modern universe is configured as a union between science and technique, so intimate and reciprocal that one could also say that it's a matter of the same entity in two forms; or rather, a science, sometimes fundamental, sometimes applied; or rather, a technique, sometimes theoretical, sometimes practical.<sup>28</sup>

#### 4. THE ANCIENT EPISTEME

Historicism is all the more accentuated when one takes into account the pertinence of the reference to antiquity. It is primordial. If science becomes the theory of technique, and technique becomes the practical application of science, then one is supposing that the couple theory/practice exactly overlaps the couple science/technique. To understand the discriminative range of this overlap, one must suppose that it is not self-evident. The simplest means of doing this is to show that it has not always been true, by geographical variation (this is the question of Chinese science), or by temporal variation.

Koyré chose the second way. In the ancient world, he discovered the couple *theoria/praxis*, entirely independent of the couple *episteme/techne*. But at the same time it became possible to articulate what appears to the moderns as a paradox of this past world: the existence of an *episteme*, the existence of *technai*, and yet at the same time, the nonexistence of productive machines. Koyré's doctrine thus concludes with hypotheses on questions that are strictly speaking those of historians, concerning slavery, machines and work in the ancient world.<sup>29</sup>

This is not a matter of an extension that Koyré could have dispensed with. It apparently goes to the very heart of his theorems, such as he formulates them himself. Taken in their original version, these are, as we have seen, fundamentally differential. They speak of Galilean science, but the distinctive traits they confer on it are only fully grasped in a relation of opposition and difference. The two opposite and differential terms are presented in historical language. In truth, the opposition of antiquity to modernity constitutes the pivot of what we call history, and many hold the reciprocal position that speaking of antiquity and modernity is only meaningful if one admits history. Galilean science can only be completely understood if one understands what it isn't, but in Koyré's theory what it isn't is only constructible in a historical space.

The *episteme* is revealed as complete solely at the instant wherein it exposes that by which some object cannot, in all necessity and for all eternity, be other than it is. To be more exact, the part made up of the *episteme* in a discourse is solely the grouping of what that discourse grasps of the necessary and the eternal in its object. It then follows that an object lends itself all the more naturally to an *episteme* the more easily it reveals that which in it makes it necessary and eternal — such that there is no science of what can be other than it is, and the most complete science is the science of the most necessary and eternal object. It then also follows that in man, science can only be supported from what allies man to the eternal and the necessary. There is a name for that: the *soul*. It is distinguished from the body, that agency in man which allies him to the passing and the contingent. Finally, it then follows that mathematics proposes to science a chosen paradigm.

For the mathematics inherited from the Greeks arose from the necessary and the eternal. Figures and Numbers cannot be other than they are and by the same token cannot either come to be or cease to be — being as they are for all eternity. The necessity of demonstration has value solely in the exact measure that it is co-natural with necessity in itself. Just as the trajectories of celestial bodies crystallize for corporal eyes the most adequate figure of the eternal, in the same manner the path that departs from principles and axioms to arrive at conclusions crystallizes for the eyes of the soul the most adequate figure of the necessary.

Inversely, the empirical in its very diversity, does not cease to come to be or cease to be;

by consequence it is incessantly other than it is. It is thus intrinsically rebellious to mathematics. If, however, mathematics can grasp something among this diversity, then that will be what lets itself be recognized as self-identical and eternal: the Same as such. Say for example, that certain objects, falling under the senses, let themselves be completely mathematized. What is supposed in them are eternal beings — hence the celestial bodies or harmonies. Say for example, that certain senses emanate more directly from the soul — hence sight.<sup>30</sup> For all objects that fall under any sense, one can and must cause some glimmer of eternity to emerge. If one agrees to term this glimmer hidden in each being “idea,” then it is understandable that certain ancients were able to define ideas by Numbers and that Numbers were solely an access to the Same. It was for this reason that they were important, and not due to the calculations that they made possible.

All the more so, Number is not the sole mark of the Same. Still more fundamental is necessity in demonstrations. The Greek *episteme* is founded upon demonstrations and demonstrations alone; mathematicity is only one of their secondary consequences. The radical and defining gesture consisted in drawing, from assured principles and evident axioms, conclusions in conformity with the rules of reasoning while respecting phenomenal appearances. Mathematics proposes the purest type of demonstration, to the extent that it requires a specific discipline, termed logic or dialectic, to expose its rules: (a) the principle of the unity of the object and of the homogeneity of the domain: all the propositions of science must concern elements of the same domain and be related to a unique object; (b) the principle of the minimum and the maximum: the propositions of science are either theorems or axioms — a maximum number of theorems must be deduced from a minimal number of axioms, expressed by a minimal number of primitive concepts; (c) the principle of evidence: all the axioms and primitive concepts must be evident; this dispenses with the need for their definition or demonstration.<sup>31</sup>

Mathematics is sovereign because it proposes the purest type of demonstration; it does so because the beings it deals with, numbers or figures, are in the closest position to the eternal and the perfect. Nothing of the sensible can come to alter the necessity of its *logoi*. It is therefore the formal paradigm of the *episteme* as such — of what there is in each particular *episteme* that makes it an *episteme* in itself, of what there is in every discourse that makes it a particular *episteme* (hence the utility of the *more geometrico*, for rendering visible, outside mathematics, the articulation of the *episteme*).

At the same time it is understood that mathematics is this formal paradigm to the degree that it *is not* the supreme *episteme*. It is not the supreme *episteme* because its object is not the supreme object; yet mathematics provides a model, because its object, stripped to the maximum of all sensible substance, has the maximum resemblance, via its formal

properties, to the supreme object. If what there is of science in a discourse depends on what that discourse grasps of the eternal, the perfect and the necessary in its object, and if, moreover, there exists an object of which one can say that it is the most necessary, the most perfect and the most eternal, because in fact it is nothing if not the necessary, the perfect and the eternal in themselves, the only entire and full science is that which, conforming to the mathematical paradigm, concerns that object that is above and beyond all mathematics: namely, God — if one agrees to so name the necessary, perfect and eternal being, hence the most necessary, the most perfect and the most eternal. Number can act as an access to such a being, the best access, the sole one perhaps, but number is not God. Mathematics alludes to what it isn't at the very instant in which it establishes its reign, but this allusion must direct the gaze toward a supreme being.

At the same time, the possibility of science in humanity is born from that which in humans allies them to the necessary and the eternal. The name of that alliance, as mentioned, is the *soul*, it being a matter of a localizable region in a human or a quasi-geometric place of points wherein the alliance is accomplished. As for the *body*, which marks humanity with the contingent and the passing, it is sometimes an allusion, sometimes an obstacle: an allusion by those of its parts that most resemble, in their materiality, materialities that themselves allude to the necessary and the eternal (the gaze, which resembles light; proportioned beauty, which alludes to numerable symmetries); everywhere else the body is an obstacle. A filter is thus required, designed to reduce the opacities of the body, leading it to the ways of purity. There is therefore only a complete *episteme* for a being endowed with a soul and a body, and moreover, one that has submitted them both to the appropriate exercises.

