BOOK REVIEWS

ARISTOTLE AND HIS WORLD VIEW, by Franz Brentano, Edited and translated by R. George & R.M. Chisholm. Berkeley: University of California Press 1978, XII, 138 pp.

Aristotle was for a thousand years *The Philosopher*, and certainly he was the philosopher *kat exochen* for Brentano. The founder of descriptive psychology not only published five books and numerous articles on Aristotle, he also left more than 5,000 pages in about 150 manuscripts, notes and dictations on the philosophy of the Stagirite. Only a few pieces of this vast *Nachlaß* have been published so far.

The present book was written and published six years before Brentano's death. Thus, it is a later product of his extensive Aristotelian Studies. But it also reflects his own philosophy, as Chisholm quite clearly points out in his preface. Like other great philosophers, Brentano has the ability to see things in a new light, and it is worthwhile to look at Aristotle with his perspective.

The book starts with the description of Aristotle's vita and writings, the definition of *sophia* as the aim of all intellectual activities, the identification of the object of *sophia* as *being* (in the proper sense), and the explication of immediately evident truths (the existence of which Brentano accepts as given). Immediately evident in this sense are – according to Brentano – only two types of propositions: those which express the infallible perception of ourselves as perceiving something and those which express negative judgments not only regarding possible states of affairs but also regarding what is impossible. What is impossible is so in virtue of a contradiction. Therefore all a priori true propositions are instances of the law of noncontradiction. To be used, a priori principles need ideas which we acquire through perception alone. According to Aristotle there are no innate ideas. Because of the empirical origin of our ideas, we have to accept limits of our understanding. Very simple, very true. The question of how these ideas are to be entertained, is the question of categorization. But what the elements of this categorization really are we are not clearly told.

The next chapters – all very short – deal with substance, with its possible and real changes, and therefore with the problems of cause. And as soon as Aristotle or Brentano speaks of cause, he speaks of the meanings of 'cause' too. Thus, we are led to a first cause, or a first ground, of all reality – i.e., to an infinitely perfect and necessary intellect. But how do we get the idea of such an intellect? By means of the very same principle which says that what is not of itself necessary must have its ground in something else. This is the step which, because it seems both so crucial and so suspect, has provoked so much controversy.

The second half of the book is dedicated to expounding the notion of an absolutely necessary Being or God and to setting forth the consequences of this notion in regard to the concepts of cause, will, teleology, theodicy, etc. Again and again we find in Aristotle the same type of consideration that is present in Brentano's own works: namely, that what is to be justified has to be justified by reasons or grounds which do not rely on further conditions. So, e.g., if something is not absolutely necessary either in its parts or in its moments, it cannot be absolutely necessary as a whole. To take another example: in the chain of natural generation potentiality precedes actuality in the individual case; yet, from an absolute point of view, there must be a first principle, such that actuality precedes potentiality. The final principle, however, is thought of as an intellectual substance, the first cause of all activity and all order in the world. "Its existence is the first inherently necessary positive truth; all other positive truth is an unsuperable consequence of it." It is because of limited intellect that man is not able to understand the nature of this absolute being and to deduce all the consequences.

When we look at Aristotle in this way, we see him as in many respects a predecessor of Leibniz and Brentano. But even when we go back to Aristotle's texts themselves, we find good grounds for the interpretation presented in Brentano's book. And this, after all, is the best reason for recommending it to readers.

After seventy years this book is still well worth attention, even more so in the period which seems to be moving towards a new Aristotelianism.

The translation is reliable and is as readable in English as in the German original.

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THE DECISION PROBLEM. SOLVABLE CLASSES OF QUANTIFICATIONAL FORMULAS, by Burton Dreben and Warren D. Goldfarb, Reading, Massachusetts: Addison-Wesley Publishing Company, Inc., 1979, xii+271 pp.

There is a well-known theorem, due to Church, that the "decision problem" for the first-order predicate calculus is unsolvable, or, in other words, that the set of satisfiable first-order formulas is not recursive. The purpose of this book is to give a systematic account of certain (effectively specified) subclasses of formulas whose decision problems *are* solvable. The classes of formulas treated are usually specified by a combination of quantifier prefix, propositional structure, distribution of bound variables, and what are called "coinstantiations of Herbrand instances." All but the last chapter concerns the first-order predicate calculus without identity.

Chapter 0 introduces basic notation and definitions. The most important item is the notion of *Herbrand expansion.* Most of the proofs in the book involve the *Expansion Theorem* (stated but not proved) that a formula is satisfiable iff its sets of Herbrand expansions at finite levels are all consistent. Chapter 1 concerns several classes of formulas specified by the truth-functional form of the non-quantificational matrix. In Chapter 2, the involved techniques are modified and extended to what is called the "amenability method". Chapter 3 concerns finite controllability: a class of formulas is said to be *finitely controllable* iff each satisfiable formula in the class has a finite model. It is easy to see that the decision problem for any (effectively specified) finitely controllable class of formulas is solvable. The authors show that the classes treated in Chapters 1 and 2 are finitely controllable, develop a technique, called the "amiability method", for proving finite controllability, and show several other classes to be finitely controllable. Chapter 4 deals with a particular class of formulas, called the "Maslov class", which is shown to be finitely controllable. Chapter 5 concerns the solvability of the decision problems of classes of formulas that are not known to be finitely controllable. Chapter 6 develops techniques for reducing the decision problems of some classes to those of others. Several solvability and unsolvability results are thereby obtained. Chapter 7

