

24 August, 1972

Professor Fred Belinfante  
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Department of Physics  
Lafayette, Indiana 47907

Dear Belinfante,

Many thanks for your letter of 3 August. It results from this letter that, while we are certainly in fundamental agreement about most points, there is still one difference between us which, I think, is not unimportant, and that we should therefore try to smooth up.

We should not waste more time about poor Ballantine. I heartily agree with you that he is a very misled youngster and that there are greater sinners than he. I am not so ferocious as I seem to have given you the impression, but I think we should avoid the risk of misleading other youngsters by giving too much praise to his article, only because it happens to have some convenient sections.

With regard to the rule F5, I see indeed that it is not the reduction rule, but a more fundamental one. I was confused by the fact that you actually use it in connection with the reduction process. It is a matter of great indifference how you denote this rule without mixing Ballantine with it. Perhaps the simplest would be to enunciate this rule and label the formulation with some letter R, say. Then you would talk of the rule R, a splendid application of Knudsen's principle.

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This brings us to the really fundamental point that is still needing some elucidation, namely my contention that the consideration of the reduction process is not something one can in any way dispense of, and to which there is no equivalent procedure. The point is that the measurement is our only way of attaching a meaning to the mathematical symbols of the theory, by associating such symbols with some direct observation (position of a pointer, spot on a photographic plate, and so on). Of course, we need not all the time when we use the theory remember that the meaning of the symbols is obtained in this way, and still less do we need to include the analysis of the measuring process in the discussion of the phenomenon. In fact, the rules or prescriptions of the theory, and among them the reduction rule, are just there to dispense us from doing so all the time, but as a matter of principle, and this is what we are concerned with here, we must insist on the origin and function of these rules and prescriptions. This is the sole purpose of the discussion of the measuring process, and I can therefore only regard it as "widersinnig" of Everett to attempt to avoid the only issue which is really indispensable for the whole epistemological analysis of the foundations of the theory. How treacherous this pitfall is is most convincingly demonstrated by the fact that even you have managed to stumble into it. I am doing my best to pull you out of it, and I am confident that I shall succeed. For this purpose the best I can do is perhaps to remind you of the article by Bohr, published in Dialectica, of which I enclose a reprint. Honestly, I see no point at all in your attempt to rescue any-

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thing of Everett. It can only confuse the issue  
and encourage woolly thinking.

Please write again soon. I am more ready  
than ever to continue, if necessary, the discus-  
sion.

With heartiest wishes,

Yours,

L. Rosenfeld

P.S. I have just received from a certain Dr. Ernst  
Breitenberger (Ohio University, Department of Physics,  
Clippinger Research Laboratories, Athens, Ohio 45701)  
a preprint in which he exposes a crude logical fallacy  
contained in Ballantine's article.

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