

Algebra and Allegory: Nonclassical Epistemology, Quantum Theory, and the Work of Paul de Man

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The “nonclassical epistemology” of my title refers to the epistemology defined by a particular configuration, to be assembled in this essay, of the concepts of materiality, phenomenality, formalization, and singularity. These concepts would be naturally associated with de Man’s work by his readers, as would be the concept of allegory, which is, I shall argue, correlative to the epistemology and the conceptual configuration in question.¹ The appeal to “algebra” is somewhat more esoteric. It is, however, far from out of place, especially in the context of the question of formalization and given the relationships among de Man’s work, nonclassical epistemology and quantum theory, which I shall also discuss here.

It would indeed be difficult to circumvent de Man’s work in considering these subjects or such figures as Kant, Kleist, and Shelley, to whom a significant portion of this essay will be devoted.² In particular, nonclassical epistemology has fundamental connections to aesthetic theory, beginning (at least) with Kant and Schiller, and to the practice of literature and art, such as of Kleist, Shelley, and other Romantic authors, or, as T. J. Clark’s “Phenomenality and Materiality in Cézanne” (in this volume) suggests, that of Cézanne. These connections are central to de Man’s later works, specifically *Aesthetic Ideology*, where Kant’s third *Critique*, *The Critique of Judgment*, and aesthetics and (the critique of) aesthetic ideology, are given a special place.³ The history of the particular aesthetic-ideological (mis)reading of the third *Critique* in question in his work is seen by de Man as beginning with and still governed by Schiller’s encounter with Kant. By contrast, the work of, especially, Kleist and of some among his Romantic contemporaries appears

to mark for de Man the opening of a different aesthetic theory. This opening also leads to a very different type of reading of the third *Critique* (which may be closer to the spirit, or indeed the letter, of the work) by de Man and such authors as Jacques Derrida, Jean-François Lyotard, Jean-Luc Nancy, and several others. This difference is, I argue, defined by the set of, in terms of this essay, nonclassical concepts—in particular, “formalization,” “materiality,” “phenomenality,” and “singularity”—to which I now turn. I begin with formalization and what I call radical or nonclassical formalization.

Paradoxically, or so it may appear, the *radical* character of *radical* formalization, and of its *formal* laws, is defined by the fact that they allow for, and indeed entail, that which is irreducibly unformalizable, irreducibly lawless; that is, whereas the “algebra” of any formalization may be seen as defined by a set of (specified or implicit) laws, here the configuration or ensemble of configurations of elements governed by these laws entails that which cannot be comprehended by these laws or by law in general, and furthermore, that which cannot be conceived by any means that are or even will ever be available to us. Accordingly, the irreducibly lawless in question is not something that is excluded from the domain or system governed by formalization, is not an absolute other of the system, but is instead irreducibly linked to it.⁴ This is in part why radical formalization may appear paradoxical, and it does lead to an epistemology that, while technically free of contradiction, is complex and difficult (and, for some, impossible) to accept.

The particular version of radical formalization that I shall now introduce appears to be epistemologically the most radical yet available. But then it may also be the only available (or even possible) model of the configuration of the formalizable and unformalizable just defined. Accordingly, from this point on, by either radical or nonclassical formalization I refer to this version. The complexities and implications of the concept are many and far-reaching. The configuration itself defining it, or constituting the point of departure for it, is, however, simple to formulate: the representation of the “collective” may, in certain circumstances, be subject to formalization and law; that of the “individual” is irreducibly nonformalizable and lawless; and the overall efficacy of both types of effects, formalizable and nonformalizable, is inaccessible by any conceivable means.⁵

This formulation does not merely mean that formalization or law in this case does not apply in certain exceptional situations. Instead, *every individual* entity (element, case, event, and so forth) that belongs

to the law-governed ("organized") collectivities in question is in itself not subject to the law involved, or to law in general. More accurately, one should speak of *what is "seen" (is phenomenal) or represented as such an entity or such a collectivity*. The qualification is important to the relationships between "materiality" and "phenomenality" in non-classical epistemology. I shall consider these relationships in detail later. It may, however, be useful to offer a preliminary sketch here, beginning with this qualification.

Although law here does apply only at the level of certain collective, rather than individual, effects, both types of *effects*, lawful and lawless, are *manifest*, materially or phenomenally. Accordingly, when involved, material strata of such effects may, at least, be treated as available to phenomenalization, representation, conceptualization, and so forth, for example, for the purposes of formalization. By contrast, the ultimate *efficacy* of these effects cannot, in principle, be so treated (even though, as will be seen, this efficacy may, at a certain level, be considered as material). In other words, this efficacy is irreducibly inaccessible not only to formalization and law—to "algebra"—but to any representation, phenomenalization, and so forth. Nor, ultimately, can we think of it in terms of any properties or qualities that, while inaccessible, would define it. It is irreducibly inaccessible by any means that are or, conceivably, will ever be available to us; any conception of it is, and may always be, impossible, ultimately even that of the impossibility of conceiving it. As will be seen, it would not be possible to account for the coexistence of both types of effects (collectively lawful and individually lawless) in question otherwise. The presence of both types of effects is logically possible if and only if we cannot conceive of their efficacy at all: the peculiar character of the effects makes one infer the even more peculiar character of the efficacy. It follows that all conceivable terms are provisional, suspect, and ultimately inadequate in describing this efficacy, including *efficacy* or *ultimate*, both quite prominent here. It is worth, however, registering more specifically some of the terms that need to be suspended.

First, although this efficacy manifests itself through the effects of both types, it cannot be thought of in terms of an underlying (hidden) governing wholeness, either indivisible or "atomic," so as to be correlated with manifest (lawless) effects, while subject to an underlying coherent architecture that is not manifest itself. Either type of understanding would (classically) reduce the (nonclassical) "counterposition" of the manifest effects of collective lawfulness, on the one hand, and of

individual lawlessness, on the other. This efficacy is neither single in governing all of its effects (individual and collective), nor multiple so as to allow one to assign an unambiguously separate efficacy to each lawless individual effect.

Second, an efficacy of that type cannot be seen in terms of independent properties, relations, or laws, which, while unavailable, would define a certain material entity that would exist in itself and by itself, while, in certain circumstances, giving rise to the (available) effects in question. Instead, it must be seen as reciprocal with and indeed indivisible from its effects: it can never be, in practice and in principle, conceived as isolated, separate from them. Nor, however, can it be seen as fully "continuous" with these effects either. All individuality or, conversely, collectivity in question appears (in either sense) only within the manifest strata of such indivisible configurations. These configurations, however, also contain the inaccessible strata that cannot be isolated and hence cannot *appear*, either as accessible or even as "inaccessible." It is irreducibly inaccessible and yet, indeed as a corollary, equally irreducibly indissociable from that (part of the overall configuration) which is accessible—is subject to phenomenal representation, conception, knowledge, and so forth. One might say that, while the inaccessible in question is indeed *inaccessible* absolutely, it cannot be seen as something that is the *absolutely* inaccessible. It follows that nonclassical epistemology does not imply that nothing exists that, in certain circumstances, gives rise to the effects in question. Instead the point is that this efficacy or the corresponding "materiality" (which also designates something that exists when we are not there to observe it) is inconceivable in any terms that are or perhaps will ever be available to us. Naturally, "existence" or "nonexistence" are among these terms, along with the possibility or impossibility to "conceive" of it, or "possibility" or "impossibility," or "it" and "is," to begin with.

As will be seen, these conditions are the conditions of both quantum epistemology and allegory in de Man. It is true that de Man often associated allegory (or irony) with discontinuity (in earlier work in juxtaposition to the continuity of symbol). We may, however, more properly think of this relation as neither continuous nor discontinuous, or in terms of any conceivable combination of both concepts, or, again, in any given terms, as just outlined. De Man's emphasis on discontinuity of allegory appears strategically to point in this direction, away from the continuity of the symbol or of classical thought in general, for example, aesthetic ideology. Both continuity and discontinuity are re-

tained at the level of "effects," and the effects of discontinuity are indeed more crucial to allegory (or irony).

In the circumstances in question, then, formalization and laws apply only to certain collectivities, but in general not to individual elements composing such collectivities. (I am not saying that they fully describe the latter, since, as follows from the preceding discussion, how the "workings" of the efficacy just considered make lawless individual elements "conspire" to assemble into lawful collectivities is ultimately inconceivable.) Accordingly, the (lawless) individual effects in question can no longer be seen as a part of a whole, so both are comprehended by the same law, or by a correlated set of laws. This possibility defines classical systems and classical formalization, and I use the term *classical* accordingly. A classical formalization may and often must apply within nonclassical formalization. Within classical limits, however, nothing is, *in principle*, lawless, even though, *in practice*, laws may be difficult or, as concerns the ultimate laws, impossible to apply. In the latter case, an underlying lawfulness, however unknown or even unknowable, would be presupposed. By contrast, nonclassical, radical formalization not only figures as lawless the manifest individuality of certain effects involved, but rigorously suspends even the possibility of ascribing any structure, law-governed or not, or properties to the efficacy of all manifest effects, lawful or lawless.

Under these conditions, individuality becomes not only uniqueness but also singularity. Indeed, "singularity" may be defined by this property of *manifest* lawlessness in relation to a given law, or to law in general, perhaps especially when this property arises in a point-like, "singular," fashion—spatial or geometrical; algebraic or analytical (a "singular" point of a function or a "singular" solution of an equation in mathematics); temporal or historical; and so forth. To some degree, one might see the inaccessible efficacy of the singular (or indeed all) effects in question as itself "singular," as Rodolphe Gasché appears to do in his reading of de Man in *The Wild Card of Reading*.⁶ Historically, however, the term *singularity* has been associated with the (manifest) point-like configurations or with a relation to the inaccessible, and it is, I would argue, in de Man as well. In addition, the efficacy of such singular events in de Man is indivisible from its effects (in accordance with the analysis just given). Accordingly, it cannot be conceived of as an independent entity severed from them and, hence, as isolated from them either materially or phenomenologically, as the appeal to "singularity" in describing it might suggest. By contrast the singular effects in

question can be isolated phenomenologically, although, in view of the same reciprocity, ultimately not materially or efficaciously. Indeed, they are phenomenologically defined by this "isolation" from their (ultimate) history and (both materially and phenomenologically) from each other.⁷

Given the features just outlined, however, nonclassical formalization and nonclassical epistemology are indeed *singularly* radical epistemologically or, as the case may be, antiepistemologically, as well as anti-ontologically. The view just outlined equally disallows any ultimate ontology and any ultimate epistemology—any possibility of knowing or conceiving how that which is at stake in it is ultimately structured, or is ultimately possible. For example, it would not be possible to predict which information will become available at a later point. Hence, unknowability is not certain either, any more than knowability, except, again, at the ultimate (efficacious) level, where the unknowable becomes irreducible. At this ultimate level, we may adopt Gasché's formulation, "any [ultimate] knowledge, even that of the impossibility of knowledge, is . . . [indeed] strictly prohibited" (*The Wild Card of Reading* 182)—but only at this level, hence I insert "ultimate" here. One would be reluctant to say, especially in the context of de Man's work, that nonclassical epistemology disallows materiality, although at the ultimate level no given concept of matter can apply any more than any other concept. One might say instead that one needs the kind of conceptual architecture here discussed in order to argue for the necessity of a certain form of "materiality," in particular as "materiality" without an ultimate epistemology and an ultimate ontology.⁸ De Man specifically associates this radical materiality with both Nietzsche and Derrida (161–62), and earlier Kant and Hegel, although such thinkers as Bataille, Blanchot, and Lacan are pertinent here. De Man also associates this materiality with the "textuality" of Kant's and, by implication, other radical texts. He speaks of "the simultaneous [with idealism] activity, in his [Kant's] text, of a materialism much more radical than what can be conveyed by such terms as 'realism' or 'empiricism'" (*AI* 121). I shall return to de Man's understanding of textuality later.