relates the solvability of the decision problems of certain classes to coinstantiations within the Herbrand expansions of each formula. The final Chapter 8 concerns the first-order predicate calculus with identity. The focus of the chapter is the extent to which earlier techniques can be extended to this calculus. The most important single item here is the result (due to Goldfarb) that the set of satisfiable formulas in the so-called "Gödel-Kalmar-Schütte" class with identity is *not* primitive recursive. It is a major open problem to determine whether this class of formulas is recursive. This, together with the primitive recursiveness of the analogous class without identity, illustrates the authors' remark that decision problems in the first-order predicate calculus with identity are often substantially more complex than analogous problems in the predicate calculus without identity. The book contains an appendix which deals with some related topics and presents a few longer proofs, and closes with a four-page bibliography, a list of the solvability results, an index of the special notation, and a general index.

The authors are aware of the fact that most of the results in the book would have little intrinsic interest if they were considered in isolation. The concern is with overall expansiveness and technique. They write in the Introduction: " . . . the enterprise may look like a pointless taxonomy. However, . . . our interest is not in individual results, but in the picture given by the results taken as a whole, together with the methods used to obtain them." A thoughtful reader can obtain valuable insights into the nature of satisfiability from the results throughout the book relating the solvability of decision problems to quantifier and propositional structure. An interesting example of this is the extended discussion of "Skolem classes" in Chapter 6 which relates connections between different kinds of quantified variables to the solvability (and the unsolvability) of decision problems.

The concern with technique is well born out by the presentation. The techniques are usually first displayed on classes whose decision problems are otherwise known to be solvable, and, quite often, the same classes are treated more than once to exhibit different techniques. A typical sequence consists of (1) a discription of a possible technique for showing the solvability of decision problems or, at least, overcoming some difficulties related to unsolvability, (2) a discussion of conditions (on classes of formulas) necessary for the technique to work, (3) the presentation of a class (or classes) satisfying the conditions, and (4) proofs of the solvability of the relevant

decision problems. Often, the proof techniques are themselves examined. The authors sometimes show, for example, *why* the presented proofs cannot be extended to the entire class of formulas, even though the *fact* that the proofs can't be so extended is well-known.

The concern for technique, however, is sometimes obscured by the attention to detail and rigor. This is occasionally compounded by the special notation. It is therefore recommended that one reading the book for the first time focus on the more discursive material and merely skim the detailed proofs. The book is well-constructed for such a reading.

It can be noted, as an aside, that the authors claim that all but one of the presented solvability results are "constructive". By this, they mean that for each considered class (but one), an algorithm for determining which members of the class are satisfiable is actually exhibited (or, at any rate, an algorithm can easily be constructed from the proofs). Primitive recursive bounds on the number of steps required for the algorithms to terminate are also provided. However, the proofs *that* the presented algorithms work are not always constructive and, moreover, the decision problems considered are not constructive decision problems. That is, the concern is with the *existence* of models, not the possibility of constructing them. Thus, the above claims about constructivity can only be born out in a formal system with both constructive and classical connectives and quantifiers (such systems are developed in the forthcoming *Intensional Mathematics*, ed. by S. Shapiro, North Holland Publishing Co.) It should be noted, however, that if "decision problems" are taken as concerning non-refutability rather than satisfiability, then all but one of the results in the book are either (completely) constructive or can be made constructive. (Of course, Gödel's completeness theorem states that satisfiability is coextensive with non-refutability, but the proof thereof is not constructive.) Also, the results obtained by using the amenability method (developed in Chapter 2) and the amiability method (developed in Chapter 3) provide straightforward techniques for constructing models of satisfiable formulas in the given classes.

A student of computability quickly learns that nearly all interesting non-trivial sets of formulas are not recursive. Thus, his or her attention is almost exclusively devoted to proofs of unsolvability – to showing that algorithms with certain properties do not exist. Since this book is concerned with the solvability of decision problems, it

presents and develops many deep and interesting techniques for showing solvability and, thus, proving the existence of algorithms. It is therefore a valuable and welcome addition to the technical literature on computability.

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THE CONCEPTS OF SPACE AND TIME: THEIR STRUCTURE AND THEIR DEVELOPMENT, edited by M. Čapek. Boston and Dordrecht, Holland: D. Reidel Publishing Company, 1976,lvii+ 570 pp.

In this mammoth volume, Čapek has included seventy-nine selections and a lengthy introduction that discuss the structure and the historical development of the concepts of space and time, as well as some of the philosophical problems that such concepts give rise to. The selections are divided into three parts. Part 1 deals with ancient and classical ideas of space. Part 2 concerns the classical and ancient concepts of time, and Part 3 deals with modern views of space and time and their anticipations. I shall proceed by first making some general remarks about the selections in each part and then I shall turn to a more detailed examination of what I think (and I think Capek would agree) is a fundamental issue in the philosophy of time namely, the ontological status of becoming.

The guiding principle behind the selections chosen to convey the ancient and medieval views of space is that they should enable the reader to have a comprehensive view and a proper perspective of the period under consideration. In order to achieve these aims Čapek chose most of the selections for Part 1 from secondary sources. Particularly useful in organizing the issues about space that concerned the ancient and medievals are Čapek's own introductory comments, F.M. Cornford's "The Invention of Space," and the several newly translated selections from *Le Système du Monde*, by P. Duhem on Plato, Aristotle, John Philopon, and St. Thomas. In addition, Part 1 includes, most notably, Descartes "On Space as Plenum," a criticism of Descartes by H. More "On the Difference between Extension and Matter," a newly translated selection by Gassendi on "The Reality of Infinite Void," Newton "On Absolute Space and Motion," Locke on "Infinite Space and Its Difference from Matter," and Russell's "Early Defense of Newton's Absolute Space."

