SELECTIVE ATTENTION AND SOCIAL INTEREST

R. JOHN HUBER[1] and G. ALFRED FORSYTH
Skidmore College *University of New Hampshire*

Social interest may well be called Adler's most distinctive concept (5). In his theory it is the barometer of normality and adjustment. "All failures—neurotics, psychotics, criminals, drunkards, problem children, suicides, perverts, and prostitutes—are failures because they are lacking in social interest" (2, p. 156). Social interest thus is a crucial factor in one's development. But it does not develop like an inborn instinct, rather "it is an innate potentiality which has to be consciously developed" (2, p. 134).

Ansbacher (5) has made a distinction between the object dimension and the process dimension of social interest. The former has been described as ranging from a feeling of belonging among others to no less than a harmonious communion with the cosmos. The latter refers to the behavioral and perceptual aspects. The behavioral aspect has been described, according to Huber (12), as an empathic, cooperative style of living. The perceptual aspect reflects Adler's conviction that perception is selective in accordance with the individual's style of life. He called this selectivity, "schema of apperception" (2, p. 182), later one's "conception of oneself and the world" (1, p. 19).

Through consideration of the above, (*a*) that one's mode of perceiving is part of one's life style; (*b*) that social interest is a matter of conscious development which can be assumed normally to increase with age during childhood; (*c*) that maladjustment is characterized by deficient social interest, we arrived at the following two hypotheses:

1. Selective attention to the human aspects of projective stimuli will increase with age.
2. Selective attention to the human aspects of projective stimuli will be lower for mental patients than for normal subjects.

Research with Rorschach and Holtzman inkblots provides some support for these hypotheses. Regarding Hypothesis 1, Thorpe and Swartz (21) noted a significant increase in human (H) responses from first to seventh grade in school. Regarding Hypothesis 2, Holtzman (11) found that schizophrenics gave significantly fewer H responses

[1]For reprints write to principal author, Department of Psychology, Skidmore College, Saratoga Springs, N. Y. 12866.

than normals. Ames *et al.* (3, 4) have noted that H responses on the Rorschach are positively related to age and adjustment.

Further support is found in observations and some research in reference to the Draw-a-Person test. Machover (16) noted that facial omissions in drawings are indicative of difficulty in social relations. Combining Adler's notion that mental illness implies deficient social interest with Machover's facial hypothesis, one would expect maladjusted *S*s to be less facially oriented in their drawings than controls. This supposition has been supported by several studies, e.g., Brill (7), Baldwin (6), Holzberg and Wexler (9, 10), Koppitz (14) and Vane and Eisen (22).

Few studies have had the specific goal of studying the relationship between facial attention on the Draw-a-Person test and social interest. Richey and Spotts (17), Stone and Ansbacher (19), and Strümpfer and Huysamen (20) have all found significant correlations between facial attention in drawing and scores on paper and pencil personality inventories which could be taken as indicators of social interest. The degree of the relationship found differed widely in these studies which employed different dependent and criterion variables.

A previous study by Huber and Stiggins (13) provided tentative support for the hypothesis that attention to the human aspect in a double-aspect non-human vs. human stimulus, e.g., Rubin's (18) vase-faces, is positively related to age and adjustment.

The purpose of the present study was to clarify this observation. More specifically, the stimuli were systematically varied to test the Stone and Ansbacher (19) hypothesis that attention to the communication organs (eyes, ears, nose, mouth) is a better indicator of social interest than attention to the whole face. The subjects were children of different ages and mental patients with different diagnoses, to assess the relationship of age and kind of mental disorder to attention to, or perception of, the human aspect.

METHOD

Subjects

The following groups, 575 *S*s in all, participated in the study:

300 children from Portsmouth, N. H., City Schools: 25 boys and 25 girls from 1st, 3rd, 5th, 7th, 9th, and 11th grades each;

102 University of New Hampshire students enrolled in an introductory psychology course (51 men and 51 women);

123 New Hampshire State Hospital, Concord, patients diagnosed as schizophrenic (25 men, 25 women, mean age 52 years); sociopathic (30 men, 16 women, mean age 36 years); neurotic (8 men, 19 women, mean age 47 years); and

50 "normal" adults (30 men, 20 women, mean age 46 years, of whom 19 were business men and 31 high school teachers).