The qualifier "ultimate," which recurs throughout this essay, is crucial. For it is not that no account or knowledge is possible, which is not an uncommon misunderstanding of nonclassical theories, specifically de Man's or certain interpretations (such as that here considered) of quantum mechanics. On the contrary, rigorous and comprehensive ac-

counts of the situations in question only become possible once the epistemological circumstances in question are themselves taken into account. Specifically, at the level of "effects," classical ontology, epistemology, and phenomenology become possible and necessary. Indeed, these are the effects that make us conclude that their emergence entails something that is ultimately inaccessible to us in that it may not tolerate an attribution of any properties, terms, conceptions, and so forth, including, ultimately, any conception of the ultimate. For, at the very least, the *sum* of these effects is unaccountable for classically, even when they are subject to classical knowledge, as at a certain level they must be, since they would not *appear* to us otherwise. Nonclassical knowledge does not offer us a better knowledge of the irreducibly inaccessible in question in it than classical knowledge does. But it does allow us to infer this inaccessible from its effects and to account for these effects themselves, retaining the irreducibly inaccessible as part of this account.

The overall epistemological situation may, again, appear paradoxical and (ideologically?) unacceptable to some, in the case of quantum physics, Einstein, among them. It is, however, consistently defined and free of any logical contradiction, as Einstein indeed admitted in the case of quantum mechanics in his debate with Bohr. Do such configurations actually exist, or need to be constructed in certain situations? Do we need radical formalization to account for anything, even if it is conceivable and technically free of contradiction? Yes, such configurations do exist, or need to be constructed, both in literature (where they may be more expected as "inventions" of poets) and life (where one may expect them less). They appear to be necessary in facing the "dead nature" as well, at the level of its ultimate constituents, as we understand these constituents now, that is, in terms of quantum physics.

Indeed, in order to make "phenomenality" more rigorously applicable in nonclassical circumstances, we may, following Bohr, define "phenomenon" in terms of the reciprocal or indivisible relationships between the effects in question and their nonclassical efficacy, and, accordingly, recast these relationships in phenomenological terms. A "phenomenon" is a representation of a specific (material or already phenomenal) configuration where such relationships are found.

In quantum mechanics, such configurations are defined by the physical interaction between quantum objects and measuring instruments, while manifesting, in a trace-like manner, the effects of this interaction only in the latter. In contrast with classical physics, the role of measuring

instruments is irreducible in quantum physics.⁹ The behavior of measuring instruments is described by means of classical physics and in terms of classical epistemology, since classical physics may be treated as epistemologically classical, in particular causal and realist. In these arrangements there “appear” traces (say, on silver bromide photographic plates) of quantum objects, such as elementary particles (or what is so called by convention)—photons, electrons, and so forth. Such traces emerge as the effects of the interaction (itself quantum) between the latter and the measuring instruments. Both the physics of measuring instruments and of the traces in question are available to us, while quantum objects themselves cannot be ascribed physical (or perhaps any) properties, for example, such conventional “quantum” properties as discontinuity, or of being “objects” in any given sense.

The mathematical formalism (“algebra”) of quantum mechanics applies to some of these effects, specifically to certain collective effects, found within one type of phenomena, and does not apply to other such effects, specifically certain individual effects, found within the other type of phenomena. Both types of phenomena can never be combined, or be seen as derived from a single efficacious situation, however hidden. Nor can we have both types of effects within a single phenomenon. If we are to “see” each effect of a formalized (lawful) collectivity as lawless, this collectivity has to be (re)phenomenalized so as to be divested of both collectivity and law—either through a single phenomenal collectivity of lawless individual (singular) effects or through a collectivity of singular individual phenomena. In other words, the lawful collectivity and lawless individuality in quantum mechanics, or in any radical formalization, require different phenomenizations, even when dealing with the “same” set of effects. Accordingly, both the sets of effects and the efficacy of such *phenomena* will be different by virtue of the different material or mental agencies of phenomenization involved. This is in part why this efficacy can never be seen as an entity isolated from its effects but instead as that which is irreducibly reciprocal with and indivisible from its effects. It may of course be stratified as to the “location” of some of its strata, while retaining the radically inaccessible character of each such stratum.

These circumstances manifest themselves most famously in the appearance of either the ordered or patterned wavelike effects (which pertain only to collectivities of such traces) in some circumstances and the particle-like effects (in general not subject to law in quantum mechanics) in other circumstances. The presence of both types of effects is

essential to and defining for quantum physics, even though (and because) it is impossible to ever combine the two types of phenomena together or derive them from a single common configuration. The circumstances of their emergence and hence the phenomena that correspond to them are always mutually exclusive or, in Bohr's terms, complementary. The latter fact is primarily responsible for Bohr's choice of the term *complementarity* for his overall interpretation of quantum mechanics.

"Quantum objects" or, more accurately, that which makes us speak of such entities can be assigned an independent existence as something that may be assumed as existing when we are not there to observe it. That "something," however, cannot be assigned any conceivable independent physical (or other) properties, for example, those defining (classical) particles or waves. Nor can it be isolated from their interaction (itself quantum) with measuring instruments so as to establish their independent impact and hence ascertain their independent properties on the basis of the effects of this interaction. Classical physics fails to describe the sum total of these effects and can be shown to be rigorously incapable of doing so: the possibility of a classical-like description would be in conflict with the experimental data of quantum physics. Quantum theory is able to account for both types of effects and for their complementarity. It does so, however, in a nonrealist and noncausal way. As I said, quantum theory (at least in Bohr's interpretation) does not describe the properties and behavior of quantum objects themselves but only (in a statistical fashion) certain phenomenal effects of their (again, quantum) interaction with measuring instruments. This is why, in contrast to classical physics, in quantum theory this interaction can never be neglected or compensated for, while entailing the irreducibly inaccessible efficacy of the effects constituting the data of quantum physics. "Quantum objects," detected in any given experiment, are part of this efficacy. In general, however, the latter involves other agencies, such as measuring instruments, perhaps in turn ultimately quantum (in view of the ultimate quantum constitution of all material objects).

Bohr's interpretation of quantum mechanics, as just outlined, is, I argue, generalizable to all nonclassical epistemology, and the nonclassical phenomenology it entails, in particular those found in de Man's work. We must, of course, rigorously adhere to the specificity of the workings of the general scheme here presented in different situations, even when we can leave aside technical aspects of modern mathematics

and science, including in their connections to each other, such as, in the case of quantum mechanics, making experimentally well-confirmable statistical numerical predictions, or sometimes even exact numerical predictions concerning certain information, say, the position or the momentum of a particle, but never both together. (Hence, from the classical viewpoint, such information is always partial. The laws of quantum mechanics disallow us to assume a wholeness, however unknowable, behind this information, hence making it complete, as complete as any information can, in principle, be obtained in any experiment performed on quantum objects, or, again, what we infer as such from this information.) In nonscientific nonclassical situations, the nonclassical effects would emerge through such entities as (material) signifying structures of the text (de Man's "materiality of the signifier"); material texture (in either sense), such as that of Cézanne's paintings; the materiality of historical occurrences or events; or certain "mental" configurations of the same joint (classical-nonclassical) type. (At bottom, [material] materiality may be irreducible even in the last case, even though, given the epistemology in question, there is no ultimate bottom line here, and the concept itself of materiality is affected accordingly.) Also, we now deal (or so it appears) with "macroscopic" human subjects (in either sense) rather than the ultimate (microscopic) constituents of matter (seen as material) of quantum physics. The epistemology of quantum mechanics and nonscientific epistemology here considered do, however, (re)converge at certain points, including, from both sides, on the latter point. In particular, they share the supplementary (Derrida) or allegorical (de Man) production of phenomenalization and indeed, as Bohr stressed, idealization from "technomaterial" marks. This term may be applied to such marks with "writing" in Derrida's sense in mind. In quantum mechanics, or already relativity, this application would involve certain parts of the (material) technology of measuring instruments, where the scientific data in question in these theories appear in the form of certain material marks or traces. The situation may be rigorously shown to correspond to Derrida's "economy" of trace, supplement, writing, and so forth.¹⁰

More generally, in all situations here in question, the key nonclassical features are brought about by the irreducible role of "technology" (in the broad sense of *technē*) in them. From this perspective, we may define as "nonclassical" situations those in which the role of technology is irreducible. The technology of measurement in quantum physics, or of *technē* of "writing" in Derrida's sense, and the *technē* of "linguistic

materiality" in de Man's sense (which I shall discuss later), make the situations in question nonclassical. By contrast, in "classical" situations *technē* is, at least in principle, reducible, as, for example, in the case of measurement in classical physics, since measuring instruments play only an auxiliary role there so as to allow us to speak of the independent properties and behavior of classical objects. One can view analogously certain forms of reading or textual processing and production in general, insofar as the role of "writing" may be neglected there. Thus, classical textuality is not only possible but is necessary within certain limits. By definition, we depend on it even in nonclassical situations insofar as (as in the case of measuring instruments in quantum physics) nonclassical effects appear through classical textual processing.