Having completed such exercises, the knower recognizes that the logical necessity of science itself is nothing other than the mark imprinted upon discourse by each being's necessity of being. In no way does Aristotle contradict Plato on this point. When he defines the syllogism — and one must remember, this is the general name of reasoning before being the technical name of a particular form — he says, “a discourse in which certain things having been posed, a different thing necessarily results” (*ex anankès*). But this is to echo the *Timaeus*, which ties regulated thought to the waning of celestial bodies: “God invented and gave us sight to the end that we might behold the courses of intelligence in the heaven, and apply them to the courses of our own intelligence which are akin to them, the unperturbed to the perturbed, and that we, learning them and partaking of the natural truth of reason, might imitate the absolutely unerring courses of God and regulate our own vagaries.”<sup>32</sup> Both the Academy and the Lyceum bore witness to the proper movement of the ancient *episteme*, such as it was supposed by Koyrè's theorems

and the doctrine of science. The necessity in the *logoi*, qua necessity, is the point within science wherein resemblance is achieved between the necessary being of the entity and the necessary being of knowing; reciprocally, science is nothing if not the effectuation of that resemblance that, by way of the purified soul, unifies the human endowed with a body with the incorporeal Supreme Being. There is no science except that of the necessary. Still more general than the envelopment of the microcosm by the macrocosm (however recurrent this schema of the imagination), the pursuit of resemblance at the point of necessity constitutes the prime mover of knowledge.

The Galilean peripeteia is clarified by the contrast: it is, first of all, that mathematics, in science, can spell out *all* the empirical, without concerning itself with any hierarchy of being, without ordering the objects on a scale going from the least perfect — intrinsically rebellious to number — to the most perfect — almost entirely numerable; second, it is that mathematics, spelling out the entirety of the empirical, intervenes by means of its literal nature, that is via calculation, rather than by demonstration (the emergence of science is also the inexorable decline of *mos geometricus*); third, it is that mathematics spells out the empirical *as such*, in its passing, its imperfection and its opacity.

One then understands the articulation of science with technique.<sup>33</sup> It is not that the ancient world did not know technique. Rather, if one believes the doctrine of science, it did not link it in an elective manner to the *episteme*. To be exact, two couples are at our disposition: *episteme/techne*, *theoria/praxis*. The modern universe superimposes them — except that, of course, at the very same moment the words cease to be correct. In the ancient world there is no reason for the couples to be exactly superimposed. If they do combine, they can get rather tangled up to the extent that an ancient term appears to gather traits that today one would say are incompatible. This signifies that in the Greek system there is a part of *theoria* in *techne* and a part of *praxis* in *episteme*. This is clearly why Socrates interrogated the artisans, in order to force them to isolate through filtering the kernel of *theoria* whose supports they were; it is clearly why the supports of the *episteme* must also act purely — science linked to conscience, as governing actions (*praxeis*).

The modern rupture therefore requires that mathematics to some degree ceases to be linked hand in hand to the eternal. Mathematizable beings (and, par excellence, the celestial bodies) are no longer *in the same manner* supposed to be eternal and perfect; they may always be supposed to be so, but that would depend on other reasons and if one must cease to suppose them to be such (if one must discern spots on the sun), that will not affect the possibility of mathematizing their paths. In the same manner, it is always possible that the necessity of mathematical demonstrations is supposed to expose the necessity of being, but that would not be via a divine analogy and, especially, it would be of no value

in the usage that is made of mathematical demonstrations in science.

In science, numbers function no longer like Numbers, golden keys of the Same, but like letters, and as letters they must grasp the diverse in its quality of being incessantly other. The empirical is literalizable *qua* empirical; the letter does not bear the object up to the heaven of Ideas; the sky is not the visible deployment of the infinite sphere of being; literalization is not idealization.

The peripeteia is therefore not that modern science becomes mathematical; ancient science was already mathematical and in certain regards modern science is even less so. Rather than mathematical, one must in effect say *mathematized*. The primary resource of mathematization is number as letter, and on that basis, calculation — not the well-formed logic of demonstrations. For the Greeks, science is mathematical; it is not number insofar as it allows counting that works toward its mathematicity (which is not mathematization) but that which makes Number an access to the Same in itself, that is, the *logos* as necessary demonstration.

But the detour via the *episteme* is not only important for Koyré. It is also one of the most important moments of the Lacanian thematic. If psychoanalysis goes hand in hand with the emergence of the modern universe, then obviously there lies one of its positive conditions, but the doctrine of science says more; it equally conceals a negative condition: the disappearance of ancient science. In other words there is something in the *episteme* that is joined to such an extent to psychoanalysis that it is able to prevent it from occurring; to understand the *episteme* is thus also to understand psychoanalysis, not only by contrast but by an intimate relation of mutual exclusion.

But if the *episteme* is nothing other than a historical figure, then the comprehension of psychoanalysis is radically historicist. Yet history, in Lacan's eyes, is fallacious. Must one then conclude that the doctrine of science, as unfolded here, is itself fallacious? That, on this basis, the hypothesis of the subject of science, which ties psychoanalysis to modern science, is an appearance to be destroyed? At the most a means for comprehension that must be thrown away once used — “throw my book away” says Gide; “one must throw away the ladder after having climbed it” said Wittgenstein — is this the last word of the doctrine?

## 5. THAT HISTORICISM IS NOT NECESSARY

I don't believe, however, that this is an inevitable consequence. The figure of the *episteme* is precisely what furnishes the most solid proof. The persistence of its pertinence with regard to psychoanalysis does not arise from reminiscence, but from the present.

To be exact, it arises from a logic. A figure of the *episteme* has been determined; it has

distinctive characteristics. The latter are based upon the testimony of archives. But this ballast, however convenient and even correct it may be, is in no way at the level of principle.<sup>34</sup> All that is necessary is that the figure that is sketched out is consistent and responds to effectible discourses. It is not necessary that, *de facto*, the period referred to as antiquity knew this figure alone; no more is it necessary that this figure be manifest solely during this period. Whoever demonstrates the existence in Greece and Rome of discourses both mathematized and empirical will weaken Koyré's theorems; but they will not necessarily weaken the doctrine of science.<sup>35</sup> Whoever demonstrates the existence, in the modern universe, of discourses that conform to the rules of the *episteme* will not even weaken Koyré's theorems.

The same reasoning also goes for geographical correlations: it does appear that outside the Occident, a discourse in conformity to the doctrine of science is nowhere to be found. But it is not indispensable to Lacan that it be found. In fact, in the thematic that Lacan lays claims to, the *episteme* that modern science separates itself from is more a structural figure than a properly historical entity. It is characterized by a set of theses, not by dating, even if one can establish a natural relation between the theses and dates. The definitive theses turn on the status of mathematics and on the relation between the contingent and passing, and the eternal and necessary.

The power of these theses has not vanished. Remaining purely and solely at the level of observation, who could doubt that in the figures of the ideal science, the traits of Euclidean demonstration still persist? Many recent discourses lay claim openly to an epistemology of the minimum and the maximum, which originates, of course, with the Greeks; such is, as shall be seen, one of the paradoxical traits of structuralism. If the soul, as Lacan holds on the basis of the doctrine of science, is intimately correlated to the *episteme* and to its constitutive principles, who could deny that the soul is recurrent in the most everyday discourses? Couldn't one even hold that in the soul the current discourse of civilized democracy finds its most solid anchoring point? In religions, in the spiritual party, in humanitarian gesticulation, in the political Tartuffe, one does not discern, contrary to what is often believed, the hold of Judeo-Christianity (progressive variant of the Judeo-Masonic), but rather the thematic of the Same, handed down from the Ancients. That the demiurge of the *Timaeus* and Aristotle's prime mover have fallen to the rank of Father Christmas, that they are supposed to restore all damage visible to bodily eyes by a gain visible to the eyes of the soul alone, can lend itself to laughter or tears but they are not incomprehensible.