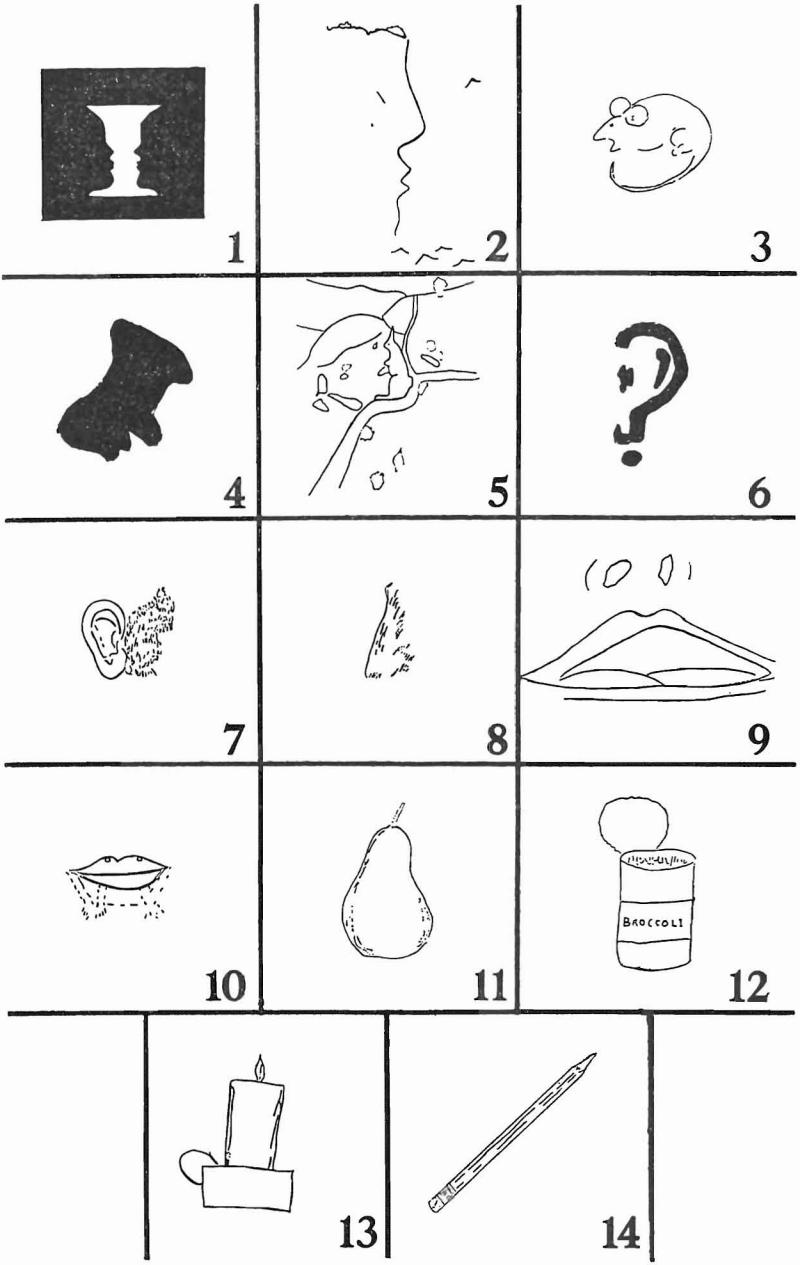

FIGURE 1. Double-aspect designs used as stimuli (1-10) and "buffer" items (11-14). For further description see Table 1 and text.

Stimuli

Ten double-aspect designs were used which could be seen as non-human (NH) or human (H). Of the latter aspect half were whole faces (WF) and the other half, communication organs (CO). In addition four buffer designs were used. All 14 designs are shown in Figure 1. Designs 1-5 are the WF stimuli, 6-10 the CO stimuli, 11-14 the buffer stimuli.

The experimental stimuli had been adjusted in preceding studies so that each aspect would have an approximately even chance of being perceived. Table 1. gives the percentages of H and NH responses obtained in these studies.

