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THE HERMENEUTICAL STATUS OF THE HISTORY OF SCIENCE:
THE VIEWS OF HÉLÈNE METZGER (AN APERCU)

INTRODUCTION

Hermeneutics is the philosophical discipline whose business is to investigate and define the conditions of the possibility of interpreting texts. Its basic question is: given a text—does it have an objective meaning? Is there a “something” out there—namely the meaning of the text—which exists, so to say, in itself independently of any possible interpreters, and relative to which any interpretation will be either true or false? Or is such an assumption unwarranted and is a text nothing but strings of letters, words or sentences where the meaning is what I, you or anyone may read into it? Hermeneutics, in short, is the epistemology of interpretative human sciences.

The history of science is, of course, a discipline engaged in the interpretation of texts. One would therefore expect the hermeneutic questions which are specific to the history of science to have drawn the attention both of historians of science and of philosophers working in hermeneutics. This, surprisingly, has not been the case: we have nothing coming close to a hermeneutic theory of the history of science, nor does there seem to be any awareness that such a theory is a desideratum.

Some fifty years ago, however, a tentative step in this direction was made by the French historian of chemistry, Hélène Metzger. In a series of articles published during the 1930's she critically examined the notion of a valid and objective interpretation within the history of science. Her conclusions were rather sceptical: a text or “event” belonging to the history of science, she maintained, may always receive divergent interpretations from different historians. Metzger's ideas have unfortunately remained entirely neglected. In this paper I want to suggest that, read from a present-day vantage-point, we may recognise in them the first and only attempt to reflect hermeneutically upon the history of science. Moreover, Metzger's views bear a striking similarity to the

hermeneutic theory which Hans-Georg Gadamer presented in his epoch-making *Wahrheit und Methode* of 1960, and indeed may be considered as an extension of that general theory to the special case of the history of science.

In the first part of this paper, I will sketch the positions of classical, then of Gadamerian, hermeneutics on the question of the objectivity of interpretation. In the second part, I will give an outline of Metzger's views and try to show how, without ever using the word "hermeneutics", she yet succeeded in drawing the contours of an epistemology of the history of science.

I. Philosophical Hermeneutics: from Schleiermacher and Dilthey to Gadamer

The nineteenth century saw the emergence of philosophical hermeneutics and, with it, of the question whether the interpretation of a text may retrieve an objectively existing meaning.¹ The founding father of hermeneutics as a distinct domain of philosophical inquiry is Friedrich Schleiermacher (1768–1834). Against the traditional idea that an interpretation seeks to discover a hidden truth supposedly shut up in the text (e.g. the revealed truth of the Scriptures), Schleiermacher postulated that the business of interpretation is the understanding of an alien thought. According to him, the interpretation of a text does not lead to the understanding of an external state of affairs, but rather to the understanding of the thought of an individual author. Therefore, the understanding of a text is, according to him, a "divinatory process, a placing of oneself within the mind of the author [...] a recreation of the creative act". The interpreter penetrates the alien thought with the help of feeling, allowing him to achieve "an immediate sympathetic [...] understanding".²

The first to raise the epistemological problem of hermeneutics was Wilhelm Dilthey (1833–1911). He assigned himself the task of complementing Kant's critique of pure reason with a critique of historical reason. His aim, Gadamer writes, "was always to justify the knowledge of that which is historically conditioned as the achievement of objective science, despite the fact of the knower's being conditioned himself".³ If there is to be an historical science, Dilthey held, it must be objective. He followed Schleiermacher in postulating that the interpreter can and must use "sympathy" to transpose himself into an author and his work. The gap separating the historian from his subject—differences of epoch, of culture, of presuppositions—can then be bridged: the alien thought becomes familiar, and the interpreter can re-think the ideas of the studied author exactly as he himself had thought them. In this sense, an

¹ For what follows cf.: H. – G. Gadamer, *Wahrheit und Methode*, Tübingen: Mohr, 3rd edition, 1972, 162 ff. English translation: *Truth and Method*, ed. by G. Baden and J. Communing, London: Sheed and Ward–New York: Seabury Press, 1975, 153 ff.

² *Ibid.*, 175, 179 (English: 164, 168).