As for science, however ready it is with its modernities, isn't the most insistent demand addressed to it the demand that it clear the conscience?<sup>36</sup> The belief remains that a moral magistracy is the duty of a great scientist — on the condition that they solely echo what

everyone has already thought, at least in the instants when they do not think. This is what is called, using a name also handed down from the Greeks, ethics. I will not argue about whether ethics is legitimate or not in the modern universe.<sup>37</sup> One thing however is sure: if ethics exists, science has nothing to do with it.

One can certainly reason in historicist terms; one could take up Gramsci's language: modern man is never contemporary with himself ("we are anachronistic in our own time" he wrote in his prison).<sup>38</sup> But Lacan is more radical, that is, more Freudian.

In a celebrated passage from his *Introductory Lectures on Psychoanalysis*, Freud mentions three "injuries which science has inflicted upon the naïve self-love of humanity": Copernicus via the putting into doubt of geocentrism, Darwin and Wallace via natural selection, and psychoanalysis.<sup>39</sup> In this way he explained the unbridled hostility that the latter provoked, comparable in his eyes to the fury unleashed by its great predecessors. It is little matter after all whether he was correct in the historical detail (Lacan, for his part, doubted it, privileging Kepler at the expense of Copernicus). Beyond this detail, it is necessary to restate the fundamental thesis that there is a recurrent anticopernicanism, and it is linked to the ego.

The term used by Freud, *Eigenliebe*, certainly carries a moral nuance (one thinks of *amor sui*, if not of the *amour propre* of the *Maximes*), but one can easily strip it of that nuance to reduce it to its material kernel, which is the ego. The ego is structural, and it is structural because it is solely the name of the function of the imaginary. This is what is affected by modern cosmology, whether one attributes the latter to Copernicus or Kepler. The heliocentrism of the first matters less because of the supposed dethroning of the Earth than because of the radical disharmony installed between the geometric center of the planetary system and the center of observation, which remains in the places of man; the step taken by the second promotes, at the expense of the circle with a unique center, the ellipse with two foci, one of which will be irremediably empty. In both cases, the good form of the circle wherein all centers coincide with all centers has given way to a bad form.<sup>40</sup>

There again, the anticopernicanism is structural, because the ego and the imaginary, owing to their own proper law, privilege all good form. It is thus true that the *episteme* as historical figure has disappeared, but certain of its characteristic traits remain because the ego remains, whatever the periodizations.

On that basis, the following propositions are drawn in both Freud and Lacan:

- The ego has a horror of science.
- The ego has a horror of the letter as such.
- The ego and the imaginary are *gestaltist*.
- Science and the letter are indifferent to good forms.
- The imaginary as such is radically foreign to modern science.
- Modern science, as literal, dissolves the imaginary.

From now on one can better evaluate the vocabulary of periodization, such as it appears in Lacan's work, and the vocabulary of massive comparisons, which is extremely close to Kojève's neo-Hegelian style. By means of these two vocabularies, the adept will have no difficulty in articulating one of the possible responses to the question of knowing whether Lacan requires a theory of science. It is not, they will say, via scientism, because Lacan does not believe in the ideal of science for psychoanalysis and even less in an ideal science. Rather, it would apparently be via historicizing theses: "the emergence of Galilean science rendered psychoanalysis possible" or "psychoanalysis would not have been conceived without the suturing with which modern science operates with regard to the subject (and whose documentary trace is the *cogito*)" or "psychoanalysis can only be unfolded in the infinite universe of science" and so on. The problem is that these responses do nothing other than reiterate the question in another form. In a more general manner, one must not let oneself be taken in by the Lacan of the globalizing comparisons; it's a Lacan of scholarly conversation, but not a Lacan of knowledge.

On this occasion, the periodization has a precise function: to break, concerning psychoanalysis, with the pertinence of the couple ideal of science/ideal science. What could be more effective in this regard than the operators of succession and break whose minor consequence is a relativism and a nominalism of good company? I would go so far as to advance the following: in order to open the way for psychoanalysis in a conjuncture dominated by philosophical idealism, Freud had to base himself on a scientism of the ideal of science. The price to pay was no less than the scientism of the ideal science. In a conjuncture in which psychoanalytic institutions let themselves be dominated by a scientism of the ideal science, Lacan, in order to forge ahead in psychoanalysis, had to relativize and nominalize; the price to pay was the periodist discourse. In both cases it is a matter of securing, by different means, a similar function, which in both cases is a matter of protrep-

tic. Or, if one wants to attain the kernel of knowledge, it is appropriate to render it logically independent of any protreptic. In this case, this would be to render it independent of chronological successions and simultaneities.

In this manner, we do nothing other than follow Lacan. For everything is in place for cutting costs and disengaging from the historical novel. From the moment that the periodizing language had its effect, from the moment that via it, the double phantom ideal of science/ideal science was found to have lost its powers, Lacan started to purify the theory of the break. Such is the function of the theory of discourses, set in place from 1969 on: to reveal the properties of discourse in general (remember discourse, in Lacan's work, is the social bond) and by doing this, to show that heterogeneity and multiplicity are intrinsic to them.<sup>41</sup> The latter are not simply the effects, in discourse, of periods and epochs that would be in themselves extrinsic to discourse. In particular, they are not simply projected upon the axis of successions ("this is in no way to be taken as a series of historical emergences"<sup>42</sup>). By a doctrine of the plurality of places, of the plurality of terms, of the difference between properties of place and properties of terms, of the mutability of terms in relation to places, what is obtained is what could be called a nonchronological and more generally nonsuccessive articulation of the concept of break. Undoubtedly, the emergence of a new discourse, the passage from one discourse to another (what Lacan terms the "quarter turn"<sup>43</sup>), in a word, the change, can be an event; these events are an object that historians attempt to grasp in the form of a chronology. But they are not what historians say they are. All history, in this regard, emerges from fallacy and the first adulteration consists precisely in the minimal homogenization supposed by temporal serialization. In itself, the quarter turn has no need to inscribe itself in a historical series.

Given that the theory of discourse is a literalization of places and terms, the break is first of all the marking of a literal impossibility. It is impossible that a system of letters be another such system. In other words, there is no internal transformation of systems; all transformation is passage from one system to another.

More profoundly, one could hold that a discourse defined in such a way is nothing other than a set of rules for synonymy and non synonymy. Two discourses will be different from one another insofar as their defining rules are different. The nature of the discursive break is then determined in the following way:

- To say that there is a break between two discourses is solely to say that none of the propositions of one are synonymous with the propositions of the other.

From this one can conclude that there can only be synonymies — if they exist — within the same discourse, and that between different discourses, the only possible resemblances

arise from homology. In such a theory, the notion of break and the notion of discourse depend entirely on each other; between two really different discourses there is no other relation than break, but the break is none other than the name of their real difference. The conclusion imposed is as follows:

- A break is not fundamentally chronological.

