

# Comment on Stern's letter

1. True, word observer given many connotations -- but all these connotations can be used consistently within the scheme of Chap IV (abstract disc. of observation). Such usage deliberate to show how general the treatment is. Technically, "observer" can be applied to any physical system capable of changing its state to new states with some fairly permanent characteristics which depend upon the object system (with which it interacts). -- i.e. any measuring apparatus could be called observer -- and criteria for observer same as for meas. apps.. Only possible distinction is often one might reserve word "observer" for more complex automatic mechanism, capable of carrying out actions according to its past experience. Dictionary meaning must also be included since otherwise human observer not ordinary phys. system and PPP violated.

2. Statistical ensemble of observers is, within the context of the theory, a real, in distinction to a virtual, ensemble.

3. Stearns' remarks about misunderstanding of fundamental irrev. of measurement proc. indicate rather clearly that he has had insufficient time to read the entire work. Several rereadings on his part seem to be called for.

Also - Stearn is quite guilty in these remarks of begging the question - - - one of the fundamental motivations of the paper is the question of how can it be that macro measurements are "irreversible", the answer to which is contained in my theory, but is a serious lacuna in the other theory. (see remarks Chap V)