

# Comment on "Figural aftereffects, illusions and the dimension of field dependence"

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Pressey & Koffman's (1968) study failed to corroborate Immergluck's (1966a, 1966b, 1966c) data which showed a relationship between visual figural aftereffects (FAE) and measures of field dependence, i.e., a relationship showing that field-independent Ss exhibit more potent FAEs than do field-dependent ones. Immergluck's findings, however, of a relationship between the strength of FAE and resistance to optical illusions were corroborated, but only for male Ss. The authors go on to suggest that the discrepancy between their and Immergluck's results might be due to the possibility that Immergluck's field-independent and field-dependent S groups may have been overloaded with male and female Ss, respectively, with the implication that his findings might be due to sex differences rather than intrinsic field-dependence attributes. They also take issue with Immergluck's employment of only one FAE inducing figure as well as his utilization of the Rod and Frame Test (RFT) as the sole tool for assessing field-dependence.

I should now like to offer some remarks which may help clarify the nature of our studies as well as some comments on the Pressey-Koffman investigation. First, our own preliminary work and a series of "pilot" studies have convinced us that the crucial variables which relate FAE potency to measures of field-dependence lie in the intrinsic potency of the FAE, regardless of S's sex. In fact, our own S groups, both field-independent and field-dependent, contain in all of our investigations an about equal distribution of both sexes. Since this issue is now being raised, we shall shortly report a detailed analysis of these factors. Our selection of the RFT was based on its utilization in the assessment of field-dependence, particularly with adult Ss, for over two decades in a wide variety of studies, and we saw no need, particularly for our limited aims, to utilize additional assessment instruments. While we admittedly employed but one stimulus pattern in the past investigations the authors refer to, it should be pointed out that this specific stimulus figure represents a classical FAE design which has been widely used in demonstrations of these effects. In a recently reported experiment, however (Immergluck, 1968), a totally different FAE was used which yielded results identical to those in the previously cited investigations.

But now to some comments on the Pressey-Koffman study. To begin with, it should be mentioned that their procedures represent in no way a direct replication of the methods employed in our investigations. They utilized a group method of FAE induction, different stimulus designs, and instructions in which Ss were informed about the nature and occurrence of aftereffect phenomena (Koffman & Pressey, 1967, p. 511). In our research designs, each S was always assessed in individual sessions with instructions that studiously avoided the suggestion of the possibility of figural aftereffects; they were merely informed that the second design (T Figure) would contain figures which may or may not be "equal" and they were asked to report their immediate perceptions. We shall return to a discussion of these differences later.

It is true that the Pressey-Koffman data (cf. Table 1 in their report) fail to uncover a significant relationship between FAE potency and field-dependence for either the male or female S groups. But these findings contradict not only our reported results but, perhaps more seriously, they stand in contradiction to a long line of established literature, including a cited investigation by one of the authors (Pressey, 1967), in that they also fail to show any sex differences in their own measures of field-dependence. To be more specific, although the pertinent literature reports consistently higher field-independence scores for male as compared to female Ss, an inspection of the presently presented mean scores

(cf. Table 1) on both the RFT and the EFT (Embedded Figures Test) reveals no difference between the sex groups. Since both groups presumably contain Low, Medium, and High FAE susceptible Ss, one cannot assume any particular bias from that source. Furthermore, the reported RFT means, for example, are of such low magnitude (in the absence of any given deviation measures, a more precise calculation is not possible) that one is led to the suspicion that both sex groups contain a homogeneously high field-independence loading. The reasons for this can only be guessed at. It is possible, for example, that the authors' criteria for Low, High, and Medium FAE were not sufficiently discriminating. (In our experiments we contrasted specifically Ss who showed FAEs with those who showed none. Had they used similar criteria, it is conceivable that their results would have been similar to ours.) At any rate, it is clear that some inadvertent bias has contributed to the selection of the presented S groups.

Still another puzzling aspect is posed by the authors' reported significant relationship, at least for male Ss, between the Poggendorff illusion and FAE. In a previous study by Pressey (1967), which the authors cite, responses to the Poggendorff illusion were found to be significantly related to RFT and EFT for men and to EFT for women, neither of which is shown to hold in the presently reported study (cf. Table 1). These original results led Pressey to conclude that "these findings generally support the view that the Poggendorff illusion provides a measure of field-dependence [p. 310]." But if this is so, should the authors not have concluded, even on the basis of their present data, that there is, to this extent at least, a relationship between FAE and field-dependence?

Finally, a word is in order with regard to the utilization of group techniques, much as they would be desirable, in the assessment of FAE. The visual FAE is possibly one of the most volatile and difficult to assess perceptual phenomena, with many often very subtle factors determining its course. Instructions, attentional factors, eye movements, sustained fixation, etc., are many of the variables which have to be taken into account when determining the presence, absence, or strength of an FAE. Surely group measures may easily and inadvertently mask many of these intra- and inter-S variables. Indeed, in our own present work aimed at a parametric description of FAE attributes, we find it necessary to include pupillometric measures and visual scanning monitoring devices with each S to be sure that the stimulus input remains constant from S to S. And it is safe to predict that future research on the FAE will perforce include increasingly sophisticated refinements of assessment techniques. While such refinements may, at this point, be neither feasible nor necessary for most studies, I should like to take the liberty to plead that, at least for the time being, the assessment of this phenomenon should be undertaken only in carefully controlled individual sessions which allow maximum appraisal of S behavior.

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