These connections are not coincidental. Although physics played the most decisive role, the ideas of Bohr and other key figures in the history of quantum physics may be traced to nonclassical aspects of the nineteenth-century philosophy, literature and the arts, and then to modernism. Conversely, the relevance of, among other mathematical and scientific fields, quantum mechanics to de Man's work is hardly in doubt. Nor is it surprising in view of the significance of new science for modern intellectual history, even leaving aside that de Man was educated in science and engineering. Relevant elaborations are found throughout de Man's works, if often reconceptualized or allegorized so as to function independently of their scientific frames of reference. "Pascal's Allegory of Persuasion" offers more direct connections to mathematics and science. In particular, de Man's analysis there may be linked both to mathematical formalization and to its role in physics. As will be seen, both subjects are significant for *Aesthetic Ideology* and related work. The connections to physics, from optics to quantum mechanics, could be traced throughout de Man's work. The interplay of optical tropes of "reflection" (admittedly a customary trope in such discussions), "translucence," "transparence," and so forth in de Man's essay "The Rhetoric of Temporality" may be read as metaphorically shuttling between geometrical (linear), wave, and quantum theories of light. "Quantum-mechanical" themes emerge in most of de Man's "optical" tropology and in his epistemological arguments. The connections between both is a more complex question, since nonclassical epistemology does not always govern the architecture of optical tropes, although de Man's essay "Shelley Disfigured" suggests more direct connections of that type. It may, however, be argued that most radical and most significant forms of "blindness" and "insight" in de Man are

"quantum-mechanical," even when they relate to the blindness and insight of reading. The latter is not surprising, given the technological and material character of textuality as considered by de Man, and the fact that for de Man epistemology is indissociable from reading. A massive deployment of "optics" is found in "Shelley Disfigured," where it is also especially justified, given Shelley's own deployment of optical theories in *The Triumph of Life* and elsewhere.¹¹ The essay also contains a number of formulations of a general epistemological, rather than specifically "optical," nature (although in this case they can be brought together) that are parallel and perhaps indebted to quantum epistemology. Thus, de Man writes at the outset, virtually defining his analysis: "The status of all these where's and what's and how's and why's is at stake, as well as the system that links these interrogative pronouns, on the one hand, to questions of definition and of temporal situation and, on the other, to questions of shape and figure."¹² This is strikingly reminiscent of and is epistemologically parallel to Bohr's inaugural definition of complementarity (1927): "The very nature of quantum theory thus forces us to regard the space-time coordination and the claim of causality, the union of which characterizes the classical theories, as complementary but exclusive features of the description, symbolizing the idealization of observation and definition respectively" (PWNB 2:54–55).

More interesting at this point, however, is not the influence of modern mathematics and science on de Man's and related work, but the conceptual reciprocity between both domains and the deployment of that work in our approaches to, at least, epistemological, conceptual, and aesthetic aspects of mathematics and science. I shall here consider two such examples—the allegorical character of quantum mechanics, and the relationships between formalization in science and the radical (materialist) formalism that de Man *finds* in the Kantian sublime.

Complementary phenomena are common in and peculiar to quantum physics. Those related to "wave" and "particle" effects and their complementarity are the most famous. Arguably the most significant, however, are those related to the measurement of physical variables, such as position and momentum, or time and energy, correlative to the complementarity of "the space-time coordination and the claim of causality," mentioned earlier. According to Bohr, such variables and the overall quantum-theoretical description can only be applied to quantum objects themselves provisionally or, in his terms, *symbolically*. For, as we have seen, even though we often (by convention) speak of

such variables in relation to quantum objects, in actuality we can only measure the corresponding physical quantities (either position or momentum, or time and energy, but never both together) pertaining to the classically described measuring arrangements; that is, we measure classical physical variables pertaining to certain parts of such arrangements, rather than to the quantum objects themselves, but describe the relationships between the mathematical variables corresponding to these physical variables in terms of quantum-mechanical, rather than classical, formalism. Classical physics can only describe each such physical variable in a corresponding experimental arrangement, but never both together, since there is no experimental arrangement that would make it possible. This situation can be numerically represented by Heisenberg's uncertainty relations, which, thus, become mathematical correlatives of this situation.¹³ The rigorous impossibility of accounting for this situation in terms of classical physics makes it necessary (a) to infer the existence of quantum objects and (b) to introduce a different, quantum, theory, including a different mathematical formalism or "algebra," which provides such an account. It does so, however, in a physically and epistemologically nonclassical way.

Now, I would argue that the situation is rigorously allegorical in de Man's sense, thus linking "algebra" and "allegory" within physics itself. The formulation from "Pascal's Allegory of Persuasion" is especially fitting here: "the difficulty of allegory is rather that this emphatic clarity of representation does not stand in the service of something that can be represented" (AI 51).¹⁴ Indeed, this clarity may be said to stand in the service of that which cannot be represented by any means. Thus, classical physics can offer us only incomplete and partial—and specifically complementary—allegories of the quantum world. Nothing appears to be able to offer us more. Accordingly, Bohr's "symbolic" means "allegorical" in de Man's sense, for this "symbolism" in fact rigorously prohibits the classical epistemological features of "symbol" (as analyzed by de Man), in particular any possibility of deriving "allegorical" representations from any original or primordial unity. The formalization of collectivities in quantum mechanics does not offer a classical (or classical-physics-like) description of quantum behavior or, again, allow one to claim any primordial unity behind it. It only statistically predicts the emergence of certain collective patterns, but never of individual events or effects. If the mathematical formalism, algebra (no quotation marks are necessary), of quantum theory represents anything at all it represents this nonclassical and (with respect to using

conventional concepts of classical physics) allegorical situation.¹⁵ Insofar as one can apply this formalism to quantum objects themselves, either by correlating it in some ways with classical physics and its mathematical formalism or otherwise, it can only be done allegorically.

We can have a further and deeper sense of these connections between quantum mechanics and de Man's work, and the reciprocal theoretical possibilities they offer, by considering the question of the mathematical formalization of physics. Even beyond "Pascal's Allegory of Persuasion" (which would require a separate treatment), the subject of mathematical formalization is significant in Man's work, specifically in his analysis of Kant's sublime. It has, of course, a major significance for Kant's own analysis of the sublime (or of the beautiful) and in his work in general. In de Man's reading it acquires a special prominence not in Kant's treatment of the mathematical sublime, but as Kant's analysis enters the question of what Andrzej Warminski, in "As the Poets Do It: On the Material Sublime," aptly terms "the material sublime." In this case we (must) "*find*" the sublime, if we regard, for example, the ocean, "as poets do, merely by what the appearance to the eye shows [or points] [*was der Augenschein zeigt*]." (I modify de Man's translation [AI 80]; a stable, or any, translation may not be possible, only a reading, as Warminski's essay suggests as well.) According to de Man, "Kant's [phenomenal?] architectonic world is not a metamorphosis of a fluid [material?] world into *the solidity of stone*, nor is his *building* a trope or a symbol that substitutes for the actual entities" (AI 82; emphasis added). "Flat" and "the third person" as it is, this architectonic world may be seen as a certain configuration of phenomenal "effects" produced by a reciprocal and yet inaccessible efficacy. "The only word that comes to mind," de Man says, "is that of a *material vision*" (AI 82).

The nature of this materiality and of the formalism that, de Man argues, accompanies it is complex. Indeed, de Man immediately adds: "but how this materiality is then to be understood in linguistic terms is not, as yet, clearly intelligible." This understanding will bring with it further complications of the concepts of the sublime, materiality, and formalism (or formalization), and a more radical dislocation of aesthetic ideology than those entailed by the material vision, *qua vision*, as here described by Kant and de Man—or at least *as* this vision has been described so far. This vision may entail more radical limits in this respect, which become more apparent through an understanding of its materiality "in linguistic [or/as textual] terms." The analytical and tex-

inaccessible efficacy of all visible effects involved. The allegorical algebra enabled by this vision or un-vision would be quite enough in itself. We may call such a (nonvisualizable) sublime or unsublime the algebraic or the algebraic-allegorical sublime, as opposed to the geometrical or the geometrical-symbolic sublime. Indeed, the symbol may be argued to always remain geometrical, as is suggested by Coleridge's description of it in terms of translucent geometrical optics—a key starting point of de Man's investigation opened by "The Rhetoric of Temporality" (BI 192). This algebraic-allegorical sublime may correspond to the sense Kleist made of Kant's work, from *The Critique of Pure Reason* on. This sense also reflects subtle gradations of proximities and differences, between perhaps ultimately "algebraic" (and "quantum-mechanical") reason and the ultimately "geometrical" judgment of the sublime in Kant, even if in a Kleist-like reading.

Alternatively, the quantum-mechanical "vision" just outlined and the quantum-mechanical formalization overall may indicate the space of differences, infinitesimal and radical (and sometimes simultaneously both), between Kleist's aesthetic, *literary* formalization and Kant's *philosophical* formalization of the vision of the sublime, which self-deconstructs into Kleist's. Either way, here, too, in order to find this more radical formalization, we might want to do what poets do, now also as philosophers. The literary, now defined in accordance with, or indeed as, radical formalization, is part and parcel of this understanding, or reasoning, also in Kant's sense of "reason." The scheme just outlined must, again, be seen as fundamentally correlative to the irreducibility of *technē*—the technology of measuring instruments, the technology of writing, or of reading, or of painting, such as Cézanne's. I would argue that the interaction of materiality and phenomenality, individuality and collectivity, singularity and regularity, in late Cézanne, considered by T. J. Clark in this volume conforms and perhaps for the first time introduces this "quantum-mechanical" vision or un-vision in painting. This may indeed be "the [impossible] truth of painting" for Cézanne, the truth of painting as ultimately algebra, not geometry.²⁴ This—that is, always working with and through *technē* and the irreducibility of *technē*—is what poets and quantum theorists with a poetic bent do, and how they ultimately find everything, for example, the sublime or quantum mechanics.

I would now like to discuss further features of radical formalization, first, the question of randomness and chance. It is famously invoked at the end of "Shelley Disfigured," where de Man writes: "The

tual pressure put upon Kant's text both by Kant himself and by de Man becomes extraordinary indeed, since we have already come quite far. For, as de Man writes:

The critique of the aesthetic ends up, in Kant, in a formal *materialism* that runs counter to all values and characteristics associated with aesthetic experience, including the aesthetic experience of the beautiful and of the sublime as described by Kant and Hegel themselves. The tradition of their interpretation, as it appears from near contemporaries such as Schiller on, has seen only this one, figural, and, if you will, "romantic" aspect of their theories of imagination, and has entirely overlooked what we call the material aspect. Neither has it understood the place and the function of *formalization* in this intricate process. (AI 83; emphasis added)

It is not altogether clear whether the term *formalization* here refers only to the radical formalism in question at the moment; or whether it is seen more generally so as to encompass other forms of formalization, specifically those analogous to radical formalization; or whether, especially once understood in linguistic terms, the radical formalism of the material vision, qua vision, of the sublime entails something like radical formalization. It is also not altogether clear whether "ends up" refers to this particular moment of Kant's and de Man's analysis or anticipates de Man's final elaborations in the essay. The question, then, is whether this linguistic understanding of the materiality involved is "deconstructive" or even (in Kant's text) "self-deconstructive" in some sense (i.e., whether Kant's text inscribes this understanding against its own grain); or whether this understanding is an actual outcome of Kant's analytical rigor; or whether a yet more complex space of reading is at stake. It would be difficult and perhaps impossible to give a fully determined answer. For one thing, what poets "see" or "do" in finding the (material) sublime, how we understand this materiality in linguistic terms or how poets do so (possibly at the moment of this vision), and the movements of Kant's argument appear to be already irreducibly entangled in Kant's text. Both the material vision in question and its understanding in linguistic terms (and by implication radical formalization) may be brought together by the kind of reading of Kant and de Man offered by Warminski in "As the Poets Do It." According to Warminski's reading, what "poets" in fact *find* in finding the sublime is the radical linguistic materiality that we find in Kleist and, via Kleist, in the end of de Man's essay. Even so, certain differences between the

materiality (and phenomenality) of the sublime and those involved in radical formalization may remain, especially as concerns what does and does not appear to the eye. The radically inaccessible in question in radical formalization cannot be "seen" in any conceivable sense. It would also be difficult to disregard the fact that Kant parallels, if not identifies, "[to find the sublime] as the poets do it" and "what the appearance to the eye shows." These complexities do not diminish the radical implications of de Man's analysis, and may be a virtue insofar as it offers new epistemological and aesthetic possibilities, even "insurmountable possibilities."