Part 2 on the classical and ancient concepts of time also includes several interesting commentaries on ancient philosopher's reflections or time. The first selection in Part 2, Cornford's "The Elimination of

Time by Parmenides," raises an issue that is a central one in the philosophy of time and one that occupies a prominent place in Capek's introduction. According to Cornford, Parmenides maintains "that all becoming and change must be mere meaningless words. The One Being exists always and as a whole; nothing more and nothing different can be added" (p. 141). According to Čapek, the denial of becoming and change has its source in fallacy of "spatialization of time." To deny the reality of becoming is, for Čapek, tantamount to denying the reality of time, and to assert with the Eleatics that all of reality is one whole, coexisting together. Thus, not only is "the fallacy of 'spatialization of time' one of the most persistent features of our intellectual tradition" (xxvi), it leads, from Čapek's point of view, to the most deplorable view that time is unreal. I would not wish to dispute that Parmenides denied the reality of time, but I do wish to dispute Čapek's claim that (i) to deny becoming is to deny time itself, and (ii) that the denial of becoming and the spatialization of time entail that all events coexist. Thus, the fundamental issue that is raised concerns the relation between becoming and time. On that issue, more later.

Returning to the selections themselves, Part 2 contains, amongst others, selections from Aristotle and Russell "On Time, Motion, and Change," S. Sambursky on "The Stoic Views of Time," Augustine's "Views on Time," Newton "On Time," Locke "On Succession and Duration," Russell and Bergson, "On Zeno's Paradoxes," and a first translation in English of a useful section in Gassendi's *Syntasma Philosphicum, Physicae* entitled, "The Reality of Absolute Time." The selection on Augustine's views on time is good as far as it goes but it does not go far enough. It includes a section from Augustine on the beginning of time and on Augustine's denial that time is the motion of bodies. Unfortunately, it does not include a section on the problems Augustine raises concerning the measurement of time, nor does it include a section on Augustine's positive views on time offered in response to the problems of measurement. Similarly, the selection by Russell, "On Change, Time and Motion" includes several relevant sections from the *Principles of Mathematics*, but excludes the crucial section (442) where Russell defines change. Another surprising omission from Parts 1 and 2 are any of Kant's writings. Čapek does include a selection from Schopenhauer "On the Necessary Attributes of Time and Space," that is a concise summary of the Kantian views of space and time. Nevertheless, the close connection between the reality of absolute space and

certain fundamental ontological (as opposed to scientific) questions is missed by omitting some selection from, say, Kant's precritical writings, e.g., "Concerning the Ultimate Foundations of the Differentiations of Regions in Space."

The emphasis on the scientific as opposed to the philosophical development of the concept of time is more apparent in Part 3 which deals with the modern views of space and time and their anticipations. It includes pre-relativistic criticisms of absolute space and time by Berkeley, Leibniz, Boscovich, Stallo and Mach. Also included are anticipations of the physical significance of non-Euclidian geometries by Clifford and Calinon. Further, there are selections by Whitehead, Weiner, Bohm and Weyl on some consequences of quantum theory. However, the main contents of Part 3 "are the problems related to relativistic space-time" (xviii). According to Čapek the central issue in relativistic physics is "the philosophical or ontological meaning of Minkowski's famous treatise on space and time" (xlv). There are basically two interpretations of Minkowski's fusion of space with time. One is the static, becomingless view represented in this volume by selections by Grünbaum, Gödel and James Jeans. The other is the dynamic, becoming view represented in selections by Čapek, Eddington, and Whitrow. The central place that the issue plays in Čapek's own thoughts is revealed by the fact that only Grünbaum's article on "The Exclusion of Becoming from Physical Reality," is discussed in detail in Čapek's introduction. Since the "static" vs "the becoming" view is such a central issue and since I believe that Čapek's criticism of the static view is seriously flawed, I shall devote the remainder of the review to it.

According to Čapek, Grünbaum's views on time "leads to an intolerable dualism of two realms – the subjective one, to which becoming because of its 'mind-dependence' is confined, and the becomingless world of physics" (xlvii). Čapek further claims that, "such a sharp metaphysical dichotomy creates even greater difficulties than the traditional Cartesian dualism; for, according to Descartes, both mental and physical realms, despite their profound differences, share at least their *temporal* character; they both belong to the realm of change, i.e., becoming. But in the doctrine of 'mind-dependence of becoming' we have two realms which have *nothing* in common and whose relations and interactions remain completely unintelligible" (xlvii). Čapek attempts to explicate what is involved in Grünbaum's "intolerable dualism" by analyzing the latter's responses to it.

