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"IMPULSIVE" AND "NEUROTIC" INMATES: A STUDY IN PERSONALITY AND PERCEPTION*

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In a recent exploration,[1] it was discovered that the perception of "violence" in a laboratory situation is correlated with a tendency to behave violently among institutionalized offenders. The study described here extends this experiment. The question investigated is whether inmates who easily perceive nakedly impulsive actions are those whose personality is constituted so that they tend to express their own impulses with relative ease. Conversely stated, the problem is whether one of the manifestations of extreme impulsivity (of the type encountered among our more assaultive offenders) is an increased awareness of impulsive behavior in others. The practical question is whether susceptibility to "impulsive content" in the laboratory has diagnostic or prognostic value in the treatment of anti-social problems.

In the exploratory experiment we have referred to, the method used was that of presenting a picture depicting "violent" content to one eye and a "neutral" picture to the other eye with a stereoscope, and recording which of these two stimuli the person sees. A majority of the inmates who saw a relatively large number of "violent" pictures in this situation subsequently developed into disciplinary problems. In a parallel study, this type of inmate was also shown to have a relatively dramatic history of assaultive behavior.[2]

In the investigation we are reporting here, this work is extended in two directions: (1) pictures are used which feature drives *other than violence* (food and sexual gratification) in either blatant or "socialized" form, and (2) two groups of inmate observers are pre-selected in terms of a demonstrated tendency either (a) to consistently express their impulses when provoked, or (b) to struggle with their impulses so as to develop anxiety, psychosomatic symptoms, and other indications of conflict. In clinical parlance, we have chosen inmates who either show extreme neuroticism and suppress their impulses, or else manifest impulsivity and express their impulses in anti-social ways. It is expected that there will be a relationship between the way a person behaves and the way he perceives. Impulsive behavior should be associated with a heightened perception of impulse content and nonimpulsive behavior with a lessened perception of such content.

PROCEDURE

Subjects

The observers used in the study were drawn from among inmates of the State Prison of Southern Michigan at Jackson. Sixty men were selected on the basis of (1) their disciplinary record in the institution; (2) their scores on selected scales of the Minnesota Multiphasic Personality Inventory (administered to all inmates as part of their intake procedure); and (3) case history data. Our attempt was to obtain a group of 30 men who had shown relatively clear indications of impulsivity, and a comparable group of 30 individuals with neurotic symptoms.

The Impulsive Group comprised men with a minimum of two disciplinary convictions ("tickets") or violations serious enough to warrant "Total Segregation" during the previous year of confinement. On the MMPI, these men were re-

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[1] Shelley & Toch, *The Perception of Violence as an Indicator of Adjustment in Institutionalized Offenders*, 53 J. CRIM. L., C. & P.S. 463 (1962).

[2] Putoff, *A Study of Perception of Violence*, 4 RESEARCH NEWSLETTER 1 (Calif. Dep't Corrections 1962).

quired to have obtained (1) a Pd Score two Standard Deviations above the mean, and (2) Scores of less than one Standard Deviation above the mean on all three scales of the Neurotic Triad (Hs, D, and Hy). Information from case history material had to support the assumption of chronic impulsivity.

An absence of disciplinary violations in the institution was required of the Neurotic Group. In addition, men classified as Neurotic had to have achieved scores of two Standard Deviations above the mean on *at least two* of the Neurotic Scales. In the event of a lower score on one of these three scales, a Pd Score less than one Standard Deviation above the mean was also required. The case histories of the men in the Neurotic group had to contain evidence of emotional problems usually associated with neurosis (anxiety attacks, psychosomatic diseases, gross introversion, etc.). Table I contains the mean MMPI Scores and their ranges for the subjects who were thus selected.

Neurotic and Impulsive subjects were matched on ethnic background, age, intelligence, and length of time served on their current sentence. Each group contained 16 Negro and 14 White persons; the age range was 21 to 44, with a mean of 31; the IQ's averaged 98 (with extremes of 72 and 125). The average time already spent in the institution ranged from 7 months to 55 months, with an average of 26 months served.