³ *Ibid.*, 218 (English: 204).

objectively true interpretation of a text is possible and its attainment is the object of any interpretation.⁴

This entire philosophical tradition—which to a large extent simply explicates the immediate intuitions of any reader and interpreter—was radically challenged in Gadamer's consequential book *Truth and Method*. Gadamer's hermeneutics ensued from applying reflections to problems of the methodology and the epistemology of the human sciences, in the phenomenological tradition of Husserl and Heidegger.⁵ Husserl's very notion of *Lebenswelt* (life-world), being essentially historical, grounds the idea that not only the human sciences, but even natural science, is marked by an absolute historicity and cannot be entirely objectivised. Heidegger, more radically, holds that not only human consciousness, but the human *Dasein* (there-being) itself should be considered in its historicity. For Heidegger, temporality is the "horizon of Being" and it is on this basis that the notions of truth and history should be interpreted. This metaphysics entails a notion of understanding which radically differs from Dilthey's. Indeed, for Heidegger, the temporality of human existence means that the very structure of human *Dasein* is one of projection. Gadamer regards this as implying that the structure of the process of interpretation is characterised by projection too. Concretely, this means that the historical ties of the interpreter—his or her links with the culture, the tradition, etc.—are necessarily involved in understanding itself: the interpreter always approaches a text with a projection (an anticipation) of its meaning, with prejudices depending on his or her own temporality and historicity.

Interpretation, on this view, inherently has a circular structure: it depends on what Heidegger calls the hermeneutic circle. It is the meaning with which Heidegger invested this notion which implies the radical break with the classical hermeneutical tradition:

Heidegger's description and existential grounding of the hermeneutic circle constitutes [...] a decisive turning point. True, the hermeneutic theory of the nineteenth century often spoke of the circular structures of understanding, but always within the framework of a formal relation of the part and the whole, or its subjective reflex—the intuitive anticipation of the whole and its subsequent articulation in the single elements. According to this theory, the circular movement of understanding runs backwards and forwards along the text and ceases when the text has become perfectly understood. This theory of understanding culminated logically in Schleiermacher's theory of the divinatory act, by means of which one places oneself entirely within the writer's mind and from there resolves all that is strange and estranging in the text. Heidegger, by contrast, describes the circle in such a way that the understanding of the text remains permanently determined by the anticipatory movement of fore-understanding. The circle of the whole and the part is not dissolved in perfect understanding but, on the contrary, is most fully realized.⁶

Understanding, then, is a continuous and permanent movement in the hermeneutic circle: to Heidegger and Gadamer the temporal distance

⁴ *Ibid.*, 218 (English: 204 ff.). Cf. also: J. Habermas, *Knowledge and Human Interests*, trans. by J. J. Shapiro, London: Heinemann, 1972, 179 ff.

⁵ For what follows cf. Gadamer, *op. cit.*, 229–256 (English: 214–240).

⁶ *Ibid.*, 277 (English: 261).

separating an interpreter from a text is not, as in historicism, a hiatus which must be overcome, but rather a constitutive condition of interpretation as such. This conception has profound implications: "the discovery of the true meaning of a text or a work of art is never finished; it is in fact an infinite process. Not only are the sources of error continually eliminated [...] but there emerge continually new sources of understanding which reveal unsuspected relationships of meaning."⁷ All interpretations, coming from diverse cultural or historical horizons, are—if only consistent—equally legitimate. "There is no other 'objectivity' here but the confirmation that a fore-conception can obtain through its being worked out."⁸ In a word: "It is enough to say that if we understand at all, we understand differently."⁹

Let us pause here for a moment to consider a model of the relationship between reality and knowledge in Gadamer's epistemology. The model I suggest in a hologram: this is a photographic plate on which the observer perceives a three-dimensional image. Only that this image is a different one for every observer, depending on his or her spatial position in relation to the plate. Now the perception of every (normal) observer is adequate, given his or her position; and yet it is subjective in the sense that it depends on the priorly chosen position. It evidently makes no sense here to ask what the true perception of the plate is; in fact the number of possible adequate perceptions is infinite.