It appears that, in all circumstances, in order to reach the limits of materiality here at stake we need Kleist's aesthetic formalization, as radical *formalization*, through which de Man develops the linguistic understanding in question, rather than only Kant's radical *formalism*, as it emerges prior to this understanding. In particular, the latter corresponds to and, in a certain sense, is the mathematical formalism of classical physics, specifically, "the mathematization or geometrization of pure optics" (AI 83), rather than to the radical *formalization* of quantum physics, as is the aesthetic formalization of Kleist or de Man's linguistic understanding.¹⁶ We recall that de Man closes "Kant's Materialism" by suggesting that Kant's radical formalism (*formalism*, in question at the moment, rather than radical *formalization*) may not ultimately be "formalistic enough" (AI 128). He may well have had Kleist's aesthetic formalization in mind, which, along with de Man's essay of Kleist itself, is invoked at the end of "Phenomenality and Materiality in Kant," and something similar is intimated in the end of "Kant's Materialism" (AI 89–90; 128).

The question of the mathematization of science, here specifically optics, enters at the point when the (purely) formal character of the (purely) material vision is ascertained. De Man writes:

The sea [of the material sublime] is called [by Kant] a mirror, not because it is supposed to reflect anything, but to stress a flatness devoid of any suggestion of depth. In the same way and to the same extent that this vision is purely material, devoid of any reflexive or intellectual complication, it is also purely formal, devoid of any semantic depth and reducible to the formal mathematization or geometrization of pure optics. (AI 83)

Beyond the more immediate reference to vision—here, moreover, a vision of the sea as "mirror"—the role of optics has, as I said, a special place in de Man's thought, extending to the connections to quantum

treat these marks, even their collectivities, purely “formally” (without “form”) rather than in any way configuratively. In particular, we divest them of their classical and hence configurable appearance (in either sense), even though they do form configurations, or what can be so seen in certain circumstances—say, wavelike patterns, or a trace of a particle in a cloud chamber. Even within a single phenomenon, where these marks appear, they must be divested of the possibility of being explained in classical terms and hence of their manifest classical configurativity. For example, they should not be seen either as points resulting from classically conceived collisions between “particles” and the screen or as forming a classically conceived wave pattern. Neither “picture” corresponds to what in fact occurs. At this stage, even the radical (Derridean) trace-like character of these marks is suspended, although this character will have to be given to these data in order to explain them in quantum-theoretical terms.

This suspension is necessary, and the vision that results is possible, for the following reasons. As we have seen, the mathematical formalism of quantum mechanics does not formalize or otherwise describe the configurations, individual or collective, of these traces as such, or for that matter any material physical process in the way classical physics would. Instead, it enables statistical (and statistically very precise) predictions concerning certain collective, even if not individual, configurations of material marks in certain circumstances.¹⁹ Insofar as one can interpret the situation and specifically the quantum-mechanical mathematical formalism as applicable to quantum objects themselves or their interactions with measuring instruments in terms of conventional physical (or indeed any) concepts, such an interpretation can only be allegorical in de Man’s sense. First, this “allegory” does not at this level describe any physical configuration or process. Second, it does not (in contrast to a symbol, for example) relate the partial (complementary) descriptions involved to, or allow one to presuppose even in principle, any classical wholeness that would reduce their complementary character. Thus, in order for a theoretical formalization and interpretation of quantum physics to take place, these marks, while “visible,” have to be divested of any form of mathematical and specifically geometrical representation. Classical physics is largely defined by the possibility of such representation or, more broadly, phenomenalization.²⁰ In quantum mechanics, neither is possible any longer. This impossibility is reflected in the trace-like or written (in Derrida’s sense) character of the marks in question and the allegorical

physics, the ultimate optics, at least for now. The latter, however, allows for no mathematization and particularly geometrization of its ultimate "objects." Instead it entails radical formalization and, with it, both a materiality that is available to phenomenalization and (limited) formalization, and a materiality that is unavailable to any formalization, representation, phenomenalization, and so forth, and hence to any vision. The latter could still be seen as "material," insofar as any conceivable term could apply. It cannot, however, any longer be seen as formal, mathematically or otherwise. It may only form an (irreducibly invisible) part of a formal vision.

By contrast, the mathematization or geometrization of pure classical optics (whether linear or wave optics, or classical particle optics) conforms to the formalization of classical physics. It is an obvious example of what Galileo called and was first to develop as, in his terms, the mathematical (and specifically geometrical) sciences of nature. One might argue that the latter are made possible (I am not saying fully constituted or governed) by a kind of material and formal vision analogous to the one de Man invokes at this juncture of his reading. This vision enables one to treat the properties of material bodies (or of space and time) as experimentally measurable and theoretically mathematizable quantities, which are abstracted from or divested of the other properties that material bodies possess (the procedure sometimes known as the Galilean "reduction").¹⁷ It is crucial, of course, that, although this vision *enables* such a treatment, it is not identical to this (technical) treatment. With this qualification in mind, one might say that the vision of the sublime (or of the beautiful) in Kant is fundamentally mathematical-scientific, for the moment in the sense of classical science—at least short of understanding this vision in linguistic terms.

One might also reverse the point and argue that the formal and specifically mathematical character of the mathematical sciences of nature is fundamentally aesthetic in de Man's radical sense. It is true that most of the disciplinary ("technical") practice of physics, or mathematics, bypasses the experience in question. It cannot be seen as aesthetic in Kant's sense, to begin with, because, to put it in Kant's terms, it involves the concept of understanding. Indeed, one of Kant's deep insights was that understanding can never be purely formal, including any conventionally "formalized," such as mathematical, understanding. The (pure) formalness can only be achieved in aesthetic judgment and perhaps, ultimately, only in the purely material and formal vision of the material sublime. The latter we can only find, as poets (or, at certain

points, some physicists and mathematicians) do, by regarding certain objects by "merely [purely geometrically?] what the appearance to the eye [sight] shows," even if it is the mind's eye. If one is a poet like Kleist, Hölderlin, or Shelley, the linguistic understanding of, and now within, this vision can become even more epistemologically radical or nonclassical in the present sense. For the moment, within classical limits, whatever may primarily define the technical practice of mathematics or mathematized science, such as modern physics, they (or perhaps any understanding) would not be possible without this "founding" aesthetic moment or vision. This vision creates the formal "objects" of mathematics, or the mathematized objects of physics, or at a certain level of all theoretical thinking, or even of all understanding, as Kant appears to intimate as well.¹⁸ This "mathematical" or "quasi-mathematical" vision "precedes" (logically rather than ontologically) all mathematical or mathematized physics and even mathematics itself, as we understand them now. Neither would be possible without this "vision," even if the "contemplation" involved may no longer play much, if any, of a role once such objects are put into disciplinary circulation and are subjected to a technical treatment. Although this moment or vision does not occur all the time, it need not have occurred only once either—as a single, absolutely founding moment (a problematic and ultimately untenable conception) of mathematization either in mathematics itself or in the mathematical sciences. It is, I would argue, this aspect or moment (prior to understanding) of "mathematization or geometrization of pure optics," given that de Man sees it as devoid of "any . . . intellectual complication."

It is true that this purely formal and material "vision" in mathematics or specifically geometry (where mathematical objects can be "contemplated" more visually) is not always sublime. It may be with respect to some mathematical, or mathematized, physical "objects," or presumed objects, such as mathematical infinities (now seen in terms of the material rather than mathematical sublime, as Kant defines it). Even when failing the sublime, however, the classical mathematical vision in question is aesthetic, if perhaps not quite a vision of poets, and, specifically, purely formal. Indeed, as de Man observes in the passage in question, the same aspects define "the aesthetic experience of the beautiful" as well. It is, thus, not altogether certain whether de Man, or Kant, associates the vision of poets with any material and formal vision of the type here described, as would appear more immediately, or more strictly the vision of the (material) sublime. The linguistic under-

Triumph of Life warns us that *nothing*, whether deed, word, thought or text, ever happens in relation, positive or negative, to anything that preceded, follows, or exists elsewhere, but only as a random event whose power, like the power of death, is due to the randomness of its occurrence" (*The Rhetoric of Romanticism* 122; emphasis added). This formulation reflects the *nonclassical* concept of chance as correlative to the irreducible lawlessness—singularity—of individual entities, such as random and discontinuous ("quantum") events here invoked. This concept of chance links the thought of earlier figures, such as Kleist and Shelley, to the twentieth-century thinking, mathematical-scientific (specifically in quantum physics) or philosophical, to which de Man's and related nonclassical concepts of chance belong. It is worth, however, recalling the *classical* understanding of chance before defining the *nonclassical* understanding of it.

Classically, chance or, more accurately, the appearance of chance is seen as arising from our insufficient (and perhaps, in practice, unavailable) knowledge of a total configuration of forces and, hence, of understanding a lawful necessity always postulated behind a lawless chance event. If this configuration becomes available, or if it could be made available in principle (it may, again, not ever be available in practice), the chance character of the event would disappear. Chance would reveal itself to be a product of the play of forces that is, in principle, calculable by man, or at least God. In other words, in practice, we have only partially available, incomplete information about chance events, which are nonetheless determined, in principle, by a complete architecture of necessity behind them. This architecture itself may or may not be seen as ever accessible in full, or even partial, measure. The *presupposition* of its existence is, however, essential for and defines the classical view as both causal and realist, for this assumption of the ultimate causal architecture underlying randomness and chance brings classical causality and classical reality together. For example, if we cannot exactly—rather than only in terms of probabilities—predict how the dice will fall, or fully explain why a particular outcome has occurred, it is because the sum total of all the factors responsible is in practice unavailable to us (from a particular movement of a human, or perhaps divine, hand to minute irregularities in the material makeup of the dice themselves). In principle, however, a throw of dice obeys the laws of classical, Newtonian physics (or else chaos theory, which would not, however, change the essence of the point, since chaos theory is classical at bottom). If we knew all such factors, we could predict and explain

standing of this vision brings further complications into this question and into the question of the relationships between this vision and formalization in mathematics and science.

Even short of these complications, however, mathematics and science appear to involve features that make them more aesthetic, and differently aesthetic, than we usually think. The features just discussed are more deeply and radically aesthetic than what is offered to us by usual aesthetic ideologies, the appeal to and reliance on which, by mathematicians and scientists, philosophers, or laypeople we continue to encounter. This appeal is often based on the same ideologizing misreading (it need not entail actual textual encounters) of Kant and others, which, as de Man argues, may indeed be unavoidable. Conversely, the formal materialism in question makes a dislocation of these ideologies possible.