One could put it in other terms, generalizing its range:

- The theory of discourses is an antihistory.

Thus, synchrony here does not signify contemporaneity. It must rather be understood in the sense in which it is said that two pendulums are synchronous — that between talk of the same date, and even within the same talk, there is nonsynchrony that can be conceived easily. In the same manner, the passage from one discourse to another does not lead to univocal successions; a discourse synchronous with the *episteme* could succeed, in time, a discourse synchronous with science (and inversely). More profoundly, the nonchronological doctrine of breaks implies that a succession is only ever imaginary. There is no last real instance that legitimates serial order.

The historicizing reading of the doctrine of science is only necessary if one confines oneself to protreptic ends; it is radically insufficient if one takes into account the construction of knowledge. It is therefore appropriate to state more explicitly the intrinsic and structural traits of Galilean science and not to confine oneself to a historical reference to Galileo and his successors. This is moreover to rediscover a concern of Koyré himself, who advanced theses on this point. Lacan made use of the latter and, without always being entirely explicit, came up with others that complete them.

## 6. LITERALITY AND CONTINGENCY

It is possible to read Koyré eliminating the historical operators. To be more exact, it is possible to purify the Lacanian doctrine's reading of Koyré. In combining mathematicity and empiricity, in regrouping *theoria* and *praxis*, *episteme* and *techné*, Koyré's discriminatives accomplish multiple operations. However, they can all be summed up in one alone. In order to understand it one must return to an epistemology apparently well removed from Koyré, that of Popper. A scientific proposition must be refutable, said Popper, thus determining, under the name "demarcation," what one could term *Popper's discriminative*. But a proposition can only be refutable if its negation is not logically contradictory or if it can be materially invalidated by a simple observation. In other words, its referent must be able — logically or materially — to be other than it is. But that, that is contingency. In short, only a contingent proposition is refutable; there is therefore no other science than that of the contingent.

Reciprocally, every contingent can and must be graspable by science — both theoretical and applied. The set of contingents, as science grasps them in theory and practice, is the universe.

Such is the thematic in which Lacan really inscribes himself. Its middle term is the contingent. Through the latter, Koyré's chronological discriminative and Popper's structural discriminative can be combined.<sup>44</sup> The doctrine of science is revealed to rest upon a hidden lemma:

- Koyré's discriminative and Popper's discriminative are synonymous, on the condition that they are grasped from the point of contingency.

The first consequence imposes itself: whatever formulation Koyré's theorem was originally given in, it is not fundamentally a historical proposition; if psychoanalysis depends on this theorem, it is not for historical reasons (and especially not for chronological reasons).

A second consequence, more profound, poses that the equation of subjects be rewritten as follows:

- The subject upon which psychoanalysis operates, being a correlate of modern science, is a correlate of the contingent.

What this rewriting reveals is that Popper is necessary to Lacan. It is true that Lacan hardly ever makes reference to Popper (he became interested later on and without passion); however, it is clearly the word *contingent* that is seized by Lacan in Koyré and Kojève's work: "the starry vault no longer exists, and the set of celestial bodies...present themselves as though they could just as well not be there — their reality is essentially marked...by a character of facticity, they are fundamentally contingent."<sup>45</sup> In the chain of reasons that leads Koyré's and Kojève's propositions to such a promotion of contingency, it is legitimate, even if it is within Lacan's ignorance of Popper and Popper's of Lacan, to restore the missing link.

If one wishes, however, to confine oneself to what Lacan could explicitly think, is it to go beyond the legitimate to evoke Mallarmé here? In truth, if one admits that what is proper to the modern letter is its grasping of the contingent as contingent, the first motto of the age of science states that no letter will ever abolish chance. And the second statement is that every letter is a throw of the dice.

The letter is as it is, without any reason causing it to be what it is; by the same token, there is no reason for it to be other than it is. And if it were other than it is, it would solely be another letter. In truth, from the moment that it is, the letter remains and does not change ("the unique number which cannot be another"). At the most, a discourse may not change the letter, but rather change letters. In this manner, and by a tricky turn of events,

the letter takes on the traits of immutability, homomorphic to those of the eternal idea. Undoubtedly, the immutability of what has no reason to be other than it is has nothing to do with the immutability of what cannot, without violating reason, be other than it is. But the imaginary homomorphism remains.

It then follows that the capture of the diverse by the letter gives the letter, insofar as the diverse can be other than it is, the imaginary traits of what cannot be other than it is. This is what is called the necessity of the laws of science. It resembles in every point the necessity of the Supreme Being, but it resembles it all the more insofar as it has nothing to do with it. The structure of modern science is entirely based on contingency. The material necessity that one recognizes in these laws is the scar of that very contingency. In a moment of clarity, every point of every referent of every proposition of science appears to be able to be infinitely other than it is from an infinity of points of view; in the next moment, the letter has fixed each point as it is, and as not being able to be other than it is, save by changing letters, that is field. But the condition of the latter moment is the earlier moment. To manifest that a point of the universe is as it is requires the dice to be thrown in a possible universe wherein this point would be other than it is.<sup>46</sup> To the interval of time during which the dice tumble, before falling, the doctrine has given a name: the emergence of the subject, which is not the thrower (the thrower does not exist), but the dice themselves insofar as they are in suspension. In the vertigo of these mutually exclusive possibilities, bursts finally, at the instant after the fall of the dice, the flash of the impossible — impossible that, once fallen, they bear another number on their upturned face. Here, one sees that the impossible is not disjoined from contingency but constitutes its real kernel.

Furthermore, it is necessary, in order to see this, that one not cease to pass from the earlier to the latter. Yet this is not possible, for one must also not cease to return from the latter to the earlier. In any case, science does not allow such passages; once the letter is fixed, necessity alone remains and imposes the forgetting of the contingency that authorized it. The inopportunity of this return to the contingent is what Lacan called suture. The radicality of this forgetting is what Lacan called foreclosure.<sup>47</sup> Since the subject is what emerges in the step from the earlier moment to the latter moment, suture and foreclosure are necessarily suture and foreclosure of the subject.<sup>48</sup>

To admit that a contingent and empirical proposition qua contingent and empirical is mathematizable is, at the horizon of the letter, to rip apart and sew up again in an entirely new manner, perpetually precarious and incessantly reestablished, the cloth of the passing and the immutable. The complete set of points to which the propositions of science refer is usually named the universe. Because each of these points must be graspable as an oscillation of infinite variation, because just one variation affecting just one of these points

is enough for two possible universes to be distinct, because it is due to this that the number of possible universes is infinite, and because the universe only exists for science by the detour of these possible universes, the universe is necessarily infinite and does not cease to be so, even if the points that constitute it happen to be currently finite. One would almost call this infinity qualitative, rather than quantitative.

It is through contingency alone that this infinity comes to the universe and comes to it from its very interior. Again, this upsets traditional relationships, which tie infinity with ease to an exterior place, transcending the universe. The universe, as an object of science and as a contingent object, is intrinsically infinite.<sup>49</sup>

- The infinity of the universe is the mark of its radical contingency.

It is therefore in the universe and not outside it that one must find the marks of this infinity. The modern thesis par excellence therefore says:

- Finitude does not exist in the universe.

And as nothing exists except in the universe, it also says:

- Finitude does not exist for there is nothing that is outside the universe.