TABLE 1. PERCENTAGES OF HUMAN (H) AND NON-HUMAN (NH) RESPONSES TO DOUBLE-ASPECT DESIGNS, AND NUMBER OF *Ss*, COLLEGE STUDENTS, USED WITH EACH DESIGN

Whole-face designs (WH)	Responses H	NH	N	Communication-organ designs (CO)	Responses H	NH	N
1. vase—faces (after 18)*	37	63	97	6. question—ear	54	46	39
2. cliff—face	57	43	106	7. squirrel—ear	58	42	125
3. rat—man (8)	70	30	98	8. cliff—nose	45	55	38
4. dog—chef (24)	45	55	51	9. mountain—mouth	58	42	127
5. rabbit—pirate (15)	60	40	124	10. frog—mouth	62	38	124
Mean	54	46		Mean	55	45	

*Reference numbers after designs 1, 3, 4 and 5 are to the sources of the designs.

Procedure

An overhead projector was used to flash an 18 x 26 inch image of each design on a portable screen for one second.

Ss were tested individually on the ten designs. *S* was seated eight feet from the screen and instructed: "I am going to show some pictures on the screen in front of you. Your job is to tell me what you see in the pictures—what the pictures look like to you. Do you understand? Let's try one just for practice. Here is the first picture." This was a neutral practice item, # 14, a pencil, so *S* could acclimate to the task. First and third grade *Ss* were told they were playing a game.

Ss' responses were scored "human" or "non-human," e.g., "faces" or "vase," respectively, in item # 1. Buffer items 11, 12, 13, were interspersed to break set and make insight into the purpose of the experiment on the part of *S* more difficult. The order of stimulus presentation was reversed for 50% of ths *Ss* in each condition, to counterbalance for order and position effects.

Ss were questioned concerning insight and set at the end of the session. It was necessary to eliminate five college *Ss* because of set (human). One high school student and one patient were eliminated because they could see neither vase nor faces. Finally, seven patients were eliminated because they were too ill to respond.

RESULTS

Table 2 presents the mean number of "human" responses to the WF and CO stimuli for the 8 age categories. An 8 x 2 Age-Category by Stimulus-Type analysis of variance, with repeated measures on

TABLE 2. MEAN NUMBER OF HUMAN RESPONSES TO WHOLE-FACE AND COMMUNICATION-ORGAN DOUBLE-ASPECT DESIGNS, BY AGE. TOTAL N = 452

	Grade (N = 50 each grade)						College	Adult
	1	3	5	7	9	11	N=102	N=50
Whole-face design	1.1	1.9	2.3	2.8	2.2	2.9	2.7	3.0
Comm.-organ design	1.9	2.3	1.8	2.5	2.3	2.9	2.4	2.5

the Stimulus-Type variable, was carried out. Since there were unequal cell Ns, an unweighted means solution recommended by Winer (26) was used. The results are summarized in Table 3.

TABLE 3. ANALYSIS OF VARIANCE OF MEAN NUMBER OF H RESPONSES TO WF AND CO STIMULI BY *Ss* OF DIFFERENT AGE CATEGORIES

Source	df	MS	F
Between *Ss*	451		
Age-Category (A)	7	20.693	14.212*
SSe	444	1.456	
Within *Ss*	452		
Stimulus-Type (B)	1	.373	.355
A x B	7	5.288	5.036*
B x SSe	444	1.050	

*$p < .005$.

A significant Age-Category by Stimulus-Type interaction qualified the significant Age-Category main effect. An analysis of simple main effects indicated that age had a significant effect with WF items ($F = 16.80$, $df = 7/888$, $p < .005$) and with CO items ($F = 4.55$, $df = 7/888$, $p < .005$). Yet with WF items the effect is much greater as the larger F value at WF suggests (23). An analysis of differences in trend indicated a steeper linear slope across age categories for WF stimuli than for CO stimuli. A linear function accounted for 71% of the variability associated with Age-Category using WF items, and 42%, using CO items.

Table 4 presents the mean number of "human" responses to WF and CO stimuli for three psychiatric diagnostic categories and adult controls. A 4 x 2 Psychiatric Diagnosis by Stimulus-Type analysis of variance with repeated measures on the Stimulus-Type variable was performed. Winer's (28) unweighted means solution was again called for. The analysis of variance results are summarized in Table 5.