Grünbaum maintains that becoming, the "now," or "the moving present" is subjective, i.e., mind-dependent. Since scientific theory tells us that, say, sensory qualities such as color, sweet, and sour are also subjective, Grünbaum asks, rehetorically, "Why is the mind dependence of becoming more perplexing than the mind-dependence of common sense color attributes?" (p. 487) Capek responds by saying that there is a fundamental *disanalogy* between sensory qualities and becoming. He claims that although it is possible, and in fact true, that the objective stimulus of color is altogether different from the sensory quality of color, "it is impossible to claim that there is no objective, physical counterpart to what we experience as becoming . . . " (xlviii). Capek's premise for that claim is that "no matter how dissimilar sensory qualities are from physical stimuli, they both occur in *succession* and thus exhibit basically the same *temporal* order" (xlvii). Further on he repeats the same idea when he says, "The only difference between the temporal order of our consciousness and that of physical reality is that the latter is far more complex and finely grained. But temporal they both are" (xlviii). Granting the premise, why does Čapek think that it follows that becoming cannot belong solely to the realm of experience, but must belong to physical reality. The answer is that *he takes for granted or assumes that becoming is the ontological ground of succession.* With Čapek's assumption made explicit his first argument against Grünbaum may be restated as follows: (1) Without becoming there cannot be succession. (2) Without succession there cannot be time. (3) Since, however, both the realm of experience and the realm of physics are *temporal* realms, i.e., they contain succession, it follows that (4) Grünbaum is mistaken in maintaining that becoming belongs only to the realm of experince and not the realm of physics.

Čapek's argument, or to be more specific, its first premise, either completely misunderstands Grünbaum's view, or begs the question against it. He misunderstands Grünbaum's view if he thinks the mind-dependence of becoming entails that events in physical reality do not stand in objective temporal relations. Grünbaum quite explicitly denies the implication when he says:

> The temporal relations of earlier (before) and later (after) can obtain between two physical events independently of the transient now, and of any minds. . . . And to assert in that becoming is mind-dependent is *not* to assert that the obtaining of the relation of temporal precedence among physical events is mind-dependent" (p. 472).

On the other hand, if Capek just assumes that there cannot be temporal relations in the physical world unless there is objective becoming, then he is begging the question. The issue is ultimately, the ontological status of temporal relations. For Grünbaum and other so-called B-theorists temporal relations are simple and unanalysable entities. That means at least (i) that temporal relations cannot be defined in terms of becoming, i.e., the changing of events with respect to the properties of pastness, presentness, and futurity and (ii) that temporal relations can obtain between events even if those events do not have temporal properties. Thus, in an argument against Grünbaum one cannot assume that succession is becoming.

Čapek's second argument against Grünbaum is based upon the same question begging misinterpretation as the first, for it assumes that in a becomingless world there is no time i.e., succession. The conclusion of Čapek's second argument is that Grünbaum's "intolerable dualism" turns the physical world into a block universe in which all events "really *coexist, totum simul*" (xlix). If Grünbaum's view leads to that consequence then it is absurd and ought to be rejected, but does it lead to that consequence? Čapek claims, quite correctly, that for Grünbaum "the becomingless universe does not exclude 'temporal separations'" (xlix). What he goes on to say, however, is a travesty of Grünbaum's views,

> In using the term 'separation' he – whether unconsciously or deliberately – spatializes time. More specifically, he represents the *succession* of two events by a geometrical separation of two *juxtaposed* points located on a line which he still calls 'time'. There is no harm in using this spatial symbolism as long as it is understood as a mere symbolism, i.e., as a static translation of genuinely successive terms into spatial imagery; but it becomes a vicious distortion of the true nature of time as soon as it is taken literally. *Yet, this is what he does when he eliminates becoming* (xlix; emphasis added).

Čapek is simply wrong here. In eliminating becoming one is not committed to a literal spatialization of time, i.e., to thinking of time m m m m m m m m m m m m m m m m m m m m m

as a line in which all events in time, like points on a line in space, are co-existent or simultaneous. In eliminating becoming from physical reality all that Grünbaum means to deny is that "belonging to the present is a physical attribute of a physical event E which is independent of any judgmental awareness of the occurrence of either E itself or of another event simultaneous with it" (p. 480). To deny

the existence of a certain physical attribute is not tantamount to denying the existence of succession. As Grünbaum says,

> It is a travesty to equate the objective *becominglessness* of physical events asserted by the thesis with a claim of *timelessness.* In this way the thesis of mind-dependence is misrepresented as entailing that all events happen simultaneously or form a 'totum simul'. But it is an egregious blunder to think that if the time of physics lacks *passage* in the sense of there not being a transient now, then physical events cannot be temporally separated but must all be simultaneous (p. 485).

Yet, as we have seen, Čapek is guilty of this blunder. A question that is worth exploring, if only briefly, is why he commits such a mistake.

The explanation is to be found in Čapek's belief that the fundamental difference between a temporal and a spatial series is that the terms of a temporal series undergo becoming whereas the terms of a spatial series do not. In other words, Capek's argument against Grünbaum once again rests on the question begging assumption that temporal relations presuppose becoming, i.e. without becoming there is no succession. Consider the following passage: "For only becoming provides the dynamical feature which differentiates the spatial 'before-after' relation from the genuinely temporal succession" (xlix). And again,

> . . . as long as we interpret Minkowski's world in a static becomingless sense, the events in it are only verbally successive; they really *coexist* together, *totum simul,* juxtaposition. Only in this way can becoming be excluded from the physical reality and be confined to the subjective realm (xlix).

In other words, Čapek is claiming that in denying becoming of physical reality Grünbaum is committed to maintaining that physical reality is "timeless." The error consists in assuming that there is only one analysis of temporal relations, namely, an analysis that requires becoming. What is particularly disturbing about Čapek's introductory remarks on becoming and time is that they were written after Grünbaum's essay, and yet they contain the same criticisms of Grünbaum that Grünbaum responded to in the selection included in this volume.