It then follows in particular that the subject is not an outside-universe. How, despite this, it can and must be distinct is the object of the theory of the subject. One can understand why this theory has recourse to the mathematical theory of the interior and the exterior, in other words, to topology. One can understand that all the variants of internal exclusion are retained.<sup>50</sup> These are the necessary consequences of the doctrine of science. One can also understand that the doctrine of science must articulate itself with hypotheses on the subject, independently of any historical correlation. The hypothesis of the subject of science can be disengaged from historicism.

That there is nothing outside the universe proves difficult to imagine. On this basis there is the recurrence, in representations, of figures of the outside-universe — God, man, the ego — to which specific properties are attributed that except them from the universe and constitute the universe into a whole. This property of exception receives diverse names. For a long time philosophy has laid claim to the soul, the instance in man of what allies him to God. But the soul comes from the ancient world and the *episteme*. When the latter cedes to modern science, so must the soul gradually cede its place, hence the arrival of consciousness.

This is the effective point of psychoanalysis. It takes up the problem of the universe again and resolves it thus: the concept of there being a universe, that nothing is excepted from it, not even man, is the concept that says “no” to consciousness; it is the unconscious. The name “unconscious” and its negative constitution is thereby clarified. If consciousness and, more precisely, self-consciousness gather together the privileges of man as an exception to the whole, the negation with which Freud affects consciousness has one function only, to mark these privileges as obsolete. By this movement the soul is also marked. This explains the gashing strikes that Lacan, advancing a step further than Freud, aims against the soul.<sup>51</sup> He merely unfolds one of the effects hidden in the word unconscious. At the same time the soul, the figure of God, insofar as it is the outside-universe par excellence, is marked. One then understands Lacan’s *logion* “God is unconscious”; it means first of all that the name *unconscious* is shorthand for the nonexistence of any outside-universe whatsoever, yet the name of God designates such an outside-universe. The triumph of the modern universe over the Ancients is thus that the unconscious has even prevailed against God.

But this *logion* itself is entirely articulated within modern science and the thematic of the universe. That science requires the universe, that the universe renders impossible any outside-universe, the shorthand for all that in one word alone is *unconscious*, through which, at the same time, the soul and God are *atheitized*. Inversely, a system of propositions that aims at a defined object like the unconscious can only find its accomplishment within modern science and the universe it finds. Rabelais knew it: science without conscience and, for that reason alone, ruin of the soul. Or, to be more exact, science is only accomplished by making itself the science of there being neither consciousness nor soul.<sup>52</sup>

It is strictly true, as Freud affirmed, that psychoanalysis injures the ego and that its kinship with Copernicus, that is with modern science, consists in this. But to understand this one must add that narcissism always amounts to a demand for an exception to be made for oneself. The hypothesis of the unconscious is nothing other than another way of posing the nonexistence of such exceptions; for this very reason the hypothesis is nothing more and nothing less than an affirmation of the universe of science. Not only does the unconscious thus accomplish the program feared by Rabelais, but, more precisely, it reveals its own assumption of the functions of infinity.

Besides, the two words have the same structure: one says *unbewusst* as one says *unendlich*. Infinity is what says “no” to the exception of finitude; the unconscious is what says “no” to the privilege of self-consciousness. Of course, Lacan made endless unfavorable comments about the negative character of the word *unbewusst*. One can recognize the Cartesian doctrine there: infinity is first and positive, the finite is second and is obtained in some manner by a subtrac-

tion; in the same manner, the unconscious explains the conscious and not the reverse. It is shorthand for an affirmation and not for a limitation. Yet the virtues of negation are also discernable.

Moreover, the German language adds certain virtues. The prefix *un-* is not always as flatly negative as the Latin prefix *in-*; it is not always confined to delimiting the complement of the domain signified by the positive. Thus, *Unmensch* is not a nonhuman but an undone man, a monster; *Unkraut* is not an herb (*kraut*), but a weed, a parasite; the *unheimlich* is not the inverse of the familiar, but the familiar parasitized by an anxiety that disperses it.<sup>53</sup> In the same way, one would readily say that in the modern universe, there is no distinction between the domain of the infinite and domain of the finite, but that infinity perpetually parasitizes the finite insofar as everything finite, inasmuch as it is grasped by science, is fundamentally posed as able to be infinitely other than it is. Moreover, this is not so far from Descartes, the theoretician of eternal truths. In a similar manner in psychoanalysis, the unconscious perpetually parasitizes consciousness, thereby manifesting how consciousness can be other than it is, yet not without a cost: it establishes precisely how it cannot be other. The negative prefix is nothing more than the seal of this parasitism.

Ultimately, psychoanalysis is a doctrine of the infinite and contingent universe. Its doctrine of death and sexuality is thus clarified. One cannot be unaware that in the eyes of most, death is the very mark of finitude. But the modern lemma holds that finitude does not exist and psychoanalysis follows that lemma. It even gives a specific version: Insofar as it is a mark of finitude, death is nothing in analysis.

- Death only counts in psychoanalysis insofar as it is a mark of infinity.
- Death is nothing more than the object of a drive.

Such is the foundation of the concept of the death drive. One would conclude that the word *death* is a center of homologies between the finite and the infinite, but also that any philosophy wherein death counts precisely as the inverse motif, as mark of finitude, is incompatible with the possibility of psychoanalysis. This leads to a particular conclusion: if Heidegger's philosophy is of the latter type, if being-for-death is being-for-finitude, then, notwithstanding the epistolary exchanges and private visits, notwithstanding even the weight one must give, as for the doctrine of the cure, to the definition of truth as unveiling, Lacan's doctrine, as doctrine of psychoanalysis, is antinomic to Heidegger's philosophy (and reciprocally).

Psychoanalysis deals with what the moderns call *sexuality*. This is the most well known thing in the world. Yet it is quite legitimate to ask how and why it deals with sexuality. It's useless to state that sexuality exists empirically and it's necessary for some discourse to

speak about it rationally. For it is precisely not trivial that sexuality exists — that a determinable section of reality bears that name. This is so nontrivial that it has become, it seems, intolerable that the question be posed. Foucault experienced how much it costs to be revisionist on this point. Let's even suppose that sexuality exists as it is said to exist: it is not evident that psychoanalysis speaks directly of it. It's well known that cultivated minds — Jung was anything but ignorant — have denied this.

I would advance that sexuality, insofar as psychoanalysis speaks of it, is nothing other than this, the place of infinite contingency in bodies. That there is sexuation rather than not is contingent. That there are two sexes rather than one or several is contingent. That one is of one side or another is contingent. That such and such somatic characteristics are attached to sexuation is contingent. That such and such cultural characteristics are attached to sexuation is contingent. Because it is contingent, it touches infinity.

However, something does not cease to be literalizable. For the names of *man* and *woman* are first of all a manner of being counted in the midst of a set that is both totalizable and open, and to this counting responds a certain type of logic. In "Logical Time and the Assertion of Anticipated Certainty" (1945), Lacan termed it collective logic and proposed a dialectical version, suitable for a quasi-Sartrean dramatization (*No Exit* was not far off); it is found again, in an undramatic and quasi-Russellian formalization, in the formulas of "*L'Etourdit*." It is clear that the question of the limit is the pivot of the latter. It is also clear that this question is tied to the question of infinity. The formulas of sexuation concern an infinite totality insofar as it is affected by the existence or nonexistence of a limit.