And yet, this materialism or formalism does not go far enough, is not yet "formalistic enough," at least not so far. Both "Kant's Materialism" and, especially, "Phenomenality and Materiality in Kant" take the Kantian sublime further—to the point where a yet more radical stage of reading Kant's text, and of formalization and materiality, is reached. This stage is reached when how "[the] materiality in question is understood in linguistic terms" becomes more "clearly intelligible," whereby the situation acquires the key features of radical formalization in the present sense and, correspondingly, of quantum epistemology.

In particular, the application of the mathematical formalism of quantum mechanics may be seen as *arising* from, or at least as linked to, an extraordinary form of "vision" of the material constitution and, with respect to the viewpoint of classical physics, de-constitution of the quantum-mechanical data. I am now speaking specifically of the vision ("phenomenality") relating to the marks/traces constituting the quantum data, rather than of the theoretical conceptualization of the quantum-mechanical situation as a whole. As the vision of poets in Kant, which helps us to find the sublime, this vision, which helps us to find quantum mechanics, may be seen as material in the same sense. It may, however, no longer be seen as formal, unless in terms of (if one may use such an expression) a radically de-formalized form—that is, if we can, phenomenally, and especially geometrically, "see" anything in this way at all. It may not be humanly possible to do so, even though, in contrast to the ultimate constituents of matter or the ultimate efficacy of the data in question, the elements constituting these data are available to phenomenological apprehension. We do, however, now

(in de Man's sense) nature of the interpretation of these traces or of the mathematical formalism of quantum mechanics. All such classical representations may be seen (with caution) as forms of (aesthetic) ideology, even when they are divested of everything (tropology, figuration, reflexivity, semantic depth, and so forth) except for mathematical formalization, including of the kind invoked by de Man in the context of the material sublime. At this point mathematization itself (such as that of the Galilean or Newtonian, or indeed Euclidean, program) may be seen as ideological, even if we see it as purely "formal" or purely "aesthetic" and as devoid of technical, or standard ideological, dimensions of the practice of mathematics and science. The efficacious processes themselves will, again, be, in Bohr's terms, far beyond the reach of any pictorial visualization, phenomenalization, representation, conception, and so forth. Now, however, the manifest effects, the visible marks, involved, too, must be seen (in either sense) as divested of any geometrical structure consistent with classical physics. Either individually or collectively, these traces must be seen as allowing for no classical physical description, as would be the case of the "radical *formalism*," at least in the mathematization and geometrization of science, if not of the Kantian sublime itself.

I cannot consider the subject here, but it may be argued that Heisenberg's great paper introducing quantum mechanics appears to reflect the process just described.²¹ First, it suspends the application of classical physics to quantum data and the very possibility of configuring these data accordingly. Instead it treats them formally (but, again, without giving them form) as material and phenomenal effects, divorced from all classical configurativity. His introductory elaborations in the paper itself would suggest nearly as much. Heisenberg does not explore the epistemological consequences of the situation, of which he was only vaguely aware at the time. His main concern was to offer a mathematical formalism that would enable theoretical predictions in the situations where all previous attempts had failed. These consequences emerged in the subsequent developments, specifically in yet another great paper by Heisenberg himself, introducing the uncertainty relations, and in Bohr's work.²² Heisenberg's invention of quantum mechanics, however, appears to have been partly enabled by the deconfigurative phenomenology just discussed.

From this viewpoint, the ultimate "aesthetics" or "poetic vision" of physics is not that of coherence, harmonious wholeness, and other icons of classical aesthetic ideology, although these may apply at other

levels of quantum theory. Instead it is the aesthetics of the radical decoherence, of the formal without form—the quantum aesthetics, if not the quantum sublime, although “the formal without form” would fit the sublime as well. And yet, for all that, the quantum-mechanical formalism, or radical formalism or formalization elsewhere, may remain only another form of aesthetic ideology projected into the radical and nonformally formal “configuration” (a term henceforth inadequate) of material marks, if any nonaesthetic or nonideological perception of them is possible. I shall return to this topic later. My main point here is that, once divested of all mathematization and, especially, geometrization, such as that of optics, the formalism (mathematical or conceptual) of quantum mechanics, for example, of quantum optics, can only conform to radical *formalization*. It does not conform to a radical *formalism* analogous to the radical formalism of the material sublime, which is parallel to the formalization of classical physics, that is, again, short of “linguistic terms” of understanding it. Linguistically understood, it might be seen as subsumed by radical formalization.

Then, reflecting back, the material vision of the sublime would be seen as only appearing (in either sense) to be a classical (and classically architectonic) vision of the mathematization or geometrization of pure optics. In fact, however, as the vision of the sublime qua the sublime, it will have involved radically deconfigurative aspects that are analogous to those found in “contemplating” the data of quantum physics, as just considered. Would this be the vision necessary in order to *find* the sublime, as poets do, if not the vision of the sublime itself? The sublime appears to correspond to a vision of that which always escapes architectonics, geometrization, and so forth, while appearing to be available to them. (We recall that, in contrast to the beautiful, this vision cannot be seen as having an object, but rather as making such an object impossible.) By contrast, in the quantum-mechanical vision the material marks constituting quantum data should be “seen,” should be made to be seen, as altogether devoid of any conceivable architectonics, without phenomenally suggesting this evacuation of the architectonic. Insofar, however, as it may not in fact be possible to see anything in that last way, this vision comes closer to the sublime, although it may still be different from what either Kant or de Man had in mind. For, on the other hand, if we apply this more radical deconfiguration or disfiguration to the sublime itself, we may enact, as it were, the material desublimation of the sublime. The latter would undermine the already “deconstructive” visions and “ideologies” based on the sublime, which

the outcome exactly by using these laws, which would describe both individual and collective behavior, and (lawfully) correlate them, in accordance with the definition of classical law.

The *nonclassical* understanding of chance, correlative to radical formalization, is fundamentally different. Nonclassical chance is irreducible and irreducibly lawless not only in practice (which may be the case classically as well), but also, and most fundamentally, in principle. There is no knowledge, in practice or in principle, that is or will ever be, or could in principle be, available to us and that would allow us to assume chance to be the product of the imperceptible workings of necessity behind it. Nor, however, can one postulate such a causal/lawful structural necessity as unknowable (to any being, individual or collective, human or even divine), but existing in and by itself outside our engagement with it. This qualification is crucial, since, as just explained, certain forms of the classical understanding of chance allow for or are even defined by the latter assumption. The nonclassical chance is not only unexplainable in practice and in principle, but is also irreducible in practice and in principle. It is *irreducibly* lawless.

We recall that nonclassical formalization or law does not account for individual events (again, understood as phenomenal effects) in the way classical formalization does, thereby also correlating individual and collective configurations they consider. As we have seen, classical formalization is defined by this concept of law. By contrast, it is a law of nonclassical formalization that *individual* events are, generally, not comprehended by its laws or by law in general, certainly not in the way they would be in classical physics. Nonclassical formalization allows for the concept of individuality or discontinuity at the level of the phenomenal effects. Indeed, taken to the limit of the irreducible singularity of the individual, this concept defines nonclassical formalization. At the same time, however, it offers no law that would enable us, in principle (rather than only in practice), to predict with certainty the outcome of individual events or when some of them may occur, or their ultimate nature and emergence (at least only certain, partial aspects of such events). Just about any outcome is possible, anything can happen in any given case, and each case is ultimately unique, singular. In this, the nonclassical world (even that of quantum mechanics) is very much like life, to which—or, one might say with Shelley, to the triumph of which—we must ultimately submit.

This world, however, also contains more order and richer orders than the classical one. Statistical or other (collective) patterns do emerge

now appear as merely more sophisticated forms of aesthetic ideology. Perhaps once made "more intelligible," "understanding [the materiality of the sublime] in linguistic terms" reveals the un-architectonic un-sublime thus suggested, although, and because, Kleist's and Shelley's disfigurative visions appear to offer its best model.

Although contextualized somewhat differently in relation to the vision of poets ("the way the poets look at the oceans severed from their geographical place on earth"), something of this type is suggested by de Man's remark, via Montaigne. We must, de Man says, consider "our limbs," formally, "in themselves, severed from the organic unity of the body." "We must, in other words, disarticulate, mutilate the body in a way that is much closer to Kleist than to Winckelman," or one might say deprive them of their geometry (AI 88). Within the material vision of the sublime thus understood, any, for example, linguistic, formalization of such "parts" is a form of "algebra." Some of its aspects can serve to construct partial and ultimately inadequate allegories (some of them geometrical) of the materiality of the "body" in question, both that of the manifest effects (analogously to those of quantum-mechanical marks) or their efficacies. Indeed, the original "parts" or "limbs" are already such allegories, derived from the classical view, and hence as supplementary as the body itself. Accordingly, a more radical disarticulation, mutilation, disfiguration of the (un)body is at stake, even at the level of manifest effects. Following the overall epistemology here discussed, the efficacy of these effects is, again, inaccessible in any way, no more by means of disarticulation, however radical, than by means of articulation. With respect to this efficacy, the dismemberment and disarticulation in question (at the level of the effects) itself reflects only this inaccessibility. This disarticulating dismemberment of the body will be linked to the linguistic understanding of materiality and specifically to the disarticulation of tropes, as indeed the term (figure? trope?) *disarticulation* suggests.²³

De Man's reference to Kleist here and in closing "Phenomenality and Materiality in Kleist" is crucial and confirms my overall point. The question, then, would be whether it is any more possible to experience such a vision or even assign it any geometry than to have any vision the (un)configurations of marks constituting the data of quantum mechanics. What would such an experience, say, in a vision of a sea, be? Is it possible? Can it be shown to be rigorously impossible? For, to see something as the poets do, however, may correspond to the situation in question, if we can see "anything" here at all, even beyond the radically

within it—at the level of phenomenological effects (which is perhaps as much as one can hope for, even classically). Indeed, this emergence of patterns, or that which allows for patterns, is what is truly strange about life, or, again, quantum physics—in view of the irreducible uniqueness of all (rather than only certain) individual events. It also follows that in these circumstances the individual effects involved are in turn reciprocally, if equally enigmatically, affected by this “conspiracy” and, hence, by the collective, even though—this is what is most mysterious and enigmatic—each remains singular and lawless even in these circumstances. Or rather, they would so remain, if one could, in these circumstances, trace them as individual effects. In other words, such lawful collectivities and lawless individualities appear always to be mutually exclusive or, in Bohr’s terms, complementary. In the nonclassical world, the irreducibly unknowable coexists with a greater and more multiple knowledge, orders, and so forth. All our accounts, or indeed conceptions, of what gives rise to these orders or these dis-orders or non-orders (they cannot be considered as disorders either) can only be ultimately inadequate allegories, correlative to the formal deformalization of material effects. But then, as de Man argues, this ultimately “algebraic” quality has defined the practice of allegory all along, in part as the practice of reading, reading books or nature, or both, and as each other. In this sense, all allegories may well be the allegories of (epistemologically nonclassical) reading.