There are two other related criticisms of the B-theory of time that Čapek sympathetically mentions. The first is that the B-theory implies a "rigorous determinism" (xlvi) and the second is that the B-theory (and determinism) cannot answer the question, "If the future history of the universe pre-exists timelessly. . . in its totality, why is

it not already present?" (li) Both of these objections are found in the selection by Whitrow on "'Becoming' and the Nature of Time." Whitrow says,

> There is indeed a profound connection between the reality of time and the existence of an incalculable element in the universe. Strict causality would mean that the consequences pre-exist in the premises. But, if the future history of the universe pre-exists logically in the present, why is it not already present. . . . The fact of transition and 'becoming' compels us to recognize the existence of an element of indeterminism and irreducible contingency in the universe (p. 530).

There are all sorts of confusions and misunderstandings involved in this passage. For one, it assumes that the reality of time amounts to the reality of becoming, which in turn rests on the questionable assumption that temporal relations require temporal becoming. Of this we have already dealt with. It also assumes that there are necessary connections between "strict causality" (or determinism), the denial of becoming, and the "block universe." There are, however, no such necessary connections. To say that all events exist (tenselessly) in the sense of occurring at particular clock times does not entail that they all exist at the same time. If there are simple temporal relations between events which exist at different clock times, then they do not all exist at the same time. Furthermore, the B-theory does not entail that all events are determined, i.e., informationally ascertainable, even though it does entail that all events are determinate, i.e., "intrinsically attribute-specific in the sense of tenselessly being what it is at a certain clock time t" (p. 493). Moreover, even if a becomingless view of time did entail determinism, it would not follow that such a view entails that the future history of the universe pre-exists in the present, since determinism does not imply that the future pre-exists in the present. As Grünbaum says,

> Whitrow ignores the fact that states hardly need to be simultaneous just because they are related to one-to-one functions. How, one may ask, does the fact that a future state is uniquely specified by a present state detract in the least from its being later and entail that it paradoxically exists at present? (p. 495)

Furthermore, he says that,

> . . . we have learned from the theory of relativity that events sustain time-like separations to one another *because* of their *casual* connectibility or deterministic relatedness, *not* despite that deterministic relatedness (p. 496).

The point to note here is not so much who is correct in this dispute, although I believe that Grünbaum clearly has the upper hand, but that Čapek in his introduction raises Whitrow's objections without discussing Grünbaum's response to them.

Part 3 contains several classic selections including Mach's "Criticism of Newton's Concept of Absolute Space," and Minkowski's paper on "The Union of Space and Time." I can't help but think that some of the confusion that lies behind Capek's discussion of the ontological status of becoming (and his critique of Grünbaum) rests on his viewing the issue of becoming as a question of the correct interpretation of Minkowski's union of space and time. For if one thinks of the "static" interpretation of Minkowski's representation as a spatialization of time, then since Minkowski talks of world *lines*, one is liable to think of time on the static interpretation as merely a spatial string (line) of events (points), and consequently conclude that to spatialize time is to make all events simultaneous. As I understand the issue, however, the interpretation of the Minkowskian "world lines" is irrelevant to the fundamental issue which is the ontological status of succession. Čapek maintains that the relativistic union of space with time is far more appropriately characterized as a "dynamization of space rather than a spatialization of time" (p. 515). His basic reason for this seems to be that "while there is no juxtaposition of events which would be a juxtaposition in for all frames of reference, *there are certain types of succession which remain such in all systems*" (p. 514). But the existence of succession in all frames of reference does not entail the existence of a transient now or becoming unless there are no simple temporal relations. Thus, Minkowski's theory does not support the becoming view, nor is it incompatible with the B-theory. In fact, if we are to resolve the issue at all, we must leave the realm of physics and turn to the realm of metaphysics, and that leads me to my final point.

Capek's book is noticeably lacking in recent philosophical, as opposed to scientific analysis of the concepts of space and time. For example, neither McTaggart's article on "The Unreality of Time" nor any of the numerous and valuable discussions of it are included. Nor does the book contain any selections from the work of R. Gale or A.N. Prior, philosophers who have recently attempted a systematic exposition and defense of the theory of becoming. Grünbaum's paper although it does present a reasonably clear statement of the B-theory is too embedded in a scientific ontology to be the main expository article of that view. Finally, the doctrine of the specious

present and the problems that it gives to, though fundamental to any complete conception of time, does not have one article devoted to a discussion of it.

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IDENTITY AND ESSENCE, by Baruch A. Brody.
Princeton: Princeton University Press, 1980, x+164 pp.

One of the reasons why the subject matter of this book has been a source of great fascination to a large number of philosophers is no doubt that it constitutes the meeting place for so many of the central topics of logic as well as of metaphysics. Issues like the set-theoretical paradoxes; the axiom of extensionality; impredicative definitions; adverbial modifications; rigid designators; referential opacity and the de re – de dicto distinctions are major issues of pure logic. On the other hand, problems like personal identity, personal survival and the immortality of the soul; essential properties and substantial or accidental changes are typical metaphysical problems. All these and more converge and intermingle in Brody's lucid, little book.