The Freudian unconscious as sexual is the unconscious qua being able to be other than it is; it is also the unconscious qua being just as it is and of which, from the very instant that it is just as it is, the letter states that from that point on it cannot be other than it is. But, from another point of view, yet by the same movement, the unconscious is infinite. Therefore, in its place, infinity and the contingent intersect, as is proper. Sexuality is also parasitized by infinity, from the very fact of the death drive, from the fact of *jouissance*, from the fact of contingency again, from the fact of the twists and turns of totality. Such that the reversibility is total, the unconscious is the hold the infinite universe has on the thought of the speaking being, but insofar as it can only be sexual; sexuality is the hold the infinite universe has on the body of the speaking being, but insofar as it can only be unconscious. Thus one finds modern science again. Psychoanalysis can only authorize itself from the doctrine of science on the condition of basing itself on sexuation as phenomenon and on sexuality as the region of reality wherein this phenomenon is graspable. In return, the doctrine of science is only another name for sexuation as a throw of the dice, that is to say, as letter.

*Translated by Oliver Feltham*

1. The selection translated here is the second chapter of Jean-Claude Milner's *L'Oeuvre claire: Lacan, la science, la philosophie* (Paris: Editions du Seuil, 1995).  
[This chapter was originally titled "Le Doctrinal de science," but I have translated Milner's "doctrinal" as "doctrine" throughout. Trans.]
2. Jacques Lacan, "Science and Truth," *Newsletter of the Freudian Field* 3 (1989): 7.
3. *Ibid.*, 23. [References will be given to published English translations of Lacan's works where possible. Readers will find that most of the history of science books referred to exist in English. Trans.]
4. *Ibid.*, 12.
5. I refer to Francois Regnault's book *Dieu est inconscient* (Paris: Navarin, 1985); adding the paper given at the École de la Cause Freudienne, 15 October 1989, "Entre Ferdinand et Leopold." These works render other works, if any exist on this question, unnecessary.
6. One day it will be necessary to explain exactly what manipulations are involved, such that this word "scientism" passes so generally as insulting. It is no more insulting in my eyes than such words as materialism, atheism or irreligion (I pick these at random). Lacan constantly links Freud to scientism (cf., in particular "Science and Truth," 6-7); even if it's a matter of marking a difference from him, it would not seem that Lacan wanted to debase the very one to whom he had proposed a return.
7. The disjunction-conjunction of the ideal of science and the ideal science had been introduced in *Cahiers pour l'analyse*, no. 9. It obviously conforms to the disjunction-conjunction of the ideal ego and the ego ideal, such as Lacan articulated it on the basis of Daniel Lagache's work in his "Remarque sur le rapport de Daniel Lagache 'Psychanalyse et structure de personnalité,'" *Écrits* (Paris: Seuil, 1966), 647-684; see in particular 671-683. From such a structural analogy the mirage effects that the name of science generates can be easily drawn; they exist, they must be dissipated, but science is not reducible to them.
8. One fact among others: in 1911, Freud cosigned a manifesto claiming the creation of a society wherein a positivist philosophy would be developed and diffused. Among the signatories one finds the names of E. Mach, D. Hilbert, F. Klein, and A. Einstein. There is a double indication here: the fact that Freud had given his signature says something about his positions at the moment when he was publishing the third edition of the *Traumdeutung*. He had just founded the International and the *Zentralblatt für Psychoanalyse*; moreover, when one knows the type of filtering that usually accompanies this type of operation, the fact that Freud's name was accepted, even solicited, also gives a measure of his social success in the heart of the positivist milieu in the German language. See on this point Antonia Soulez's important historical introduction to the collection *Manifeste du cercle de Vienne et autres écrits* (Paris: PUF, 1985), 32.
9. Jacques Lacan, *The Four Fundamental Concepts of Psychoanalysis*, trans. Alan Sheridan (London: Penguin, 1978), 151.
10. Summarized for the *École pratique des hautes études* yearbook (1964-5, 249-51) and reproduced on the back of the 1973 edition of *Seminar XI*. [Also found under the title "Comptes rendus d'enseignement, 1964-1968. Les quatre concepts fondamentaux, 1964" in *Ornicar?* 29 (1984): 7-9. Trans.]
11. Kojève himself in "L'origine chrétienne de la science moderne," *L'Aventure de l'esprit* (= *mélanges Alexandre Koyré*), II (Paris: Hermann, 1964), 295-306, comes out with a similar proposition, but it does seem as though Lacan was first since he formulated his hypothesis from 1960 on. Moreover, it is not entirely clear that the two propositions are synonymous. Cf., following note.
12. See Jacques Lacan, *Seminar VII, The Ethics of Psychoanalysis*, trans. Dennis Porter (London: Routledge, 1992), 122: "...modern science, the kind that was born with Galileo, could only have developed out of biblical or Judaic ideology, and not out of ancient philosophy and the Aristotelian tradition." This is where the difference that separates Kojève and Lacan appears; the first attributes to Christianity, and more specifically to the dogma of the Incarnation (Kojève, *ibid.*, 303) a decisive role in the emergence of science; yet this dogma is precisely what separates Christianity from Judaism and justifies the former laying claim to the spirit rather than

the letter. Lacan attributes a decisive role to Judaism and to what, in Christianity, remains of Judaism, that is, precisely, the letter. This means that Lacan's hypothesis (1960) does not match that of Kojève (1964), despite their being almost homologous.

13. See in particular Jacques Lacan, "The Agency of the Letter," in *Écrits: A Selection* (New York: W.W. Norton & Co., 1977), 164-166 and "Science and Truth," 5-7, 13-14.
14. Rene Descartes, "Second Meditation," in *The Philosophical Writings of Descartes*, ed. Cottingham et al. (Cambridge: Cambridge University Press, 1984), vol. II, 19.
15. "Science and Truth," 13.
16. Of course, Lacan's commentary depends largely upon the interpretation of Martial Gueroult (termed *instananéist* in French), but not entirely, and Gueroult could be refuted on this point (cf., Jean-Marie Beyssade, *La philosophie première de Descartes*, [Paris: Flammarion, 1979]) without the Lacanian rewriting being radically invalidated. In the same way, it is not a decisive objection that in the *Meditations* Descartes does not take up again the formulation of the *Discourse on Method* or the *Principles of Philosophy*: "I think: therefore I am," "*cogito: ergo sum*" (cf., Etienne Balibar, "Ego sum, ego existo. Descartes au point d'hérésie," paper given to the *Société française de philosophie*, 22 February, 1992). One could even argue that Lacan's rewriting follows that of the *Meditations* to the letter: "that proposition: *I am....*"
17. No less than, moreover, the coherency of the texts. For there is an apparent contradiction between the letter of Freud and the letter of Lacan: the first posing that the dreamwork, in what is specific to it, and insofar as it is the major form of the unconscious, does not think (*The Interpretation of Dreams*, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud* [London: Hogarth Press and The Institute of Psychoanalysis, 1961] vol. V, 507); the second posing that the dreamwork, in what is specific to it, and insofar as the dream is one form of the unconscious, is shorthand for the statement: "it thinks." Add to that the contradiction that opposes Freud to himself, sometimes affirming that the dream is a form of thought, and sometimes that it does not think (Ibid., 505). However, everything is clear. The thought that Freud refuses to attribute to the unconscious is qualified

thought; the thought that he does attribute to it and by which Lacan defines it is thought without qualities — for which the *cogito* is necessary.