And yet, not only possible but very real events—such as, say, those described in Kleist’s *Penthesilea* or Shelley’s *The Triumph of Life*—leave us no choice, any more than quantum physics leaves physicists a choice here. These events occur and their underlying, or indeed underlying, unreality—the lack of any *conceivable* reality underlying them—does not make them any less real, indeed makes them more real, than any (classical) reality we can conceive of. In de Man’s terms, any such event manifests (the singularity of) radical material occurrence—“an *occurrence*, which has the materiality of something that actually happens, that actually occurs” (“Kant and Schiller,” AI 132). I would argue that at stake here is the radical materiality and/as singularity of events, corresponding to nonclassical epistemology. The latter, accordingly, would also disallow one to strictly locate when and where such events actually occur. What actually occurs does occur, but the point or moment itself of this occurrence is indeterminable. It always takes place, in Lucretius’s remarkable and remarkably precise phrase, “*incerto tempore—incertisque loci*” (at an uncertain time and at an uncertain

relativity, his theory of gravitation, the fall is merely an aspect of the geometry of a space curved by gravitation. The analysis of this space, however, involves a very complex "algebra" (of the so-called tensor calculus) and the technology of rulers and clocks, which would open yet another chapter in the history of the book of nature, the role of allegory in physics, and the reading of de Man.²⁸ De Man continues:

The passage is all the harder to assimilate since it has been preceded by the briskly told story of an English technician able to build such perfect mechanical legs that a mutilated man will be able to dance with them in Schiller-like perfection. "The circle of his motion may be restricted, but as for those available to them, he accomplishes them with an ease, elegance and gracefulness which fills any thinking mind with amazement." One is reminded of the protests of the eyeless philosopher Saunderson in Diderot's *Lettre sur les aveugles* when, to the deistic optimism of the Reverend Holmes, disciple of Newton, Leibniz and Clark, he opposes the sheer monstrosity of his own being, made all the more intolerable by the mathematical perfection of his highly formalized intellect: "Look at me well, Mr. Holmes, I have no eyes. . . . The order (of the universe) is not so perfect that it does not allow, from time to time, for the production of monsters." The dancing invalid of Kleist's story is one more victim in a long series of mutilated bodies that attend on the progress of enlightened self-knowledge, a series that includes Wordsworth's mute country-dwellers and blind city-beggars. The point is not that the dance fails and that Schiller's idyllic description of a graceful but confined freedom is aberrant. Aesthetic education by no means fails; it succeeds all too well, to the point of hiding the violence that makes it possible. (*The Rhetoric of Romanticism* 288–89)

At stake, then, is the possibility of formalization, aesthetic or other, under the condition of the radical, lawless, singularity and deformity—monstrosity—that is quite manifest, materially and phenomenally. Both singularity and law—formalization—and their relationships and conflicts take a very radical form, parallel to the radical disfigurements of Shelley's *The Triumph of Life*. There is also a revealing textual parallel. Here de Man invokes "a long series of mutilated bodies that attend on the progress of enlightened self-knowledge." The essay on Shelley asks about our (according to the present analysis un-Romantic) aesthetic, historical, and other formalization of Romanticism: "For what we have done with the dead Shelley, and with all other dead bodies that appear in Romantic literature—one thinks, among many others,

place), and, we may add, at an indeterminate juncture of the efficacious processes of occurrence.²⁵

It is, as I have stressed from the outset, crucial that, nonclassically, irreducible lawlessness defines and makes singular all constitutive individual events, including those composing (what is perceived as) ordinary events, rather than only certain absolutely extraordinary events—such as, say, Penthesilea's final encounter with Achilles, the encounter that dismembers his body and Penthesilea's mind and language; Rousseau's encounter with "the shape all light"; or Shelley's dreamlike encounter with Rousseau, in *The Triumph of Life*. Ultimately, every event, specific configuration, or historical trajectory will prove to be unique—irreducibly singular and lawless. Or else each can always be nonclassically reconfigured as composed of certain singular, lawless individual elements, on the one hand, and of certain lawful collectivities on the other; that is, in some situations, lawful individual elements of the classical type may, once refigured nonclassically, always be decomposed into lawless individual constituents. Viewed from this perspective, such elements will no longer be subject to classical law as such but instead will belong to a nonclassical lawful collectivity composed by lawless individual elements. It is worth noting that this decomposition need not be unique, even in quantum physics. From the perspectives centered on lawful collectivities, this lawlessness of the individual may not matter or be perceived at all, since certain patterns, statistical or other, allow us to disregard or make us miss this singularity and lawlessness in the classical, or classical-like fashion. To avoid this, we must, "quantum-mechanically," deconstitute this pattern as classical and complementarily engage both the perspectives—that of lawful collectivities and that of lawless, singular individuality. The classical view, as Blake understood so well, erases particulars as particulars (i.e., ultimate individual constituents of such configurations), either by way of general concepts or by means of ethical, political, and aesthetic practices. Indeed, the present argument as a whole may also be seen as a disfigurative reading or at least an extension of Blake's idea of "minute particulars."

We can now give a more radical and more rigorous meaning to de Man's conclusion in "Shelley Disfigured." "*The Triumph of Life* warns us that, [ultimately], *nothing* [and not only certain things], whether deed, word, thought or text, *ever* [and not only sometimes] happens in relation, positive or negative, to anything that preceded, follows, or exists elsewhere, but only as a random event whose power, like the

power of death, is due to the randomness of its occurrence," and hence to the radical, irreducible singularity and discontinuity of this event, and ultimately any individual event or particular historical trajectory. As it makes the allegory irreducible in any representation, phenomenalization, knowledge, and so forth, death, or life-death, becomes a model or, better, allegory, perhaps the allegory, for the structure of *every* event of life. We may indeed define Romanticism in terms of this disassembling magnification or, more accurately (it is, again, not a question of magnifying the small), radicalization of any configuration, classically individual or classically collective, into the irreducibly singular, unique constituents—minute particulars—and the nonclassical reconstitution or reassemblage of such minute particulars (from a necessarily different perspective or set of perspectives) into richly ordered multiplicities. We may, accordingly, also speak of radical organization along with radical lawlessness and singularity. We must, however, keep in mind the very different epistemological status of the nonclassical patterns and laws, the "algebra" and "allegory" of their functioning, as opposed to, one might say, the symbolic "geometries" of classical thought.

This is, then, what such literary texts as Kleist's and Shelley's, or such philosophical texts as Kant's and Hegel's, or Cézanne's paintings, do. They offer us new—efficaciously nonclassical—patterns, orders, or laws, and un-patterning, unordering, and unlawfulness, and new ways in which these relate to each other. Of course, we need to read and understand these texts in great detail in order to study how all this takes place in them. Such texts and such readings also question the philosophical, aesthetic, historical, and other roles and limits of the nonclassical. For, as I said, the latter may ultimately prove to be yet another case of aesthetic (or counteraesthetic) ideology. These complexities are, I think, the main reason why de Man does not close "Shelley Disfigured" with the randomness of death as the final warning of Shelley's poem. Instead he adds the following:

[The poem] also warns us why and how these events [that is, all events as singularities] *then* have to be reintegrated in a historical and aesthetic system of recuperation that repeats itself regardless of the exposure of its fallacy. This process differs entirely from the recuperative and nihilistic allegories of historicism [or aestheticism]. If it is true and unavoidable that any reading is a monumentalization of sorts, the way in which Rousseau is read and disfigured in *The Triumph of Life* puts Shelley

of the 'dead man' that 'mid that beauteous scene / Of trees, and hills and waters, bold upright / Rose with his ghastly face . . .' in Wordsworth's *Prelude* (V. 470–72)—is simply to bury them, to bury them in their own texts made into epitaphs and monumental graves" (*The Rhetoric of Romanticism* 121). Thus, the Empedoclean algebra-allegory of the dismemberment of the body, (re)thought or (re)allegorized in "quantum-mechanical" terms, now applies within very broad limits. It can be further correlated with the quantum-mechanical allegories involved in the optics of Shelley's poem: the wave and particle imagery there; the manifest quantum-like discontinuity of events and textual atoms; the divestiture of marks and traces from all architectonics so as also to reveal their inaccessible (material efficacy); the radical material aesthetics; the collapse of realism and causality; the "algebraic" and "allegorical" nature of whatever patterns or forms of order are left to us; and so forth. In other words, the nonclassical features of quantum physics and Shelley's poetic epistemology can be assembled and brought together in reciprocal allegories.²⁹ De Man's reading does not do this but is in part made possible by these reciprocities, as considered earlier in relation to quantum physics and its nonclassical formalization.

De Man explores the "algebra" of "the mutilated body" at some length in his late essays. The deepest and most significant instance may well be his analysis, considered earlier, of the Kantian architectonics in the third *Critique*. Accordingly, I shall only offer a few supplementary points. In a parallel gesture to his Kleist essay (cited by de Man), de Man invokes Diderot's *Lettre sur les sourds and les muets* in considering the allegorization of the faculties of reason and imagination in terms of both the anthropomorphized dramatic conflict and the sacrificially mutilated body. The invocation has Dionysian overtones and an invocation of the figures of Antigone and Iphigenia (AI 86–87). Then, he proceeds, via Kleist and Kant's first *Critique*, to a reading of Kant's architectonics and its self-de-architectonization in the Empedoclean terms of a mutilated body. The conclusion offers extraordinary elaborations on the allegorical algebra of Kant's text. De Man writes: "to the dismemberment of the body *corresponds* a dismemberment of language, as meaning-producing tropes are replaced by the fragmentation of sentences and propositions into discrete words, or the fragmentation of words into syllables or finally letters" (AI 89; emphasis added).

One thus encounters the workings of radical materiality, or/as singularity, both in the world and in the text. It would, however, be a mistake to see both as merely (if at all) mirroring or mapping each other,

among the few readers who "guessed whose statue those fragments had composed." Reading as disfiguration, to the very extent that it resists historicism [or aestheticism] turns out to be historically more reliable than the products of historical archeology [or aesthetic ideology]. To monumentalize this observation into a *method* of reading would be to regress from the rigor exhibited by Shelley which is exemplary because it refuses to be generalized into a system. (*The Rhetoric of Romanticism* 122-23; emphasis added)

The last clause must, I think, be read as indicating that Shelley's rigor refuses to be generalized into a system that would not allow for the nongeneralizable. Shelley's poem possesses a great power of generalization and offers us very general aesthetic, historical, and political laws, a whole constitution even. So does Kleist's aesthetic formalization in *Über das Marionettentheater*. In question in both cases, however, are nonclassical organizations of "fragments" and (when possible) the "algebra" and "allegory" of their nonclassical formalization. The latter relates to no underlying pattern ("geometry") of wholeness, and yet (similarly to quantum mechanics) it offers us a better guess as concerns the history or aesthetic (or otherwise cognitive) structure of the configuration in question. In question, again, is only the impossibility of the ultimate knowledge, the knowledge of the ultimate efficacy of the events in question and at bottom of all events. By putting this impossibly into play, however, both a greater richness and a greater reliability of a "guess" become possible as well. But then (which may be the main point of de Man's last sentence) each nonclassical reading may itself remain unique, singular. The lessons of such texts or of their reading or of their grouping together (which apply to de Man's own texts, such as those assembled, in either sense, in *Aesthetic Ideology*) are complicated accordingly. Thus, de Man's essay (via Shelley's poem) and his work in general teach us a lesson of great caution, or indeed issue a stern warning (the word that occurs twice in this passage). The success (or a failure) of any strategy, general (such as methodological) or singular, classical or nonclassical, is never guaranteed, except perhaps that, as the saying goes, "in the long run we are all dead." In other words, ultimately nothing survives, even though in the shorter run (which may be long, even indefinitely long, but is always finite) certain strategies, such as that of Shelley's disfiguration, may be more effective, but even this cannot be certain. These are inevitable consequences, "effects," of the nonclassical efficacy here considered.