The main thing many readers will probably want to know is why, in view of the fact that there are already a large number of books devoted to this area of philosophy, should they read this particular work which contains mostly very superficial and undefended assertions, when not downright errors and elementary fallacies? The partial answer is, that the value of a philosophical work is not fully determined by the amount of sound arguments and true statements it contains. Nicholas Griffin concludes his judicious review of Brody's book with the following instructive remark:

> Despite the fact that Brody's book seems to me mistaken on all main points, it would nonetheless make a fine undergraduate text – partly because of it's errors and partly because of its clarity. (Canadian Phil. Reviews, 1981, p. 247).

Philosophy is commonly regarded as one of the hardest subjects to teach. Fortunately this is counterbalanced by the availability of special pedagogical devices not applicable in most other disciplines. One of these is the possibility to ask students to read a paragraph or two of a given text and then ask them a number of brief questions. In many cases there will be but one answer, statable in a clear and concise manner.

The following remarkable example concerns Max Black's often discussed claim that he has produced a counter-example to Leibnitz's Principle of the identity of indiscernibles. Black asserts that it is logically possible to have a universe which contained nothing except two exactly similar spheres where every quality and relational characteristic of the one would also be a property of the other.

Brody disagrees and maintains that Black's case does not really involve two distinct objects that have, without exception, all their properties in common:

> After all if there are two such objects then each is such that there is an object with which it and only it is identical. So each must have a unique property, even if it cannot specify the property because (as Black reminds us) we have no way of specifying the object (p. 19).

This suggests the following question to be posed for students: Suppose someone maintained

> H = There are in fact 17 Eiffel Towers in Paris

Why, if we followed Brody, H may have to be regarded as well confirmed as the universally held hypothesis that there is but one Eiffel Tower? Alternatively, why according to Herbert Feigl's sagacious dictum 'a difference must *make* a difference' any discussion as to how many Eiffel Tower are there in Paris may be devoid all meaning?

ANSWER: Brody's reply to Black seems to concede that his two spheres *a* and *b* differ in absolutely no such contingent properties like that *a* is located in one place while *b* is located elsewhere, or that *a* has the disposition of attracting toward itself a third body if it were placed nearer to *a* than to *b*. Nevertheless, he believes, that the property of 'being-identical – with – itself' is sufficient to distinguish the two spheres from one another. According to H then even though the 17 towers, $E_1, E_2 \ldots E_{17}$ are empirically indistinguishable they are discernible in the required sense. E_i for instance has the unique property of being – identical – with E_i, a property that E_j does not have, where $i \neq j$.

The feeble claim on Brody's behalf that it is because of the principle of simplicity that we do not postulate more than a single Eiffel Tower should not be very convincing. After all the main function of that principle is to be a safeguard against cluttering up the universe with superfluous entities but the 16 extra towers do not

increase at all the crowdedness of the world. Furthermore since it makes not the slightest difference how many Eiffel Towers there exist, the whole question may be said to lack substance.

To obtain greater clarity, we should ask why Brody did not claim that *a* and *b* differ not merely in one but in indefinitely many properties? For example, while *a* and *b* are of the same mass, it is only contingently so, whereas *b* is necessarily of the same mass as itself. Thus *a* would be claimed to differ from *b* in that *a* is merely contingently equal in mass to *b* while *b* is necessarily equal in mass to *b*. The same goes of course for equality in volume, temperature, electric charge etc., etc.

But the folly of such claim would have probably been far too evident. The fact that *a* is merely contingently equal in mass to *b* is *not discernible as such.* Unless it is already given that *a* is not identical with *b*, there are no means for determining whether *a* has necessarily or merely contingently the same mass as *b*. It should be absurd to interpret Leibnitz as saying that even when the discernibility of *a* and *b* can be established in no other way but through the assumption that they are distinct entities, that will do in order to guarantee that *a* and *b* are distinct entities. Clearly, for the purpose of Leibnitz's principle what is required is a difference that may be detected prior to ascertaining that *a* and *b* are separate particulars. This is the reason why a property of *a* like that of its not – being – identical – with *b* is also useless in the present context. It cannot be determined to be had by *a* unless we are given first that *a* and *b* are two distinct spheres.

Another illustration not requiring the unravelling of any complex issues concerns Brody's discussion of the following two sentences:

(α) All cyclists are essentially two-legged but not essentially rational.

(β) All mathematicians are essentially rational but not essentially two-legged.

Quine asks us to consider Joe who is both a mathematician and a cyclist. He claims that (α) and (β) jointly entail that Joe both *is* and *is not* essentially two-legged and essentially rational! Brody then presents a proposal to remove the contradiction by maintaining that both (α) and (β) are false: cyclists are *not* essentially two-legged since 'a cyclist can lose a leg and still continue to exist'; mathematicians are *not* essentially rational 'a mathematician can stop being rational and still continue to exist although he cannot then do any more mathematics' (p. 86)

QUESTION: Consider the two sentences

(α^*) Any raven is definitely black but may or may not be airborne

(β^*) Any frightened winged bird is definitely airborne but may or may not be black

and show how these two may appear to lead to a contradiction. Explain why in fact they do not lead to any contradiction.

ANSWER: Let us consider an individual X which is a frightened raven. If we were to follow Brody we might conclude that X both *is* and *is not* definitely black and airborne.

No sensible person would of course argue like this. The individual X, by virtue of being a raven is assured no more than being black, since ravenhood and blackness are definitely interlinked. Ravenhood and being airborne, are not. However, if the additional property of being frightened is also acquired by X then that imposes upon it the further property of being on the wing.