TABLE I

NEUROTIC TRIAD (Hs, D, Hy) AND PSYCHOPATHIC DEVIATE (Pd) RANGES AND MEANS FOR INMATES SELECTED AS NEUROTICS AND IMPULSIVES

Scale	Neurotics (N = 30)	Impulsives (N = 30)	Diff.	t
Hs Range	62–110	31–59		
Hs Mean	78.77	49.20	29.57	12.37**
D Range	70–90	44–60		
D Mean	76.80	55.83	20.97	12.52**
Hy Range	70–95	40–64		
Hy Mean	77.10	52.63	24.47	14.40**
Pd Range	60–90	70–102		
Pd Mean	75.33	79.03	3.70	1.83*

* Significant at .05 level.

** Significant at .01 level.

Apparatus

The equipment used for the study was comparable to that used in previous studies.[3] It consisted of a prism stereoscope enclosed in a light-proof box, with each field illuminated by a 7½ Watt bulb. Brightness could be controlled with a Variable Transformer, and it could be gauged by means of a Voltmeter. Exposure time of the material was regulated with a Hunter Decade Interval Timer.

Stimulus Material

Twelve slides (six stereograms) were painted for the experiment by an inmate artist.[4] Each set of two slides contained figures roughly comparable in size, outline, and position in the visual field. The slides in each pair featured one or more persons satisfying some human need, with one picture containing a relatively blatant expression of impulse, and the other a more socialized or civilized expression. A short description of the six slides follows:

(1) The "Lover-Groom" Slide: Both pictures feature a man embracing a woman. In the "impulsive" picture, the backdrop consists of a bed. In the "socialized" version, the woman wears a bridal dress and the man a top hat, and the backdrop consists of an altar.

(2) The "Striptease-Show" Slide: Both pictures contain persons watching a female stage performer. In the "socialized" picture the performer is dressed; in the "impulsive" scene she is not.

(3) The "Beer-Coffee" Slide: Both pictures feature a man drinking against a counter or stove. In one case he holds a coffee cup; in the other, he drinks out of a beer mug.

(4) The "Glutton-Diner" Slide: A man is depicted eating, with the difference being the manner in which he eats. The "impulsive" version consists of a meal "a la Henry VIII," consisting of an entire chicken devoured "in the rough." The parallel scene is a conventional knife-and-fork meal.

(5) The "Rapist-Dancer" Slide: One picture features a couple dancing, while in the other picture, the man is violently struggling with his partner, whose clothes he is tearing off.

[3] See *supra* note 1. See also Engel, *The Role of Content in Binocular Resolution*, 69 AM. J. PSYCHOL. 87 (1956). For a review of early research, see Engel, *Binocular Methods in Psychological Research*, in KILPATRICK, EXPLORATIONS IN TRANSACTIONAL PSYCHOLOGY, ch. 15 (1961).

[4] In this connection, the authors are very indebted to Joe DeCoulode.

(6) The "Brawler-Boxer" Slide: Two men are engaged in battle. In one case, the scene is a ring and the action is boxing. In the other scene, a club is being employed as a weapon.

Procedure

Each subject was presented with the series of six stereograms in the order in which they are described above. The "impulsive" picture was presented alternately to the left and right eye, to control for eye dominance. The series was then administered again, starting with the opposite eye. This made it possible for each observer to be presented with each picture to each of his eyes.

Every subject was instructed that he would be shown "different scenes from life." He was told that the pictures would be presented for a short time only, and that after each presentation he was to describe what he had seen. Exposure time of the stereograms was 0.5 sec., and the brightness was maintained at about 14 candles/ft^2. The entire procedure occupied 15 to 20 minutes. All of the subjects were cooperative and appeared to be interested in the task.

The subjects were processed in systematically randomized order to protect the experimenter from bias. A code was assigned to each protocol, and it was eventually scored, counting the total number of "impulsive" and "socialized" pictures perceived by every subject.

Results

Each of our 60 observers had been asked to make 12 observations in the stereoscope. Out of the resulting 720 reports, 708 could be classified as either "impulsive" or "socialized" perceptions responsive to the pictures being viewed. Around half the total number of percepts (363) proved "impulsive," and the remainder (345) were "socialized." Most of the slides drew more "impulsive" than "socialized" responses. This held most true for the "Beer-Coffee Drinker" Slide (85 I to 34 S), the "Striptease-Show" Slide (70 I to 47 S) and the "Glutton-Diner" Slide (69 I to 46 S). The "Brawler-Boxer" Slide was the only dramatic exception, with 22 "impulsive" observations to 98 "socialized" percepts.