TABLE 4. MEAN NUMBER OF HUMAN RESPONSES TO WHOLE-FACE AND COMMUNICATION-ORGAN DOUBLE-ASPECT DESIGNS, BY PSYCHIATRIC DIAGNOSIS. TOTAL N = 173

	Schizophrenic N = 50	Neurotic N = 27	Sociopathic N = 46	Normal adult N = 50
Whole-face design	2.86	2.92	2.74	3.06
Comm.-organ design	1.58	1.78	2.04	2.50

TABLE 5. ANALYSIS OF VARIANCE OF MEAN NUMBER OF H RESPONSES TO WF AND CO STIMULI BY *Ss* OF DIFFERENT PSYCHIATRIC DIAGNOSES

Source	df	MS	F
Between *Ss*	172		
Diagnosis (A)	3	4.700	3.394*
SSe	169	1.385	
Within *Ss*	173		
Stimulus-Type (B)	1	68.397	66.925**
A x B	3	2.397	2.345†
B x SSe	169	1.022	

† $.10 > p > .05$; * $p < .05$; ** $p < .005$.

Significant main effects were observed for both Diagnosis and Stimulus-Type. Because of the large Diagnosis by Stimulus-Type interaction ($.10 > p > .05$), an analysis of simple main effects was computed. This analysis indicated significant variability between diagnostic groups with CO stimuli ($F = 5.29$, $df = 3/338$, $p < .005$); but diagnostic groups were not significantly different on WF stimuli ($F = .59$, $df = 3/338$, $p > .05$).

Further tests indicated that the normal adult *Ss* gave significantly more human responses than each of the three pathological groups. The only significant difference between pathological groups was the greater number of human responses by sociopaths than by schizophrenics.

DISCUSSION

Taking attention to the human aspect of a double-aspect stimulus as a sign of social interest, we found that the results support the Adlerian hypotheses of a relationship of social interest to age and adjustment. However the type of stimulus is a crucial factor.

The significant simple main effect of Psychiatric Diagnosis with CO items is in accord with the hypothesis. As predicted, all groups of patients gave significantly fewer H responses than the controls—to CO stimuli, but not to WF stimuli. In support of Huber and Stiggins' (15) previous contention, sociopaths showed greater human orientation than schizophrenics.

Previous contentions, however, that the perceptual style of mental patients is childlike (13, 25) must be qualified. While mental patients gave fewer H responses than controls to CO stimuli, children gave fewer H responses than adults to WF as well as CO stimuli; but WF stimuli were actually more effective in discriminating among age groups. With CO items, reversals in the overall positive linear age trend were obtained. These reversals occurred with 5th and 9th graders and college students. Perhaps the CO items are particularly sensitive to difficulties in adjustment. In the two grades which showed reversals, in contrast with the other grades, several students expressed dissatisfaction with their school environment, and among the college students there may be a difficulty with a new mode of living for underclassmen.

The results would seem to indicate that WF and CO items are related to two different factors: CO items might be related to adjustment and thus social interest, while WF items might be more related to a global human orientation reflecting one's increasingly frequent social contacts as one grows older. In this case one would expect only the CO items to discriminate between mental patients and normal adults, whereas WF items would be expected primarily to differentiate among children of different ages.

SUMMARY

This study is based on the assumption that in double-aspect figures with one human aspect, attention to the latter would be an expression of the Adlerian concept of social interest. This led to the hypotheses that (*a*) in children attention to the human aspect would increase with age, and (*b*) in mental patients it would be lower than among normal controls. To test these hypotheses 10 double-aspect figures, in 5 of which the human aspect was a whole face (WF) while in the other 5 it was a "communication organ" (eye, ear, nose, or mouth) (CO), were presented to 575 subjects of eight age and four mental-health categories. In the children it was found that WF perception progressed linearly with age, while with CO perception this

relationship was significantly less linear. Mental patients on the other hand, did not differ significantly from normal controls in WF perception, while CO perception decreased significantly with severity of the disorder. It would seem then that WF perception is more a function of normal maturation, while CO perception is more a function of mental health.