For Freud, refusing thought to the dreamwork is to refuse it the *modalities* of thought: calculation and judgment ("the dreamwork does not think or calculate; in a more general manner, it does not judge" [Ibid., 507]). That is, everything that makes a *qualitative* difference between opposed poles. It is legitimate to look at both the text of the *Traumdeutung* and that of the *Meditations*; Descartes holds that a thing that thinks is a thing that doubts, conceives, affirms and denies, wants and does not want, imagines and feels; essential to this analysis is its differential character, not solely between modalities, but inside them in turn, between their poles (affirm/deny and so on). If the dreamwork is what Freud says it is, then, according to this analysis, it is not a thing that thinks. If, on the other hand, one holds that the dream is a form of thought, then it must be allowed that there is thought, even at the point where the difference between doubt and certitude, affirmation and negation, wanting and refusing, imagination and sensation, is problematic if not suspended. Freud, still restrained in the *Traumdeutung*, (the final state of which goes back to 1911) was explicit in the article on negation (1925): there is thought, even though no polarity, and on this basis no quality, has emerged. It is quite conceivable that Freud had ambitions that this thought without qualities could be ruled solely by the laws of quantity (energetics). We will see that the signifier proposes nonqualitative laws that, even so, will not be quantitative [The reference here is to the following chapter of *L'Oeuvre claire*. Trans.]

From a more general point of view, it is an open question whether thought without qualities, as it is constituted here, is also thought without properties. It could be that it has "minimal" properties. There again, the theory of the signifier proposes a specific response to the question.

18. Helmholtz from 1855 had explicitly raised the question of a thought without self-consciousness ("*ein denken ohne Selbstbewusstsein*"); cf., Helmholtz, "Über das Sehen des Menschen," *Vorträge und Reden*, 1896, II, 110. The historical articulation between scientism and the unconscious is thus revealed. To be more precise, in introducing a theory of the unconscious, Freud does not detach himself from scientism, rather he accomplishes its program.

19. "Science and Truth," 5.
20. *Ibid.*, 4.
21. *Ibid.*, 5. [Translation modified.]
22. *Ibid.*, 4-5.
23. "Radiophonie," *Scilicet* 2/3 (Paris: Le Seuil, 1970): 75. See also *Television* (New York: W.W. Norton & Company, 1990), 36.
24. [I have translated *littérale*, *littérialisé* and *littérialisable* throughout as *literal*, *literalized* and *literalizable*, but the reader should keep in mind that in French, and especially in this context, *littéral* signifies that which is of the letter in the sense of the letters or algebraic symbols used in the formal notation of mathematics. Trans.]
25. *Il Saggiatore* §6; cited in the edition of C. Chauvire, *L'Essaieur de Galilée* (Paris: Annales Litter. Franche-Comte, 1980), 141. [Translation modified.]
26. Pietro Redondi, *Galilée hérétique* (Paris: Gallimard, 1985), 69-75. [Pietro Redondi, *Galileo Heretic* (Princeton N.J.: Princeton University Press, 1987)]. This author takes Galileo to be an atomist; on this point he is opposed to Koyré, who made a Platonist out of Galileo (Alexandre Koyré, *Études galiléennes* [Paris: Hermann, 1939], III, 267-281). It is true that the two interpretations are not necessarily irreconcilable (cf., F. Hallyn, *Le Sens des formes* [Geneva: Droz, 1994], 296-97).
27. I must, to be exact, underline that the articulation of precision and literality is not explicit in Koyré's work. I am leaving aside, despite its historical importance, the Baconian reference, wherein the literal paradigm remains pertinent but referred to cryptography rather than to philology. Among the memorable encounters between philology and modern science, one must cite the correspondence that R. Bentley (scholarly editor of Horace) maintained with Newton (cf., Alexandre Koyré, *Newtonian Studies* [London: Chapman & Hall, 1965]). On the distinction between "experimental" and "instrumental," cf., Gerard Simon, *Le Regard, L'Être et l'apparence dans l'optique de l'Antiquité* (Paris: Le Seuil, 1988), 201. According to Simon, ancient optics was experimental; it was not and could not be instrumental.
28. In fact, the situation is of course more complicated: is there an exact synonymy between science and the theory of technique, between technique and applied science? One could discuss such a matter. In a similar manner, one could discuss whether the same thing is found if one goes from "right to left," from science to technique, or is going from "left to right," from technique to science. At this very moment it is obvious, under the pressure of fear and hope, that in tying research in biology to the discovery of vaccines, science is made into a pure and simple theorized technique. Science is then free as one wants it to be with regard to the object it theorizes, yet having that particular object: not Nature, but nature treated by technique or, in this case, not configurations of molecules, but these configurations insofar as they are modifiable by voluntary procedures for the ends of medical treatment. The controversy has become furious around AIDS. A growing number of researchers affirm that the vaccine will only be found by not searching for it. This would imply that funds go elsewhere than to research for the vaccine. This is orthodox Koyréism. But those with AIDS find it difficult to agree.
29. See the two articles that close the *Études d'histoire de la pensée philosophique*, "Les philosophes et la machine" and "Du monde de l'à peu près à l'univers de la précision" (Paris: A. Colin, 1961); re-ed. (Paris: Gallimard, 1971). The two texts had been originally published in *Critique* in 1948.
30. Hence, on this basis, the eminent status of astronomy, optics and harmony. Cf., Gerard Simon, *Le Regard, L'Être et l'apparence*, 182-3. In opposition to them, following Eugenio Garin, *Moyen Age et Renaissance* (Paris: Gallimard, 1969), one would put learned astrology, which pretended precisely to grasp the accidents of a destiny in what it has that is most individual, by means of the configurations of the eternal stars and calculations with numbers. Hence the scandal that it provoked among certain ancient philosophers (summarized in the discourse of Favorinus, reported by Aulu-Gelle, *Nuits Attiques*, XIV, 1) and the insistence upon its "foreign" (Chaldean) character.
31. Cf., H. Scholz, "Die Axiomatik der Alten," article of 1930, reprinted in *Mathesis universalis* (Darmstadt, 1969), 27-44.

