

ADDENDUM TO
A HIERARCHY OF STRESSORS

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THE purpose of this short note is to reformulate the concept of a Hierarchy of Stressors (1) with respect to the Law of Initial Values developed by Wilder (2).

In 1955, Fischer and Agnew introduced in this Journal a concept (1) in which stressors ("alarming" stimuli) were classified according to their capacity to threaten the various levels of organization of the organism. This implied that different adaptive responses are elicited if the organism is threatened by stressors directed towards more basic urges and needs than those perceived as less vital to the organism's existence. In physiological terms: being-already-under-stress interferes with the neurohumoral mediation of another stressful situation (i.e. "alarming" stimuli) of similar importance and magnitude. It was proposed therefore to assume that the organism adapts to stressors in a hierarchically selective manner. In such a hierarchy, it was postulated, a "life stressor of primary importance" that is a remission provoking deep insulin coma, ranks higher than the "alarming" stimulus eliciting the schizophrenic process.

We believe that the concept of a Hierarchy of Stressors is another formulation of Wilder's Law of Initial Values, which refers to the relation of autonomic changes to pre-stimulation levels.

Working with a variety of pharmacological agents, Wilder (2) found in about 80 per cent. of his experiments with man that "the higher the initial value of a measured function, the lower is the tendency of the system to respond to furthering stimuli and the greater its tendency to decrease in responding to inhibitory stimuli; the highest as well as the lowest values tend to result in a reversal of action".

These significant observations have recently been verified on this continent by Lacey (3) who has shown for a variety of populations and stressors that the magnitude of stimulus-produced activation of the autonomic nervous system, in general, is related negatively to the pre-stimulus level of physiological function. Lacey argues that this is not simply an arithmetical artifact of there being but a limited range of response left available to an organism already functioning at high levels of autonomic excitation, but that it is a physiological consequence of, and deducible from, the facts of homeostatic restraint of response.

In our Hierarchy of Stressors concept, we suggested that "life stressors of primary importance" might be directly involved in the reversal of the schizophrenic process. In Wilder's formulation: the magnitude of increase of physiological changes decreases as the initial level increases; that is high initial levels of autonomic activity "quite often" result in a "paradoxical decrease" or reversal of action.

Our purpose was to show that Wilder's Law of Initial Values as well as the Hierarchy of Stressors concept are efforts to describe the very same phenomenon. This interpretation points to the necessity of quantifying both pre-stimulus levels as well as the subsequent physiological activation.

REFERENCES

1. FISCHER, R., and AGNEW, N., *J. Ment. Sci.*, 1955, **101**, 383.
2. WILDER, J., *Klin. Wschr.*, 1931, 1889; *Ars. Med. (Basel)*, 1954, **43**, 752.
3. LACEY, J. I., *Ann. N.Y. Acad. Sci.*, 1956, **67**, Art. 5, 123.