In short, the texts in question offer us allegories of nonclassical knowledge, which may also be seen as "reading," and hence the texts in question as "allegories of reading" in this sense as well. By a qualified analogy (considered earlier) with quantum mechanics, such texts may be seen as material signifying "surfaces" in which certain peculiar material effects manifest themselves and make possible certain manifest phenomenological effects. As manifest, these effects may be processed (and the corresponding linguistic clusters read) classically. Some of these effects, however, and, especially, their overall configuration are meaningless, and some of them (certain, to borrow Gasché's phrase, "linguistic atoms") are meaningless otherwise, and remain, or sometimes are *made*, meaningless nonclassically. In a nonclassical reading, all of these effects will be convertible into a nonclassical configuration of singular marks or, again, "linguistic atoms," although in practice this program is difficult to follow through. This is why such texts defy classical reading and resist any reading. This resistance even to reading is ineliminable and defines nonclassical reading or knowledge.²⁶ Such texts also enact both nonclassical epistemological configurations and their, inevitably allegorical, analytical explorations. They nonclassically and multiallegorically read themselves. Kleist's essay, by its very structure, also enacts the nonclassical grouping of particular texts and is read by de Man as such. It introduces textual particulars/singularities at all levels, from the "linguistic atoms" of the signifiers to large textual and narrative units, which allegorize each other. In other words, the texts in question allegorize their own reading, which can itself only be allegorical. In the process they offer us allegories of nonclassical reading and, hence, teach us the latter and/as nonclassical knowledge.

De Man, in a nonclassical ensemble of his own *individual* texts, reads these texts as such "allegories of reading," partly classical and partly (and most fundamentally) nonclassical, partly general and partly unique, and so forth. For de Man, nonclassical configurations can only emerge by way of reading, each such reading being, again, unique, rather than in terms of a (independent) conceptual architecture. These readings do contain and enable the latter as well and make it nonclassical. De Man opens his reading of Kleist with a quotation from Schiller:

I know of no better image of a beautiful society than a well executed English dance, composed of many complicated figures and turns. A

as de Man's usage of *corresponds* here might suggest, but should not. (It is difficult to be certain given the complexities of the concept and the very signifier of "correspondence" in de Man.)³⁰ Instead, insofar as one wants to or can approach the world by way of a text (or a text by way of reading), the dismemberment or "decoherence" of language—the divergence, ultimately irreducible and uncontrollable, of the meaning of figures, tropes, signifiers, and so forth, indeed of whatever carries meaning in a given text—manifests the irreducible inaccessibility of the world or life through peculiar configurations of material and phenomenological effects. Accordingly, analogously to quantum-mechanical epistemology, the dismembered, decohered language or representation (i.e., the configuration of the corresponding phenomenal effects) does not map or otherwise represent them any more than "coherent" language and representations do, or reading represents a text. However, decoherent representations or allegories appear to be better suited to relate, via the algebra of allegory, to the world and life, or to read the kind of texts in question here. One might say that the radical (material) singularity of individual events of life and the radical inaccessibility of their efficacy find their proper expression or allegory in this circumstance of the dismemberment or decoherence of language and tropes.

Aesthetic formalization as radical formalization and the overall epistemological machinery in question also become, in an antithetical parallel with Schiller's classical text, enacted in Kleist's essay, at the level of figures or tropes. On the one hand, there is a certain "collective" semantic field within which these figures and tropes function and which—that is, a more or less shared meaning or more or less coherent set of meanings—they obey. On the other hand, once rigorously considered individually, or, again, in a certain ultimate decomposition, these figures and tropes can no longer be fully subsumed by such a meaning or a coherent configuration of meanings. Or, in the terms introduced earlier, they begin to decohere. Accordingly, one speaks of (an enactment of) a decoherence of figures and tropes, or of all language, in a nonclassical text, such as Kleist's, or Shelley's, or Kant's, if in the latter case, to some degree, against other forces, conceptual and tropological, of Kant's text.³¹ This decoherence or dissemination (in Derrida's correlative sense) defines the functioning of virtually all figures and tropes in these texts. They give the materiality of the signifiers, "linguistic atoms," a formal aesthetic structure or un-structure we encounter in the case of quantum mechanical marks, as considered

spectator located on the balcony observes an infinite variety of criss-crossing motions which keep decisively but arbitrarily changing directions without ever colliding with each other. Everything has been arranged in such a manner that each dancer has already vacated his position by the time the other arrives. Everything fits so skillfully, yet so spontaneously, that everyone seems to be following his own lead, without ever getting in anyone's way. Such a dance is the perfect *symbol* of one's own individually asserted freedom as well as of one's respect for freedom of the other. (Friedrich Schiller, *Aesthetic Education* 300; *The Rhetoric of Romanticism* 263; emphasis added)²⁷

This is, in present terms, a classical and classically "geometrical" description, or at least a description that allows for a classical reading. As such it can be, and is by de Man, contrasted to Kleist's nonclassical "algebraic" allegories (which may also be juxtaposed to Schiller's "symbol" here), which disallow classical readings. Schiller's passage and his related elaborations are considered by de Man both in terms of the aesthetic formalization they offer and as Schiller's points apply to the formal structure of Schiller's text itself. The same strategy will be applied to Kleist's *Über das Marionettentheater*, with an exposure of the nonclassical character of the text and of its self-reading as an outcome. After a complex analysis, de Man arrives at a dance that is very different from the "strictly ballroom" dance of Schiller:

We have traveled some way from the original Schiller quotation to the mechanical dance, which is also a dance of death and mutilation. The violence which existed as a latent background in the story of the ephebe and of the bear now moves into full sight. One must already have felt some resistance to the unproblematic reintegration of the puppet's limbs and articulations, suspended in dead passivity, into the continuity of the dance: "all its members (are) what they should be, dead, mere pendula, and they follow the law of pure gravity." (*The Rhetoric of Romanticism* 288)

The invocation of Newton's law of gravity, the paradigmatic classical physical law, is of much interest and significance in the context of the present essay and in general. Both the question of the classical laws of physics and, hence, the formalization of nature, and how classical such formalization can in fact be are at stake. I cannot pursue these subjects here. I shall, however, return to the question of "falling," physically the defining phenomenon of gravity. In Einstein's general

earlier. Or rather, the materiality of the signifier in de Man's sense is this un-structure, which then requires a very different "algebra" of formalization. De Man writes:-

[W]hen, by the end of the tale, the word *Fall* has been overdetermined in a manner that stretches it from the theological to the dead pendulum of the puppet's limbs to the grammatical declension of nouns and pronouns (what we call, in English, the grammatical *case*), then any composite word that includes *Fall* (*Beifall*, *Sündenfall*, *Rückfall* (#46) or *Einfall*) acquires a disjunctive plurality of meaning.

C's story of the puppets, for instance, is said to be more than a random improvisation: "die Äusserung schien mir durch die Art, wie er sie vorbrachte, mehr als ein blosser *Einfall*." As we know from another narrative text of Kleist ["*Über die allmähliche Verfertigung der Gedanken beim Reden*"], the memorable tropes that have most success (*Beifall*) occur as mere random improvisation (*Einfall*) at the moment when the author has completely relinquished any control over his meaning and has relapsed (*Zurückfall*) into the extreme formalization [emphasis added], the mechanical predictability of grammatical declension (*Fälle*).

But *Fälle*, of course, also means in German "trap," the trap which is the ultimate textual model of this and of all texts, the trap of an aesthetic education which inevitably confuses dismemberment of language by the power of the letter with the gracefulness of dance. This dance, regardless of whether it occurs as mirror, as imitation, as history, as the fencing match of interpretation, or in the anamorphic transformations of tropes, is the ultimate trap, as unavoidable as it is deadly. (*The Rhetoric of Romanticism* 289-90)

In introducing "the dismemberment of the body" toward the end of "Phenomenality and Materiality in Kant," de Man speaks of the word *Glieder* in Kant as "meaning members in all the senses of the word, as well as, in the compound *Gliedermann*, the puppet of Kleist's Marionettentheater" (AI 88). In the same paragraph de Man adds a playful reference to Montaigne's "cheerful" invocation of "Monsieur ma partie," further extending the multilingual decoherence—or again, coherence-decoherence—of tropes by dismembering all members involved in their constitution. "Fall" is a decisive figure and concept in Kleist, including in defining any stability, formal—linguistic or mathematical—or physical, for example, monumental. It is equally decisive for Shelley or Keats (whom de Man discusses in this context in "The Resistance to Theory"), or de Man, who brings all three together, al-

though, interestingly, he does not consider “fall” (or, again, dance), as he could, in Shelley, in the way he does in Kleist or Keats. It would not be possible to consider here the relevant physics, for example, the way gravity bends even light itself (which would bring all three figures and texts together in yet another way). These connections must be relevant to de Man’s reading, even if only because from Newton to Einstein and beyond they changed our sense of fall or (they are perhaps ultimately the same) the world. Kleist once said of the arch, another great figural model or allegory: “the arch stands because all the stones want to plunge at the same time,” and, I would add, with the preceding analysis in mind, each following its own trajectory. We know, of course, that a random, lawless event, such as an earthquake in Chile, can bring the arch down in any event. What Kleist tells us here, however, is that even the standing arch is a kind of dance in a gravitational field. We all know or assume, naively, that, in dancing, a fall is the least graceful event, or the least graceful—and the least formalizable—form of dance. It is more difficult to realize, as Kleist did looking at dancing mariottes, that dance is perhaps only a graceful form of falling (always commanded by many a gravitational field of our life, or death) and that grace itself is, in each case, a very singular, and very difficult, combination of fall and dance, just as is the grace of Kleist’s or Shelley’s writing—their dancing pens, without ever falling, except as a form of dance, albeit on thin ice. As Nietzsche tells us, however: “Thin ice is paradise for those who skate with expertise.”

NOTES

1. The use of the term *concept* requires caution here, especially in applying it to Paul de Man’s work. In particular, it may not be possible to “abstract” these concepts from the thought and text of figures involved or indeed to make them “abstract”—free of particularities or even singularities, or, in de Man, (the practice of) reading. Although Jacques Derrida’s “assemblages” (“neither terms nor concepts”), such as, most famously, *différance*, or “concepts” as defined by Gilles Deleuze and Félix Guattari in *What Is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1993), offer better models, de Man’s practice remains unique in this respect. Andrzej Warminski, “As the Poets Do It’: On the Material Sublime,” and J. Hillis Miller, “De Man as Allergen” (both in this volume), and Rodolphe Gasché’s *The Wild Card of Reading: On Paul de Man* (Cambridge: Harvard University Press, 1998), offer further guidance.