Incidentally, while of course a cyclist may lose a leg and continue to exist he cannot continue to exist as a cyclist – or *be* a cyclist – but as someone who used to be a cyclist. Contrary to Brody therefore (α) is not false. Nether is (β).

Naturally, Brody did not plan to provide a compilation of illuminating errors for the use of the philosophy teacher. It was however part of his intention to write a book containing a clear and concise introduction to his chosen topic and to acquaint the reader with the various important aspects of the many faceted issue of identity and essence. I believe he has succeeded to a large measure in this.

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THE TEST OF TIME: AN ESSAY IN PHILOSOPHICAL AESTHETICS by Anthony Savile. Oxford: Clarendon Press, 1982, 319 pp.

Samuel Johnson, one of the earliest, clearest, and most cogent exponents of the test of time as a criterion for evaluating aesthetic merit, formulated this test as "length of duration and continuance of esteem" and fixed the minimal duration to satisfy it at one hundred years. Though Anthony Savile's book, *The Test of Time*, will not, I'm afraid, survive this test, I nonetheless think it an excellent book. This might suggest merely that time's test works differently with philosophy than with art (which is Savile's area of concern), but I think it rather indicates a fundamental limitation and weakness in the evaluative criterion of the test of time, at least in the version that Savile so painstakingly formulates, analyzes, and defends.

Though Savile's book is uncompromisingly devoted to the proper interpretation and the legitimation of temporal survival as a criterion of aesthetic value, this concentration does not engender narrowness of scope. For Savile's rigorous analysis of this criterion of evaluation logically leads him to examine in depth and detail the aims of art and some of its crucial properties (like beauty and depth) as well as central issues concerning the interpretation, identity, and ontological status of the individual artwork. Indeed, one of the book's many merits is its recognition of the intrinsic interrelations of these issues and its care in trying to resolve them in a mutually consistent and satisfying manner.

The general argument of the book is cleverly and attractively structured. Savile begins (chapter 1) by clarifying the criterion of time to show that mere survival is not enough to entail value; what is required is rather survival "in our attention under an appropriate interpretation in a sufficiently embedded [i.e., endorsed by the cultural *cognoscenti*] way" (p. 11). After arguing (chapter 2) that the inference from such survival to aesthetic value cannot be explained away by psychological self-affirmation, progress in the arts, or appeal to the eventual convergence of common sense, Savile returns to examine the criterion's requirement for proper interpretation of the work. Here he contrasts the currently popular view of open or autonomous interpretation (chapter 3) with what

he calls the historicist (essentially intentionalist) position (chapter 4); and he argues the superiority of the latter, nor only in terms of its consequences for work-identity, ontological status, and, of course, interpretation itself, but also in its better accounting for the inference from survival to value.

Savile then proceeds to develop the central structure of his argument, which, to characterize it very schematically, maintains that survival implies value because only something that has real value (i.e., has the properties to satisfy the aims of whatever kind of thing it happens to be) can resist the pressures toward oblivion that time exerts on everything. This schematic argument is filled out in great detail by examining the aims of art (chapter 5), the various pressures of time (chapter 6), and two properties, depth and beauty, which can enable works possessing them to resist time's pressures (chapters 7 and 8).

Having thus far probed the premise of a work of art's survival, Savile goes on to examine what sort of value can be inferred from it. Here he makes an important distinction between excellence and stature (chapter 9). The former pertains to a work being good (or excellent or even perfect) of its kind, while the latter relates to a work's greatness or genius which transcends any reference to genre, and which, according to Savile, is the sole justification of the continuing autonomous existence of the institution of art. It is also the only value which Savile says can be inferred from his test of time. Chapter 10 struggles with the formulation of a valid deductive proof of the above inference, before settling for the claim that survival is only *defeasible* evidence for the value of stature, and stature the best explanation for survival. The next chapter tries to reinforce the inference from survival to value by showing that certain properties (i.e., sentimentality, vulgarity, and obscenity) which are inimical to aesthetic value but which may seem to insure continued popularity will not secure the required survivial. Finally, the closing chapter aims at "establishing time's test as ineliminable from art theory" except "at the cost of abandoning significant concern with art itself" (p.267).

This is the general skeleton of the argument, which Savile fleshes out with considerable cogency, enviable erudition, and inspiring (if often self-defeating) integrity. Though his philosophical style (and many of his sources) are characteristically English, Savile demonstrates an impressive knowledge of continental (including Marxist) aesthetics and an evident mastery of European languages. When quoting from

the works of French, German, Spanish, or Italian authors, Savile does not rely on available translations, but either supplies his own or (all too frequently for this reader) disdains translation entirely. The various stages of the argument are closely and above all honestly argued. Savile claims no easy points; and the fact that many of the objections he unflinchingly raises against his own views and arguments seem stronger than his subsequent rejoinders makes the book more appealing and convincing though, of course, its specific theses less.

Although generally sympathetic to time's test, I am not convinced by Savile's version of it as dependent on a strict canonical historical interpretation of the work, and as independent from a culture's self-affirmation and the convergence of common sense. If, as Savile maintains, passing time's test requires survival under the one correct canonical interpretation, how can we say a work like *Hamlet* which has undergone so much change and variety of interpretation has passed time's test. Yet surely it, if anything, has. However, since there is not space here for a detailed account of the points where I think Savile's arguments need reinforcement and his views adjustment, let me simply point to one general vitiating tendency in his theorizing and one serious limitation of his version of time's test.