There is a close parallelism, it seems to me, between the perception of a hologram and the interpretation of a text as this process is construed by Gadamer. In both cases we may point at something physical which exists out there, independently of us—a photographic plate in one case, strings of letters or words in the other. Yet this object can never be perceived/interpreted identically by different persons: just as the hologram appears differently from different vantage-points, so also the meaning of a text depends on the interpreter's "horizon of Being". A text and a hologram, then, in as much as we consider them *qua* objects of interpretation or perception (and not, that is, as physical objects) are therefore beyond the grasp of objective cognition. But just what precisely do we mean here by "objective?" In the context of Gadamer's hermeneutics, "subjective" can only mean "position-dependent", so that in fact all interpretations are held to be subjective. Correlatively, the objective interpretation of a text would be the unique interpretation toward which all possible interpreters, each setting out from his or her own particular existential "position", would converge, given an infinitely long time. The interpreters would then respond identically or equivalently to all questions pertaining to the text, and indeed their responses would be identical or equivalent to those of the original author himself. But Gadamer's analysis, just as the hologram model, shows that the series of possible interpretations of a text cannot

⁷ *Ibid.*, 282 (English: 265 f.).

⁸ *Ibid.*, 252 (English: 237).

⁹ *Ibid.*, 280 (English: 264).

converge: interpretations constitutively depend on the interpreter's "position" and new "positions" are bound to emerge as long as history has not come to a close. Although the hermeneutical enterprise may occasionally result in a local consensus, this consensus will be duly challenged by other interpreters or another age. The "objective meaning" of a text, in short, is an unwarranted hypostatized notion; rather, whatever we perceive in a text depends on our vantage-point, on the tradition into which we were born, so that, strictly, "if we at all understand, we understand differently".

This conclusion is of far-reaching significance. As Gadamer himself notes, his hermeneutics marks a break with the founding principle of Western philosophy from the Enlightenment onward, namely with the opposition to prejudices, with the idea that true knowledge presupposes the elimination of preconceived ideas. This principle in fact underlies both modern natural science and historical science. Yet, Gadamer maintains, "the overcoming of all prejudices, this global demand of the Enlightenment, will itself prove to be a prejudice, the removal of which opens the way to an appropriate understanding of our finitude, which dominates not only our being, but also of our historical consciousness."¹⁰

II. *Hélène Metzger's Hermeneutics*

Metzger's hermeneutic reflections are not directly linked to the German tradition of *Geisteswissenschaften*; indeed, she never mentions Schleiermacher's or Dilthey's names. It is an entirely different path that led her from the practice of the history of science to ideas which, as will be seen, are rather close to those of Gadamer. Underlying Metzger's position is a premise drawn from the philosophy of natural science, namely what we call today the Duhem-Quine underdetermination thesis.¹¹ To put it in Metzger's own terms: confronting a body of evidence, the scientist is continually in a situation of "fluctuation" or "wavering", because the available evidence can always be subsumed under an indetermined number of different theories. In constructing a theory, therefore, the scientist necessarily makes choices which depend on non-empirical elements too. This in turn assigns to the historian of science the following task: he or she will not be concerned only with retracing the history of the "discovery" of facts, but rather will endeavour to reveal precisely the non-empirical ingredients which went into the construction of a theory. His or her business will be to retrace the process of the formation of scientific ideas, to seize—in Metzger's terms—"a thought in its nascent state". To achieve this aim, Metzger urges, the

¹⁰ *Ibid.*, 260 (English: 244). See also: Paul Ricoeur, "Hermeneutics and the Criticism of Ideologies", in: P. Ricoeur, *Hermeneutics and the Human Sciences*, ed. and trans. by J. B. Thompson, Cambridge: Cambridge UP—Paris: Editions de la Maison des Sciences de l'Homme, 1981, 63–110.

¹¹ For what follows cf. notably H. Metzger, "L'historien des sciences, doit-il se faire le contemporain des savants dont il parle", *Archeion*, 15 (1933), 34–44.

historian of science must make him or herself "the contemporary of the scientists he is studying". He or she must come up with an "active sympathy" allowing him or her to "penetrate past creative thought".

So far, Metzger's views on the goal and method of the history of science obviously come very close to the tenets of classical hermeneutics. Just as Schleiermacher and Dilthey, she refers to an "active sympathy" by which the historian will make himself or herself the contemporary of the studied author and grasp his or her thoughts. Yet Metzger is in total opposition to Schleiermacher and Dilthey when it comes to her epistemological conception of interpretation, that is to her view of whether any interpretation may be objective. Her point of departure is again the underdetermination thesis. From a logical point of view, she maintains, the historian who is facing a given set of texts, is in the same situation of indeterminacy as a scientist facing a given set of natural facts. Therefore, she maintains, "just as the scientist can give diverse interpretations to the facts he has chosen to study, so also the historian of science can give diverse interpretations to the texts he has chosen to study for the construction he is projecting".¹² Indeed, "the history (of science), just as scientific theory itself, is a construction of the mind".¹³ It follows that any interpretation of a text necessarily involves "a personal, subjective, element which can impossibly be eliminated completely". One should not, she urges, aspire or pretend "to attain a phantom objectivity which is situated outside this world no less than outside science".¹⁴ The fundamental conclusion thus follows: The analysis establishes that, rigorously speaking, the subjective cannot be separated from the objective.¹⁵