To test the discriminating power of our instrument and the reliability of our six stereograms, we "item analyzed" our responses. Table II shows the reactions to each slide of the Upper and Lower Quartile of the total group of subjects. The table

TABLE II

Responses to the Six Stereograms by the Upper and Lower Quartile of the Total Group of Inmates

Slide	Observers with: Eight (8) or More Impulsive Percepts (N = 17) — Picture Perceived: Impulsive	Eight (8) or More Impulsive Percepts (N = 17) — Picture Perceived: Socialized	Four (4) or Fewer Impulsive Percepts (N = 14) — Picture Perceived: Impulsive	Four (4) or Fewer Impulsive Percepts (N = 14) — Picture Perceived: Socialized
Bride-Lover	26	8	15	12
Show-Strip	25	9	7	21
Coffee-Beer	32	2	4	22
Diner-Glutton	28	6	10	15
Dancer-Rapist	25	9	7	21
Boxer-Brawler	13	21	2	26
Total	149	55	45	117

shows that all six slides appear to discriminate between the high scoring and the low scoring groups. The stereograms which seem to distinguish the groups most dramatically (show-strip, coffee-beer, and dance-rape) deal with different impulses. The "boxer-brawler" slide appears to be the only marginal item, apparently due to the large plurality of "socialized" responses it evoked.

Our principal concern was, however, whether the stereograms discriminated between the Impulsive and Neurotic Groups, in the predicted direction. The answer to this question is available in Table III, which details the number of "impulsive" pictures perceived by the two groups. The mean number of "impulsive" percepts is 5 for our Neurotics and 7.1 for the Impulsive subjects. The range of responses by the Neurotics is 1 through 8; the Impulsive subjects saw between 4 and 11 "impulsive" pictures. The difference between these distributions is clearly significant ($t = 4.28$, $df = 58$, p = less than .01; Median Test, $X_c^2 = 80.6$, $df = 1$, p = less than .01).

The instrument also proved to be reliable in distinguishing between the two groups, and Kuder Richardson Test of Internal Consistency yielded KR_{20} scores of .262 for the Neurotic Group, and .444 for the Impulsives. As additional evidence of reliability, Table IV lists the number of "impulsive" percepts of the two groups in response to

individual slides. In all six cases, the number of "impulsive" pictures perceived by the Impulsive inmates exceeds the number of "impulsive" pictures seen by the Neurotics. Again, the slides which appear to discriminate best cut across content areas.

The results in Table IV hold for both the first and the second (repeat) presentation of the six slides. However, the first showing of the slides appeared to be more effective in discriminating between the two groups of subjects. Although every difference obtained was in the direction of the Impulsive observers reporting more "impulsive" pictures, 40 out of the 67 differences recorded in Table IV stem from the first presentation of the slides. When we averaged the "impulsive" percepts separately for the first and second presentation of the slides, the reason for this difference emerged. In the first presentation of the slides, Impulsive subjects averaged 3.3 "impulsive" percepts (out of six) and the Neurotic group scored 2.2. In the "Repeat" series, the scores were 3.9 and 3.0 respectively. In other words, in the second presentation of the slides most subjects (in *both* groups) saw *more* impulsive pictures.

What about eye dominance as a factor possibly influencing our results? A separate analysis of data obtained only from subjects who saw approximately the same number of pictures with the left and right eye (6-6 and 5-7 only) yielded reassuring results. The scores obtained by these 39 subjects were identical with those achieved by the total group.

TABLE III

NUMBER OF IMPULSIVE PICTURES PERCEIVED BY IMPULSIVE AND NEUROTIC INMATES

Number of Impulsive Pictures Seen	by Neurotic Inmates (N = 30)	by Impulsive Inmates (N = 30)
0		
1	1	
2	2	
3	3	
4	5	3
5	8	4
6	4	5
7	4	4
8	3	5
9		6
10		2
11		1
12		
Mean	5	7.1

TABLE IV

NUMBER OF IMPULSIVE PICTURES PERCEIVED BY IMPULSIVE AND NEUROTIC INMATES

	Neurotics (N = 30)	Impulsives (N = 30)	Diff.
1. Beer (Coffee) Drinker	33	52	19
2. Lover (Bridegroom)	22	40	18
3. Glutton (Diner)	29	40	11
4. Rapist (Dancer)	23	32	9
5. Striptease (Show)	32	38	6
6. Brawl (Boxer)	9	13	4
Total	148	215	67