REFERENCES

1. ADLER, A. *Social interest: a challenge to mankind* (1933). New York: Putnam, 1964.
2. ADLER, A. *The Individual Psychology of Alfred Adler.* Ed. by H. L. & Rowena R. Ansbacher. New York: Basic Books, 1956.
3. AMES, L., LEARNED, J., METRAUX, R., & WALTER R. *Child Rorschach responses.* New York: Hoeber, 1952.
4. AMES, L., LEARNED, J., METRAUX, R., & WALTER, R. *Rorschach responses in old age.* New York: Hoeber, 1954.
5. ANSBACHER, H. L. The concept of social interest. *J. Indiv. Psychol.*, 1968, 24, 131-149.
6. BALDWIN, I. T. The head-body ratio in the human figure drawings of schizophrenic adults and normal adults. *J. proj. Tech.*, 1964, 28, 393-396.
7. BRILL, M. A study of instability using the Goodenough Drawing Scale. *J. abnorm. soc. Psychol.*, 1937, 32, 288-302.
8. BUGELSKI, B. R., & ALAMPAY, D. A. The role of frequency in developing perceptual sets. *Canad. J. Psychol.*, 1961, 15, 205-211.
9. HOLZBERG, J. D., & WEXLER, M. The validity of human form drawings as a measure of personality deviation. *J. proj. Tech.*, 1950, 14, 343-361.
10. HOLZBERG, J., & WEXLER, M. A. A further study of human form drawings in personality deviation. *J. proj. Tech.*, 1952, 16, 249-251.
11. HOLTZMAN, W. H. Holtzman Inkblot Technique. In A. I. Rabin (Ed.), *Projective techniques in personality assessment.* New York: Springer, 1968. Pp. 136-170.
12. HUBER, R. J. Social interest revisited. Paper presented at NSF Institute for the History of Psychology, Durham, N. H., July, 1968.
13. HUBER, R. J., & STIGGINS, R. J. Double-aspect perception and social interest. *Percep. Mot. Skills*, 1970, 20, 387-392.
14. KOPPITZ, E. Emotional indicators on human figure drawings of shy and aggressive children. *J. clin. Psychol.*, 1966, 22, 466-469.
15. LEEPER, R. W. A study of a neglected portion of the field of learning: the development of sensory organization. *J. genet. Psychol.*, 1935, 46, 41-75.
16. MACHOVER, K. *Personality projection in the drawings of the human figure.* Springfield, Ill.: Thomas, 1949.
17. RICHEY, M. H., & SPOTTS, J. V. The relationship of the popularity to performance on the Goodenough-Draw-A-Man Test. *J. consult. Psychol.*, 1959, 23, 147-150.
18. RUBIN, E. *Synsplevede figurer.* Copenhagen: Glydenalski, 1915.
19. STONE, P. A., & ANSBACHER, H. L. Social interest and performance on the Goodenough-Harris-Draw-A-Man Test. *J. Indiv. Psychol.*, 1965, 21, 178-186.
20. STRÜMPFER, D. J. W., & HUYSAMEN, G. K. Correlates of the communication organ score on the Harris-Goodenough Drawing Test. *J. Indiv. Psychol.*, 1968, 24, 60-62.

21. THORPE, J. S., & SWARTZ, J. D. A developmental analysis by means of the Holtzman Inkblot Technique. *J. proj. Tech. Personal. Assess.*, 1966, 30, 447-451.
22. VANE, J., & EISEN, V. The Goodenough Draw-A-Man Test and signs of maladjustment in kindergarten children. *J. clin. Psychol.*, 1962, 18, 276-279.
23. VAUGHN, G. M., & CORBALIS, M. C. Beyond tests of significance: estimating strengths of effects in selected ANOVA designs. *Psychol. Bull.*, 1969, 72, 204-213.
24. WALLACH, H., & AUSTIN, P. A. Recognition and localization of visual traces. *Amer. J. Psychol.*, 1954, 67, 338-340.
25. WERNER, H. *Comparative psychology of mental development.* 2nd ed. New York: Int. Univ. Press, 1948.
26. WINER, B. J. *Statistical principles in experimental design.* New York: McGraw-Hill, 1962.