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letters

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news since. Pasquini has worked for three years in our Laboratory at Saclay, France. Many of their friends fear that they have been assassinated.

National Institute of Industrial Technology

► Dr Maximo Victoria, Chief of the Material Science Department. Detained since March 1976.

► Dr Antonio Misetich, Chief of the Refractory Material Section, is a well known physicist who has collaborated with various solid-state groups in Grenoble, France and at the Bell Labs in New Jersey. He was arrested by people dressed as military officers on 19 March 1976. Some of his friends in your country have already alerted US officials including Senators Brooke and Kennedy, and House Representative Thomas O'Neill, to intervene in his favor. It is to be noted in this respect that, despite the assurances said to be given by Argentinian officials to the US administration, all requests from his family, including queries about Misetich's health have been consistently turned down since last July.

For all these people it is not only a matter of being able to carry on their scientific work, it is indeed a matter of life and death. You may contribute by letting it be known, that the whole scientific community takes the physical integrity of Gallardo, Carabelli, Huarque, Pasquini, Victoria and Misetich under its protection, and thus perhaps induce those who retain power to take some action in their favor.

Note added in proof (1/11/77) As of early January we learn that Maximo Victoria has been let out of jail and is now in Europe.

Newly detained are: Frederico and Hilda Alvarez-Rojas, physicists working in metallurgy with CNEA at Buenos Aires, disappeared by mid October; Roberto Ardito, engineer-physicist working at CNEA cyclotron at Buenos Aires disappeared by mid October; Frederico Ludden, solid-state physicist at LaPlata University, disappeared by mid December.

C. DE DOMINICIS

*Président de la Société Française de
Physique*

Service de Physique Théorique

CEN-Saclay, France

11/9/76

Since the publication of our letter in November (page 13) we have new information about Dr Antonio Misetich. The Police and the Army recently denied arresting him and knowing his whereabouts. We believe that he may have been murdered.

Misetich, known to many American physicists since the years in which he worked at the National Magnet Laboratory, has been arrested, according to the

"Correo de la Semana" (Buenos Aires, 29 June, 1976) but the Police and the Army have denied his arrest. Rumors that he was in prison turned out to be untrue.

We are seriously worried by this situation that can only cause further damage to the development of scientific and cultural activities in Argentina. We call upon our colleagues to demand from the Argentine government that measures be taken so that Misetich's fate be clarified; that our imprisoned colleagues be freed; and that those dismissed be given back their jobs, as a first step towards the re-establishment of a climate favorable to the development of science and culture.

FELICIANO SÁNCHEZ SINENCIO

EDGARDO CALVA-TELLEZ

CARLOS FERNANDEZ TOMÁS

Centro de Investigación y de Estudios

Avanzados

del Instituto Politécnico Nacional

Mexico City, Mexico

10/26/76

Validity of modern theory

Many people have commented on the apparent difficulty in which modern physics finds itself. This difficulty was pointed out by Heisenberg in his comments in the March issue (page 32). His objections stem from an almost ineffable feeling of incorrectness which he pinned to a lack of understanding of the dynamics of the high energy particle situation. I would like humbly to add my comments to those of Heisenberg on this general subject.

The problem in physics is not simply in high energy physics or even physics. The problem seems to rest in the very roots of life. It rests upon a duality, namely nature and the mapping of nature onto the collective consciousness of the scientific community and more particularly the individual. If the mapping is faithful, harmony exists. The inner eye of those people sensitive to nature, and there are such people, is not offended by any discontinuities between the mapping and the object.

The difficulty arises when the mapping is not faithful. One cause of a non-faithful mapping is multivaluedness. For any event in nature there can exist an infinite number of explanations. Presumably, given a holomorphic view of the rest of the cosmos, only one explanation fits best in the total model. This is the only criterion of acceptance of an explanation of an event: it fits with the rest of the map which we assume (hope) is faithful.

It appears that in modern science, particularly physics, the tendency is to shotgun theories, for whatever reason. We immediately develop a multivalued mapping because of the multiplicity of the theories for a given set of events. Before the theories have a chance to compete with each other for a slot in the whole

mapping, a new set of theories has been advanced based largely on the older but as yet unassimilated theories. As a result, we proceed from one unfaithful mapping to another with increasingly small chance for healing the breach. Thus theorization (the generation of theory) will be carried further and further from the faithful mapping. The problem is compounded and the very fabric of the larger map is in danger at this point. The validity of the mapping is judged by those most cut off from the mapping: the shotgunners.

The end result is, as Heisenberg points out, a bunch of tables containing the pseudo-theories which apply in the particular but are not connected to each other by much more than the book binding. One is reminded of the numerologists of the present and past who have proved the universe from their obscure codes. The ability of the human being to prove truth from coincidence is without bound.

There is likely no solution to the problem. The near range result will probably be a split in physics along political lines, the forerunners of which are already obvious. With the competition of various explanations for "correctness", the proponents of certain ideas will do battle, but no "correctness" can be determined since no relation to the whole mapping can be established. A party which may label itself as the "main stream" may split from the large body of physicists and chase their tails among the forest of theories. Physics will survive among those who make their living depending upon the correctness of the mapping—the applied physicists, the experimentalists, and the engineers.

ROBERT S. WRATHALL
Glendale, Arizona

8/9/76

Correction

Unfortunately, due to an inexcusable error of exposition on my part, one of my thoughts was quite understandably misinterpreted in my letters in August (page 70). I refer to the last sentence in the second paragraph, in which I wrote: "But if the court were to presume to instruct the public—*ex cathedra*, as it were—then it would indeed be foolishly taken in by its false infallibility." I meant that the court should not delude itself as to its mission or function; not, as the sentence was subsequently edited to demonstrate, that the public would be misled under such circumstances.

Interestingly, both statements are certainly true, in that the infectious assumption of false infallibility would doubtlessly spread from the court to the public in general, because of the former's authority.

HARLAN ARTHUR HURWITZ
Wesleyan University
Middletown, Connecticut □

8/9/76

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