These few utterances bespeak, I believe an original and significant philosophy of the historiography of science. Metzger's position obviously differs in nothing from Gadamer's dictum that "It is enough to say that if we understand at all, we understand differently". Hélène Metzger's ideas, to be sure, are not founded on an ontology of the *Dasein*, and they are infinitely less elaborated than Gadamer's. Yet, they share Gadamer's fundamental break with the tradition of the Enlightenment: both Metzger and Gadamer are opposed to the tradition which identifies knowledge with objectivity and which requires the elimination of all preconceived ideas. To the Kantian principle: "Have the courage to make use of your own understanding", Hélène Metzger and Gadamer retort together that understanding and experience are not sufficient to produce knowledge: whether you like it or not, they maintain, the contribution of an *a priori* accepted tradition is a necessary condition for the very possibility of knowledge.

What does this amount to concretely? What is the "horizon" which

¹² Metzger, "La méthode philosophique dans l'histoire des sciences," *Archeion*, 19 (1937), 204-216, on p. 211.

¹³ Metzger, "La signification de l'histoire de la pensée scientifique", *Scientia*, 57 (1935), 449-453, on p. 452.

¹⁴ Metzger, "L'historien des sciences...", 35 f.

¹⁵ "La signification...", 452.

determines the perspective of the historian of science? Metzger's answer is this: according to her, it is the historian's epistemology, his or her vision of how knowledge is produced, on which will depend his or her interpretation of the historical "facts" or of individual texts. Among all the possible interpretations, he or she will choose the one which squares with his or her views of the nature of knowledge. For instance, "the facts as interpreted by the positivist doctrine", Metzger writes, "lend support to the positivists".¹⁶ Thus, the enterprise of the history of science is circular and falls under the hermeneutic circle: for the study of the history of science should contribute toward a theory of knowledge, but in fact that theory already underlies the historical investigation itself. As long as humanity produces new visions of itself and of knowledge, the history of science will remain an open enterprise and new interpretations of it will continually be produced.

Hélène Metzger, let me finally note, was not entirely happy with these relativist conclusions to which her reasoning uncompromisingly led her. Her leanings were decidedly realist and she certainly thought of her own historical work as contributing toward the attainment of truth. She therefore explicitly rejected the idea that the historian of science is only "the soldier of a philosophical theory", and that the history of science is but "a mirror in which the historian sees his own spiritual image".¹⁷ She thus tried to steer clear of both positivism and relativism but, it must be admitted, did not really succeed in this task.

CONCLUSION

Hélène Metzger, I suggest, has fully recognized the circular relation of epistemology and history of science, realizing that the history of science, like any other interpretative discipline, underlies the hermeneutic circle. This, let me add in passing, is all the more remarkable because Gadamer himself considers the history of science as a special case to which his general theory does not apply. Now, since Koyré and Kuhn wrote, a non-positivist epistemology of natural science has become almost taken for granted. It is therefore all the more striking that no philosopher or historian of science has ever tried to extend the non-positivist theory of knowledge so as to apply to his or her own knowledge. Having made this decisive step is Metzger's great and original achievement: she thereby laid the foundation for a hermeneutic theory of the history of science. This theory is as radical as Gadamer's: Metzger rejects the "objectivist illusion", the notion that you can read "what is written there" and write the history of science "as it really was". Rather, she underscores that the historian's horizon, his epistemological commitments inform his historical interpretations. Long before Gadamer, Metzger discovered for the history of science the hermeneutic circle.¹⁸

¹⁶ *Ibid.*, 451.

¹⁷ Metzger, "Tribunal de l'histoire et théorie de la connaissance scientifique," *Archeion*, 17 (1935), 1—14, on p. 5; "L'historien...", 35.

¹⁸ H. Metzger's papers are now available in: H. Metzger, *La Méthode Philosophique en histoire des sciences*, Paris, Fayard, 1987.