32. Plato, *Timaeus*, 47b in *Plato: The Collected Dialogues*, eds. Edith Hamilton and Huntington Cairns (Princeton N.J.: Princeton University Press, 1961), 1175. It is interesting that H. Scholz, in his brief *Esquisse d'une histoire de la logique* (Paris: Aubier, 1968), 47 — the first German edition dates from 1931 — cites this passage and considers that it still determines today the greatness of logic as a discipline. Here one is at the antipodes of logical positivism, but also of modern science. One should recall that Scholz was not only a logician and philosopher but also a theologian. In a more general sense, one should remark the degree to which attention paid to mathematical logic can lead certain philosophers to efface the Galilean break; reciprocally, it is known that Koyré had hardly any esteem for mathematical logic (witness his *Épiménide le menteur*, [Paris: Hermann, 1947]).
33. Eugenio Garin (see Garin, *Moyen Age et Renaissance*, 121-150) goes so far as to affirm that the combination of the mathematical and the empirical, characteristic of modern science, was rendered possible by the return of learned astrology, which became accessible again from the 12th century on, flourishing in the 15th and 16th centuries. For all that, magic, as action on the world ruled by *theorizable* principles, shows the first elements of the modern relation that unites science, as theory of technique, to technique, as practice and application of science.
34. Moreover, an empirical question remains open: are Koyré's propositions concerning ancient science incontestable? The specialists debate on this point even if, on the whole, the essence of his presentation is maintained by serious authors; cf., Thomas S. Kuhn, "Tradition mathématique et tradition expérimentale dans les sciences physiques," *La Tension essentielle* (Paris: Gallimard, 1990), 69-110 [*The Essential Tension: Selected Studies in Scientific Tradition and Change* (Chicago: University of Chicago Press, 1977)]; and Gerard Simon, *Le Regard, L'Être et l'apparence*.
35. Thus were the discourses held by Archimedes and Lucretius according to Michel Serres, *La Naissance de physique dans le texte de Lucrèce* (Paris: Minuit, 1977). Independently of Serres work, Archimedes is often supposed to illustrate such a combination of the mathematical and the empirical, not without technical applications. Cf., among others, Geoffrey Lloyd, *La science grecque après Aristote* (Paris: La Découverte, 1990), 54-62, 112-115 [G.E.R. Lloyd, *Greek Science after Aristotle* (New York: Norton, 1973)]. Moreover, what is known of Archimedes doctrinal positions confirms that he was himself a disciple of the fundamental positions of the ancient *episteme*. Cf., his incomplete work entitled *Method* and addressed to Eratosthene (fragment cited in Lloyd, *Greek Science*, 59-60).
36. ["*qu'elle éclaire les consciences.*" Due to the varied meanings of conscience, this phrase could also be translated as "enlighten consciousness." Trans.]
37. This is the question that Lacan poses in his *Seminar VII*. However he has not turned this exoteric speech into writing. This proves that he considered that it had not progressed as far as required for knowledge, which is confirmed by a reading of the Seminar. It is equally confirmed by the absence of any construction of a relation between what is advanced concerning ethics and what, later, is advanced under the title of an ethics of speaking well (see, for example, *Television*). Little is therefore known of Lacanian ethics. All that is known is that it would be, in principle, legitimate.
- The question of morality in an infinite, mathematized and precise universe is, of course, that posed by Kant. On this point I refer to Guy Lardreau, *La Veracité* (Lagrasse: Verdier, 1993), (cf., notably the second book, first section — 130-275 — and the close examination that the Lacanian intervention is subjected to, 159-60 and n.16) and to Jules Vuillemin, *L'Intuitionnisme kantien* (Paris: Vrin, 1994) *passim*. On the general question of ethics, in a universe where mathematics is the science of Being and not solely the language of science, one would read Alain Badiou, and singularly *L'Éthique* (Paris: Hatier, 1993). [Alain Badiou, *Ethics* (London: Verso, forthcoming)].
38. Cf., Antonio Gramsci, *Oeuvres Choisies* (Paris: Éditions sociales, 1959), 19.
39. Sigmund Freud, Lecture XVIII, *Introductory Lectures on Psychoanalysis 1916-1917*, in *SE*, vol.XVI, 285.
40. Copernicus, writes Freud, showed that "the earth, far from being the centre of the universe, only forms an insignificant part of the cosmic system" (*ibid.*). Lacan, on Koyré's authority (*La Révolution astronomique* [Paris: Hermann, 1960]) held such a presentation to be "mythic"; in his eyes, the revolutionary step had been

accomplished not by Copernicus, but by Kepler and it did not concern geocentrism, but the substitution of the ellipse for the circle. Cf., "Subversion of the subject and the dialectic of desire in the Freudian unconscious," in *Écrits: A Selection*, 295-6; "Radiophonie," *Scilicet* 2/3, 73; Jacques Lacan, *Seminar XX, Encore: On Feminine Sexuality, the Limits of Love and Knowledge*, trans. Bruce Fink (New York: W.W. Norton & Co., 1998), 40-3. Whatever may be so, one can discern in Lacan a concern for historical precision that actually sets him at a distance from historicism, the latter proceeding by means of great masses.

On a Galilean rejection of the *Gestalt*, in an entirely different domain, cf., Jean-Claude Milner, *Introduction à une science du langage* (Paris: Le Seuil, 1989), 632-633.

If it is one's persuasion to quibble with Freud, one could also reproach him with having cited Wallace next to Darwin. For on this precise point of humanity's self-love, Wallace was apparently extremely prudent (cf., for example, Stephen Jay Gould, "Natural selection and the human spirit: Darwin versus Wallace," in *The Panda's Thumb* [London: Penguin Books, 1980]).

41. Cf., *Seminar XVII* in its entirety (*L'Envers de la psychanalyse* [Paris: Le Seuil, 1991]); "Radiophonie," *Scilicet* 2/3, 96-99; the short speech (*Allocution*) given at the closure of the congress of the *École freudienne de Paris*, 19 April, 1970, *ibid.*, 391-99; *Television*, *passim*; *Seminar XX*, 14-17.
42. *Seminar XX*, 14-15.
43. "Allocution," *Scilicet* 2/3, 395
44. In this regard, one would consult Kuhn's work, and in particular his collection *The Essential Tension*, which is more explicit on the confrontation with Popper than *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962).
45. *Seminar VII*, 122.
46. One finds in Saul Kripke's work an articulation of the letter, of possible universes and a throw of the dice. Cf., in particular, *La logique des noms propres* (Paris: Editions de Minuit, 1982), 167-8 [*Naming and Necessity* (Cambridge MA: Harvard University Press, 1972)]. Evidently, this is to ignore the horror that a comparison with Lacan or Mallarmé might inspire in Kripke, supposing that he would even know what was at stake.
47. "Science and Truth," 22.
48. In other words, the doctrine of the letter is based on a logic of two periods. The reader can verify that Lacan's formula  $S1(S1(S1(S1\emptyset S2)))$  — found in *Seminar XX*, 143 — is solely the literalization of this logic.
49. Which infinity is at stake? In the last resort, the literalizable infinity: that of the mathematicians, that is, of Cantor. But he came late. At the origin of Galilean science, the paradox would have it that at the very instant when it declared itself mathematized and referred the universe to infinity, there were no mathematics of infinity. It was upon this basis of delay that the oscillation between the positive infinity and the negative indefinite was structured, whose first signal was Descartes.
50. "Science and Truth," 10.
51. Cf., *Television*, 6.
52. Cf., "To be the most propitious language for scientific discourse, mathematics is the science without conscience which our good Rabelais promised...the gay science rejoices in presuming the death of the soul." In "L'Étourdit," *Scilicet* 4 (Paris: Seuil, 1973), 9. [Readers should note here that in French *conscience* signifies both moral conscience and consciousness. Trans.]
53. Walter Benjamin reports this comment by Leiris (without the editor's being able to determine whether it was Michel Leiris or Pierre Leiris involved): "the word 'familiar' would, in Baudelaire's work, be full of mystery and anxiety" (*Charles Baudelaire* [Paris: Payot, 1982], 236). To not be separated from "anywhere outside the world..." and from the non-familiar as refuge.