the reality of the ppi-pi effect

It is difficult to know just how Schneider (1978) regards the disproportionate deficit in the reaction time (RT) of schizophrenics on trials for which the preparatory interval on the preceding trial (PPI) is longer than the preparatory interval (PI) on the current trial. At various times in his paper he refers to this PPI-PI effect as a “thesis,” a “concept,” and finally as an “epiphenomenon” (but doesn’t say of what). First, it must be clear to most readers of Nuechterlein’s (1977) review that the PPI-PI effect is indeed a well-confirmed empirical phenomenon rather than a thesis or concept. With the PI held constant, the RT of schizophrenics is influenced more by variations in the PPI than is the case in normals. Moreover, the greater overall effect of the PI in a balanced irregular series must be partly an “epiphenomenon” of the PPI effect since the shorter PIs in the series are more frequently preceded by longer PPIs.

Given the reality of this phenomenon, the question is how is it to be explained by existing or new theories of schizophrenic deficit? In attempting to refute Shakow’s segmental set hypothesis, Schneider makes some assumptions of his own, namely that Shakow assumes that the schizophrenic bases “a disproportionate amount of attention on the PI of the immediately preceding trial,” that in order for the PPI effect to exist a “very precisely recorded and immediately available ‘trace’ . . . of the PPI must have been formed and at hand for continuous comparison throughout the PI,” and that the theory demands that the schizophrenic “be accredited with unusually consistent and high powers of concentration” (p. 154). It may be true that a model containing these assumptions is incompatible with the empirically demonstrated PPI effect. However, Shakow’s hypothesis neither makes nor requires these assumptions. It states that the preparatory set of the schizophrenic on a given trial is disproportionately influenced by the characteristics of the preceding trial relative to the influence of entire series of preceding trials. To be influenced by an event is not at all the same as attending to that event. Shakow uses “generalized set” and “major set” interchangeably (Shakow 1963, p. 302). This emphasizes the relational nature of the formulation. The theory by no means requires the assumption of greater attention, more persistent traces, or higher powers of concentration in an absolute sense in schizophrenics.

Schneider’s gratuitous assumptions are so restrictive that, if accepted, virtually any theory of schizophrenia which emphasizes attentional deficits as a core problem would be incompatible with many of the RT findings including those on stimulus modality changes and regular PIs in addition to the PPI effect. Nuechterlein (1977) quite correctly points out that none of the existing theories can account successfully for all of the findings. The findings won’t go away. What is needed are better theories to explain them.

References


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