

CORRESPONDENCE

THE "PARMENIDEAN DOGMA"

To the Editor of *Philosophy*

DEAR SIR,

Professor Stace's very interesting article on "The Parmenidean Dogma" in the July issue of *Philosophy* prompts me to suggest that, however true his contention may be of Philosophy in the narrow sense of the word, it does not hold good for Science. Science has, in fact, presupposed the dogma, nor do Professor Stace's examples really indicate that it has. This may be seen in two ways: first, in the existence of non-conservation laws, and second, in the steps by which conservation laws were reached. The outstanding example of the first is, of course, the law of increasing entropy; entropy is as much a physical "existence" as mass or energy, and it is always being formed out of nothing. This has been orthodox physics for a hundred years. Secondly, the law of conservation of mass arose as a generalization from very careful and exact *ad hoc* experiments from which the possibility of the opposite conclusion was by no means excluded at the beginning. Finally, "potential energy" is not merely a name created to preserve the illusion that something inapprehensible actually exists; it is a name given to something quite as apprehensible as any other form of energy. In Professor Stace's example, in which a stone is thrown up and lodges on a roof, two distinct quantities are involved. When it starts ascending with mass m and velocity v , there is the quantity $\frac{1}{2}mv^2$. When it is resting on the roof with weight W at a height h , there is the independently determined quantity Wh . All the necessary measurements can be made at the appropriate times, and it is then discovered that the two quantities are equal to one another. It is therefore convenient to call them by names that suggest both their difference and this equality, and they are therefore called respectively "kinetic energy" and "potential energy." There is not the slightest appeal to the Parmenidean dogma in all this.

Yours sincerely,

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July 11, 1949.

HERBERT DINGLE.

To the Editor of *Philosophy*

DEAR SIR,

Professor Stace has set up his own ninepins on your p. 195 in order to knock them down again on p. 202 by proving that what he calls the "Parmenidean Dogma" is not an analytic *a priori* truth. It is not Parmenides but Empedocles (frgm. 12, 1) and Melissus (frgm. 1) who taught that "something cannot come out of nothing" and that "something cannot become nothing." It is contrary to all our evidence that Parmenides's starting-point was the experience that you cannot get a rabbit or indeed anything out of an empty container. Had he started from such a proposition he would have been guilty of the confusion of "empty space" with all its geometric and physical relational characteristics with "nothing" which led Democritus (who needed the notion of empty space for his atomic theory no less than we need it for ours) to the assertion (fr. 156) that "the Naught exists as much as the Aught."

What Parmenides really taught is the axiom: "the nothing" or "not-being" does not and "cannot be" (or "exist"). "The view that 'THAT WHICH IS NOT exists' can never prevail." This, however, is beyond doubt an irrefutable, logical *a priori* truism, because the contrary assertion "the non-being is" (or "exists") is manifestly self-contradictory.

If this is conceded, as it must be, it follows that Reality, "that which exists"—an all-embracing concept—synonymous with "the All," the "Universe"—the "All" which "is one" cannot be surrounded in space, preceded or followed in time or enclosed, pierced or holed in space-time by the Nothing, the Naught or Not-Being.

It follows that nothing can enter Reality from an outside Nothingness, Naught or Non-Being. This excludes "creation," "bringing into existence out of a preceding or surrounding Nothing"; "annihilation," "reduction to nothing" as well as "coming into" or "going out of existence." It follows that the decisive influence of the Parmenidean axiom on European thought was wholly beneficial and legitimate.

Bertrand Russell has the undying merit of having shown—in 1901—on the basis of Weierstrass's banishment from mathematics of the use of infinitesimals, that "we live in an unchanging world and that Zeno's arrow in its flight is truly at rest"; that "motion consists merely in the fact that bodies are sometimes in one place and sometimes in another, and that they are at intermediate places at intermediate times"; but that it is a fallacy if "philosophers tell us that it changes its position within the instant."

Aristotle's concept of "potentiality" does not follow, but is excluded by the Parmenidean axiom because there is no realm of potentialities or possibilities outside of reality. What is, is "actually," not "potentially" real. The principles of the conservation of matter-energy are legitimate deductions from the Parmenidean principle. If Professor Stace will read Dr. G. J. Whitrow's admirable new Book *The Structure of the Universe* he will learn how much of physics has become, since he studied it at school, a purely deductive, epistemological system, mainly thanks to Eddington and E. A. Milne.

There is no space, sir, to discuss here Professor Stace's ghost-story of "seeing" kinetic