DISCUSSION

Inmates who have a tendency to "act out" their impulses seem to perceive more "impulsive" material in our test situation than inmates who show signs of inner conflict. This obviously confirms the diagnostic value of our perceptual task. However, what does it *mean?*

If we present a picture to a person's left eye, and another to his right, for a very short time--just short enough for him to see one picture clearly—he will perceive Picture A, Picture B, or Combined Picture AB. If we preclude the last of these alternatives, and make the two pictures roughly equivalent (both objectives can be achieved by skillfully selecting or drawing pictures) we can assume that whether a person sees Picture A or Picture B will be determined by chance. In other words, he should see Picture A and Picture B approximately 50% of the time. What if, under these circumstances, Person 1 sees mostly Picture A and Person 2 reports mainly Picture B? Should this occur, we would suspect that the cards are "stacked." We would assume that something in Person 1's perceptual orientation toward the world makes him relatively responsive to stimuli falling in Category A, while Person 2 responds more easily to events of Type B. This "something" may be past experience (Person 1 may have grown up surrounded by A's, whereas Person 2 may have wallowed in an ocean of B). Or it may be some special sensitivity (Person 1 may be desperately afraid of A's, and may watch

for them diligently). It may involve strong likes or dislikes (Person 2 may be drawn to B like a magnet, but may try to ignore every A he encounters). Sometimes, of course, it may simply be a matter of anticipation or expectation in a given context (Person 1 may expect to encounter A in certain situations and Person 2 may assume he'll be presented with B).

Whatever the motivation, the result would be that one type of stimulus has easier access to awareness than the other. The welcome mat of the senses is spread out more generously for it and the rails to consciousness are more copiously greased as it approaches. The precise physiological processes involved here may not be known to us for some time. But we can study the results and take some educated guesses about reasons. Thus, for instance, when we find in our experiment that "impulsive" pictures were more frequently perceived when the slides were presented for the second time, we may guess that this occurred because our subjects had been alerted to the presence of this type of material. We further assume that the *general* expectation of "impulsive" pictures facilitated the perception of *individual* "impulsive" pictures.

By the same token, our main findings suggest that the motives which govern a person may also help to accentuate or stress relevant aspects of the environment. Thus, a relatively unsocialized person, who is directly impelled by his physiological urges, may have his attention directed at whatever remnants of the jungle survive in comparatively socialized surroundings. Ordinarily, of course, this might be difficult to ascertain, because routine life situations do not provide observable forced choices in interpretation, as does our stereoscope. But the fact that this sort of perceptual effect is not readily apparent does not mean that it could not be playing a very real role in everyday life. It is thus possible that a person with the facility of "spotting" opportunities for gratification is most likely to grasp such opportunities. If the presence of food anywhere in one's geographical vicinity represents an invitation to a snack, or if any face within striking distance appears to be "asking for a punch in the nose," the relevant impulses can be readily discharged. It is also plausible that if life has always constituted an arena in which wishes have been consummated, this can develop an increased sensitivity toward opportunities for gratification. The perennial seducer thus comes to view every new female acquaintance as a candidate for his bedroom.

A second assumption which our study seems to support is the premise that impulses do not necessarily assert themselves in discrete and compartmentalized fashion. It is true, of course, that our inmates had in the past for the most part expressed themselves through aggression and violence. And yet, the relatively high responses of our Impulsive group occurred with respect to pictures featuring eating, drinking, and sex. This would imply that the impulsivity of at least these men could potentially display itself on a variety of stages.

In the absence of any kind of "control," the present study permits conclusions about only two highly selected groups. We can only guess at the question: How would "normal," completely socialized observers compare with our inmates? In the light of data obtained in previous studies using similar slides,[5] it would seem that non-Neurotic non-Impulsive persons would probably score lower than our Neurotic group. If this were confirmed, it would imply that our research explored two positions along a perceptual dimension which ranges from "extremely socialized" and "controlled" through "completely unsocialized" or "weakly controlled." Our perceptual score, in other words, might reflect—at least in part—the *extent* to which impulses assert themselves freely in our subjects. The precise nature of this relationship awaits exploration.

[5] Toch, *Readiness To Perceive Violence as a Result of Police Training*, 52 BRIT. J. PSYCHOL. 389 (1961).