Field-dependence and form discrimination in males

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Forty-two males were divided into field-independent, medium, and field-dependent groups and administered a form discrimination task. Field-independent Ss made fewer combined errors than field-dependent Ss. This finding was consistent with active and passive touch as well. When the present study was compared with previous work using females, a clear-cut sex difference emerged.

With the exception of the Vaught & wagustson (1967) and Vaught & Ellinger (1966) studie few researchers have investigated individual differences in active-passive touch as viewed in field-dependence and/or the global-articulated dimension of cognitive functioning. Other studies (Axelrod & Cohen, 196'; Witkin. Birnbaum, Lomonaco, Lehr, & Herman, 1965), however, have shown that in general, field-dependence cuts across sense modalities in predictable ways. The importance of the active-passive touch dichotomy has been highlighted by Gibson (1962) and, as previously noted, offers a means of adding specificity to the predictive value of the field-dependence dimension (Vaught & Augustson, 1967).

The Vaught & Augustson (1967) study reported no differences among field-independent (FI), medium (M), and field-dependent (FD) females for combined active-passive error scores in form discrimination; however, FD females made significantly fewer errors in passive touch than either M or FI Ss. This latter finding was interpreted to mean that FD females, in contrast to the M and FI females, rely on external information in the rod-and-frame test (RFT), i.e., the frame, and continue the same strategy in form discrimination. In this manner of reasoning, FD females would experience more sensory information as a function of external reliance and make fewer errors under conditions of passive touch than FI females. Active touch, on the other hand, relative to passive touch, appears to be somewhat easier, and fewer discrimination errors are made regardless of field-dependence.

Since the previous study used only females, the present study, then, provided a means of investigating the relationship between level of field-dependence and form discrimination in males.

Method

The Ss were 42 male introductory psychology students from Albion College, Albion, Michigan, selected from a pool of Ss who had previously taken the rod-and-frame test (RFT). The Ss were divided into three subgroups (FI, M, and FD) with 14 Ss per group. Table 1 shows the mean RFT score for each group.

Since the present study was a replication of previous work using female Ss, the E, materials, and procedure were the same as those reported by Vaught & Augustson (1967).

Results and Discussion

A Winer (1962) repeated-measures analysis of variance was performed on the form discrimination error scores and the Newman-Keuls procedure was used to compare the individual group means. Significant differences ($p < .01$) were found among the field-dependence means (FI = 8.07; M = 10.00; FD = 11.86). Fewer errors were made in form discrimination by the more field-independent Ss as reflected in the above combined error means. The direction of the present findings for males was contrary to the previous findings for females (Vaught & Augustson, 1967). The earlier work showed female errors to be less when the S was field-dependent.

There was a highly significant difference ($p < .001$) between the active touch mean of 26.33 and the passive touch mean of 113.33. Fewer errors were made in active touch independent of identity group placement. This finding was in keeping with the previously reported female data.

An analysis of the within-group means (see Table 1) showed that for active touch, FI Ss made significantly fewer errors than either the M or the FD Ss ($p < .01$). This finding was also contrary to what was found for females, i.e., there were no significant differences among the identity groups for active touch in females.

Passive touch means also differed significantly; both FI and M Ss made fewer errors than the FD Ss ($p < .01$). This finding is of particular importance in that the same significant differences were found for females as reported here for males; however, the female means were in the opposite direction. While males who are field-independent make fewer errors in passive touch, females who are field-independent make more errors, and while field-dependent males make more errors in passive touch, field-dependent females make fewer errors in passive touch. This

Table 1
Mean Error Scores for all Groups

	N	RFT	Active Touch	Passive Touch
FI	14	1.10	1.00	7.07
M	14	7.04	2.43	7.57
FD	14	30.93	2.21	9.64

finding was quite unexpected in view of the direction of these differences and consequent inability of the field-dependence dimension to mask sex differences in touch.

The present results in relation to the previous study with females, while difficult to explain at this time, nevertheless suggest possible research directions. First, since level of field-dependence did not mask sex differences, particularly in passive touch, research needs to be done in which touch per se is investigated in terms of sex differences in "task meaning." Gibson (1962) has suggested that active touch differs from passive touch in a number of ways and it apparently differs for each sex as well. Second, one might investigate the influence of an additional variable such as "vibration" on passive touch performance in males and females. Such an approach would aid in the determination of whether or not it would be possible to change the direction of female scores more in keeping with male performance as reflected in levels of field-dependence. Much more work needs to be done in this general area before reasonable conclusions are drawn.

References

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