2. I will not be able to discuss in sufficient detail the secondary literature on de Man and other key authors to be considered here, for example (to give a very incomplete list), by such scholars as Jacques Derrida, Werner Hamacher, Rodolphe Gasché, Carol Jacobs, Peggy Kamuf, J. Hillis Miller, and Andrzej Warminski. By

the time one comes to other figures the list of pertinent commentaries becomes practically interminable, although Jacques Derrida's, Jean-François Lyotard's, and Jean-Luc Nancy's work on Kant is especially significant here, and especially difficult to put aside. I also bypass two related topics—Derrida's analysis of "law," "event," and "singularity," including in his writings on de Man (and commentaries on these topics in Derrida by, among others, Richard Beardsworth, Rodolphe Gasché, and Samuel Weber), and Gilles Deleuze's approach to these subjects (quite different from both that of de Man and that of Derrida). I am also grateful to Jacques Derrida, Rodolphe Gasché, Samuel Weber, and the editors of this volume for helpful discussions.

3. Paul de Man, *Aesthetic Ideology*, ed. Andrzej Warminski (Minneapolis: University of Minnesota Press, 1996), 119–20; hereafter *AI*.

4. The epistemology becomes classical once such exclusion takes place. This point is crucial to Derrida's reading of Kant in "Economimesis" (*Diacritics* 11:3 ([1981]: 3–25).

5. An analogous argument would apply to other pairs of that type, such as the general and the particular, which similarly figure in de Man's work.

6. For Gasché's view of de Man's epistemology, see, especially, *The Wild Card Of Reading* (108–13, 181–83), and of formalism in de Man, the chapter "Apathetic Formalism" (91–113).

7. This point indicates that the rhetoric of allegory in de Man is indeed the rhetoric of temporality. I cannot consider the question of temporality here, although it is crucial in de Man and significant in quantum theory.

8. I am not sure to what degree one can speak of "materiality without matter" in de Man, as Derrida suggests in his "The Typewriter Ribbon: Limited Ink (2)" (in this volume). Some aspects of de Manian "materialism" may be conducive to such a view. However, the material visions of *Aesthetic Ideology*, including that of "the material sublime," as considered by Warminski's in "As the Poets Do It," appear to suggest that a certain economy (inscription) of matter, analogous to the general economy (also in Bataille's sense) of Derrida's *différance* (*Positions*, trans. Alan Bass [Chicago: University of Chicago Press, 1980], 64), is at stake in de Man's work, insofar as this economy relates to the ultimately inaccessible here in question, which makes "matter" yet another ultimately inadequate term and concept, perhaps having less strategic force than "materiality."

9. Bohr appears to apply the term *phenomena* to the material configurations in question themselves rather than to their representation or phenomenalization. His thinking on the subject is, however, quite subtle and is closer to the present understanding, certainly in terms of the epistemology at stake. I have considered this point and Bohr's quantum epistemology overall in a number of previous articles and books, to which I refer here and throughout this discussion, most pertinently, "Techno-Atoms: The Ultimate Constituents of Matter and the Technological Constitution of Phenomena in Quantum Physics," *Tekhnema: Journal of Philosophy and Technology* 5 (1999), and *Complementarity: Anti-epistemology after Bohr and Derrida* (Durham, N.C.: Duke University Press, 1994). For Bohr's own presentation of these ideas, see his essays in *The Philosophical Writings of Niels Bohr*, 3 vols. (Woodbridge, Conn.: Ox Bow Press, 1987), hereafter referred to as *PWNB*.

10. On this point I refer again to *Complementarity* and "Complementarity,

Idealization, and the Limits of Classical Conceptions of Reality," in *Mathematics, Science, and Postclassical Theory*, ed. Barbara H. Smith and Arkady Plotnitsky (Durham, N.C.: Duke University Press, 1997). The connections with relativity emerge in view of the following key aspect of Einstein's theory (whose connections to quantum epistemology were especially significant for Bohr). Rather than being given independently of our instruments of observation, such as rulers and clocks, and, then, represented by means of these instruments, as Newtonian physics assumes, space and time become "products" or effects of instruments. In other words they are products of the technology of observation (and, in more complex ways, of our theories) and indeed represent or embody experimental and theoretical practices.

11. I have considered this subject in "All Shapes of Light: The Quantum Mechanical Shelley," in *Shelley: Poet and Legislator of the World*, ed. Stuart Curran and Betty Bennett (Baltimore: Johns Hopkins University Press, 1995).

12. Paul de Man, "Shelley Disfigured," in *The Rhetoric of Romanticism* (New York: Columbia University Press, 1984), 94.

13. Most immediately, the latter express strict quantitative limits (defined by Planck's constant, h) upon any exact simultaneous measurement of both such complementary variables. In Bohr's interpretation, however, the uncertainty relations manifest the impossibility not only of simultaneous measurement but the simultaneous determination or unambiguous definition of both such variables at any point. Once again, not even a single such variable can ever be unambiguously ascribed to quantum objects themselves.

14. This statement cannot be seen as strictly defining allegory, which, as de Man says on the same occasion, is difficult to do (AI 51). If, however, there could be one (or any) such definition, the formulation just cited appears to come as close to it as possible. The feature itself indeed appears to characterize the practice of allegory, at least from Dante on. Galileo's project of the mathematical sciences of nature can be seen from this allegorical viewpoint, and connected to Dante, along these lines. (I refer the reader to an article by David Reed and the present author, "Discourse, Mathematics, Demonstration and Science in Galileo's *Discourses concerning Two New Sciences*," forthcoming in *Configurations*.)

15. The details of quantum-mechanical formalism and of the specific form of algebra (that of the so-called operators in infinite-dimensional Hilbert spaces) are not essential here.

16. Cf. de Man's use of "linguistic terms" in "The Rhetoric of Temporality," in *Blindness and Insight: Essays in the Rhetoric of Contemporary Criticism* (Minneapolis: University of Minnesota Press, 1983), 203; hereafter *BI*.

17. The question of the particular architectonic involved in each case is complex, even though a certain geometrical architectonic is suggested by a kind of (pure) geometrical figure (rather than equation) defining Galileo's or Newton's science. Newton felt obliged to recast his mechanics in (Euclidean) terms of geometry rather than those of calculus in preparing *Principia*.

18. Immanuel Kant, *Critique of Judgement*, trans. J. H. Bernard (New York: Hafner, 1951), 24.

19. As will be seen, the nature of quantum probability is in turn nonclassical, and is not defined, as in classical physics, by, in practice, insufficient information

concerning the systems that, in principle, behave classically. As I have indicated, while quantum theory (at least in Bohr's interpretation) fully conforms to non-classical epistemology, it has its specificity. Accordingly, further qualifications concerning it may be necessary, which, however, would remain consistent with my overall argument here. In particular, in certain idealized cases, some among experimentally measurable quantities and, hence, some *aspects* of individual observable "events" involved can be predicted exactly, that is, with the probability equal to unity, by using the dynamical laws of quantum mechanics, such as Schrödinger's equation. Hence, the prediction of such quantities may be seen as comprehended by these laws. Such predictions, however, would not allow us to define the outcome as an "event" (say, in the way we could in classical physics) even in idealized cases and hence to make overall individual events themselves subject to law. In this sense the conditions of radical formalization would still rigorously apply even in these cases. (I also leave aside for the moment that such predictions can only concern effects of the interaction between quantum objects and measuring instruments, and can never apply to "events" of the quantum world itself.) In general, however, in quantum physics there are always "events" that cannot be comprehended by law even with respect to their partial aspects—in principle, rather than only in practice, which is possible in classical physics as well. Nor, in contrast to classical physics, can we ever be certain concerning the conditions under which an idealization of the type just described would apply, even though we, again, can estimate probabilities when it applies. This is part of the irreducibly statistical character of quantum theory, rather than (as classical statistical physics) its being statistical by virtue of the structural complexity of the systems involved and, hence, our lack of sufficient information concerning them. Quantum theory predicts only correlations between events (and does so exceptionally well), but tells us at best only half a story concerning the correlata themselves. This is of course epistemologically extraordinary, but should not be surprising by this point. As I have indicated, in the field of quantum physics, anything can always happen and nothing is ever fully guaranteed, which, as will be seen, is also the principle of de Man's epistemology.

20. Whether this representation in fact corresponds to any "physical reality" is yet another question, which I shall suspend, since the negative answer would only make the present argument stronger.

21. Werner Heisenberg, "Über quantentheoretische Umdeutung kinematischer und mechanischer Beziehungen," *Z. Phys.* 33 (1925): 879–93.

22. Werner Heisenberg, "The Physical Content of Quantum Kinematics and Mechanics," *Quantum Theory and Measurement*, ed. John A. Wheeler and Wojciech H. Zurek (Princeton, N.J.: Princeton University Press, 1983), 62–84. Heisenberg's German title, significantly, says "anschaulichen" ("actually representable") rather than "physical."

23. It is worth qualifying that my subject here is the relationships between this linguistic understanding and quantum-mechanical epistemology rather than the role of language in quantum mechanics—a related and important (especially in Bohr) but separate subject.

24. One can consider from this perspective Derrida's analysis of Cézanne in *The Truth of Painting*, trans. Geoff Bennington and Ian McLeod (Chicago: University of Chicago Press, 1987).

25. I am indebted to Carlo Rovelli's article "'Incerto Tempore, Incertisque Loci': Can We Compute the Exact Time at Which a Quantum Measurement Happens?" *Foundations of Physics* 28:7 (1998): 1031-43.

26. This is consistent with de Man's argument in "The Resistance to Theory," in *The Resistance to Theory* (Minneapolis: University of Minnesota Press, 1986).

27. Friedrich Schiller, *On the Aesthetic Education of Man, in a Series of Letters*, ed. and trans. Elizabeth M. Wilkinson and L. A. Willoughby (Oxford: Clarendon, 1967), 300; translation modified by de Man.

28. I am also referring to de Man's reading of Keats's *The Fall of Hyperion* in *ibid.*, 16-18. Cf. Cathy Caruth, "The Claim of Reference," in *Critical Encounters: Reference and Responsibility in Deconstructive Writing*, ed. Cathy Caruth and Deborah Esch (New Brunswick, N.J.: Rutgers University Press, 1995).

29. I have addressed this subject in "All Shapes of Light."

30. Cf. Warminski's analysis of de Man's reading of Baudelaire's "Correspondances" in "As the Poets Do It" in this volume. It would also be instructive to follow de Man's earlier approach to "correspondences" of that type in "The Rhetoric of Temporality."

31. Cf. also de Man's analysis of Nietzsche and Rousseau in *Allegories of Reading: Figural Language in Rousseau, Nietzsche, Rilke, and Proust* (New Haven: Yale University Press, 1979), 103-11, 135-60, and "The Epistemology of Metaphor" (in *AI* 34-50).