Savile's book seems weakened by an inclination toward assimilating essentialism or univocity which links him to the great tradition of essentialist aesthetics. For example, notwithstanding post-Wittgensteinian scepticism about the univocity of 'beautiful', Savile labours to supply a general formal definition of beauty. He first provides a definition of artistic beauty which may seem plausible, if we accept his premise that every work of art is an answer to a specific problem in a specific style, a premise which is certainly challengeable and, by Savile's own admission, demands further elaboration and argument. Then, in the questionable aim of a univocal analysis of beauty, the notions of problem and style are dubiously imported into the concept of natural beauty, which is assimilated to artistic beauty in a manner that modifies Savile's original analysis of the latter, making it more problematic and less appealing. Similarly, though Savile initially employs Goodman's distinction between autographic and allographic art, he typically treats art as a uniform whole, particularly with respect to the dependence of work-identity on canonical historicist interpretation. This seems not only questionable but at odds with the autographic/allographic distinction.

However, the greatest weakness I find in the test of time that Savile expounds is its severe limitation to judgements of stature, i.e., greatness or genius. Criticism is not often concerned with such judgements but very much concerned instead with judgements of whether a work is good or excellent (of its kind): a good novel, an excellent painting, etc. These judgements Savile's test avowedly and unfortunately fails to accommodate. This is why, as I said at the outset, the excellence of Savile's book, like that of an excellent work of art that falls short of genius, is perfectly consistent with its failing his test of time.

I close with two petty points. Savile's writing style, frequently complex and periphrasitic, would benefit by a more liberal use of commas. Finally, though the book is finely produced by a time-proven, time-honoured press, time and careful reading will reveal too many misprints. In my one reading I found twenty-one in the text and notes, as well as some errors of omission and commission in the (lone) name index.

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INTERESTS AND RIGHTS: The Case Against Animals by R.G. Frey. Oxford: Clarendon Press, 1980, 176 pp.

How philosophers of future ages will laugh when they uncover the random survivals of the new scholasticism that has emerged in the twentieth century, poking its head out like some hoary Medusa from under the overturned aegis of classical metaphysics.

Frey, as his title announces, intends to argue against the trendy case of the recent animal rights advocates who have seized upon ecology, collective guilt about animal protein and the nutritional needs of the Third World, humane objections to factory farming methods, and vivisection practices, and the organic diet/health food cult which has become an identifying ritual symbol of a segment of the middle class in the Western industrial nations. And surely some such critique was needed, at least as much as Singer's, Regan's, and Midgely's much publicized critiques of agribusiness insensitivity were needed[1] – to take *some* of the puffery out of the sails of Greenpeace priggery and above all, perhaps, the tendency to urge millions of acres for wildlife preserves but mealie-meal for the San of the Kalahari.[2]

Regrettably, Frey's countercase is founded on an equivocation. Animals can have rights, he argues (following Leonard Nelson), only if animals have interests. Many animal rights advocates including Regan are inclined to agree. But Frey goes on to assign a sense to 'interests' coextensive with that retired persons use when they speak of concert going, volunteer work, or political activity as among their interests. Non-human animals do not have interests in this sense, as Frey has no difficulty in showing. This sense, however, is not the sense relevant to rights claims, which are founded, if they are based on the idea of interests, in the notion that animals' states may be improved or worsened in some objective way. Frey dismisses the objective sense of 'having interests' as equivalent to 'having a good' or 'having a need'. He finds this irrelevant ethically to the question of rights on the grounds that "anything including tractors can have a good, a well-being" (p. 80) – as though the argument that all things including plants, inanimate objects and artifacts have (prima facie) deserts or rights were a sufficient refutation of the claim that

some or any do. I have argued elsewhere that all beings in fact have (prima facie) deserts commensurate with their being and legitimate deserts (rights) equivalent to their equilibrated interests, *i.e.*, counterbalanced by all other interests; that human interests are not equatable with those of non-human animals because human subjecthood exacts a moral claim from all other subjects which non-subjects cannot make, in behalf of the recognition of subjecthood, but that animals do invoke moral claims of their own, apprehensible and expressible in terms of what I call 'virtual subjecthood' – *our* capability of knowing the sort of claims non-human beings would make if they could articulate their claims.[3] To me it seems immaterial whether such claims are called deserts or rights, although I find the term deserts to be somewhat less explosively charged.

Frey, at any rate, seems to have moved his text, based on a quibble, past the Clarendon Press readers with the same finesse that his arguments must have bypassed his own internal philosophical censors, by painstaikingly careful attention to formal nicety but with reckless disregard for the soundness of the general structure of the argument. One can only hope that his next book will pay as close regard to veracity as the present one does to formality and detail.

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NOTES

[1] See Tom Regan and Peter Singer, eds., *Animal Rights and Human Obligations,* Englewood Cliffs: Prentice Hall, 1976.

[2] See especially Garrett Hardin in William Aiken and Hugh La Follette, eds., *World Hunger and Moral Obligation,* Englewood Cliffs: Prentice-Hall, 1977; and *cf.* Hardin's *Promethean Ethics,* Seattle: University of Washington Press, 1980.

[3] See my *Monotheism: A Philosophic Inquiry into the Foundations of Theology and Ethics:* Totowa, New Jersey, 1981, pp. 92 ff.; *The Case of the Animals versus Man,* Boston: Twayne, 1978, pp. 29–33; *On Justice:* The Littmann Lectures of 1979, forthcoming.