

# Personality characteristics of volunteers for painful experiments

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A number of researchers have suggested that voluntary participation in pain studies is a function of psychopathology. The present investigation tested the hypothesis that high-tolerance volunteers for painful experiments would be psychologically stable individuals. After performing a series of painful psychomotor performance exercises, 30 adult males completed four personality questionnaires. In terms of temperament, volunteers were found to be more intelligent, realistic, happy, energetic, and optimistic than a matched group of control subjects. The role of extraversion in explaining the hedonistic motives of volunteers was explored.

Many previous investigations of individual differences in the effects of pain on volunteer subjects have concentrated extensively on the relationship between pathological personality characteristics and pain tolerance. For example, Lynn and Eysenck (1961) found a negative correlation between resistance to pain and neuroticism scores on the Maudsley Personality Inventory. Similarly, Klapper, McColloch, and Merkey (Note 1) reported that low-tolerance volunteers exposed to a powerful skin irritant manifested "significantly higher scores on the lie (L), . . . hysteria (Hy), repression (R), and functional low-back pain (Lb) scales of the MMPI" (p. 3).

Clearly, however, it can be argued that in most instances the volunteer for a pain experiment has knowingly and willingly agreed to expose himself to discomfort, a decision that, heuristically, would only have been made after careful, rational deliberation. Thus, the present study tested the hypothesis that volunteers for painful experiments are psychologically stable persons.

## METHOD

Thirty adult male government employees (mean age = 28.6 years; SD =  $\pm 10.3$ ) served individually as volunteers in a series of painful psychomotor performance exercises (Gray, Note 2). Subsequently, each subject completed the Clinical Analysis Questionnaire (CAQ; Delhees & Cattell, 1975), Eysenck Personality Inventory (EPI; Eysenck & Eysenck, 1968), IPAT Depression Scale (Krug & Laughlin, 1976), and Motivation Analysis Test (MAT; Cattell, Horn, Sweeney, & Radcliffe, 1964).

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## RESULTS

Compared to a matched control group (men who completed the questionnaires after formally choosing not to participate in the pain exercises), experimental subjects obtained higher CAQ scores on intelligence (Factor B: more intelligent, abstract thinking, bright) and harria (Factor I: tough-minded, self-reliant, realistic), and lower scores on hypochondriasis (Factor D<sub>1</sub>: is happy, mind works well, does not find ill health frightening) and high-energy euphoria (Factor D<sub>5</sub>: shows enthusiasm for work, is energetic, sleeps soundly). In addition, volunteers scored lower (27th percentile) on the IPAT Depression Scale, but higher on the extraversion (E) dimension of the EPI. Finally, with respect to dynamic factors (MAT), high tolerance for pain was associated with a weak superego response, but high totals on narcissism-comfort and pugnacity-sadism.<sup>1</sup>

## DISCUSSION

The temperament data (CAQ and IPAT Depression Scale scores) were generally indicative of the volunteers' psychological stability. The hypothesis was further substantiated by the finding that the EPI neuroticism (N) mean (55th percentile) for the experimental subjects was not significantly different from the control group average (cf. Lynn & Eysenck, 1961).

Interpretation of the motivation results, on the other hand, was more complex. First, the low superego score suggests that the experimental subjects may have participated partly because they "wanted to," rather than because their consciences demanded that they "should."

Second, on initial examination it seems paradoxical that volunteering for a painful experiment would be associated with a high level of narcissism-comfort. However, it must be remembered that the typical subject in the present study was an extravert, someone who "craves excitement, takes chances, often sticks his neck out, . . . generally likes change" (Eysenck & Eysenck, 1968, p. 6), and has an above-average tolerance for pain (Eysenck, 1967). Thus the volunteer's stimulation-seeking (i.e., extraverted) behavior may also have satisfied his motiva-

tion toward "sensual indulgence of all kinds and [consequent production of physical and psychological] ease" (Cattell et al., 1964, p. 22), thereby contributing to the "positive hedonic tone" (Eysenck, 1967, p. 109) underlying high narcissism-comfort scores.

Finally, it was intriguing that the constellation of high narcissism-comfort, high pugnacity-sadism, and low superego coincided almost perfectly with Cattell's (1967) description of the underachiever. It is possible to explain this initially surprising finding by noting that the majority of experimental subjects were junior technicians, who, again as a function of their extraverted natures, may have volunteered for painful experiments in order to have a break from their secure but tedious occupations.

These interpretations are in some cases impressionistic, and they may be modified by further research. Nonetheless, the personality data described above are certainly not indicative of psychopathology; rather, they illustrate clearly the psychological health of pain-experiment volunteers.

#### REFERENCE NOTES

1. Klapper, J. A., McColloch, M. W., & Merkey, R. P. *The relationship of personality to tolerance of an irritant compound* (Tech. Rep. 4577). Edgewood, Md: Department of the Army, 1971.
2. Gray, A. Personal communication, July 1976.

#### REFERENCES

- CATTELL, R. B. *The scientific analysis of personality*. Baltimore, Md: Penguin, 1967.
- CATTELL, R. B., HORN, J. L., SWENEY, A. B., & RADCLIFFE, J. A. *The motivation analysis test*. Champaign, Ill: Institute for Personality and Ability Testing, 1964.
- DELHEES, K. H., & CATTELL, R. B. *The clinical analysis questionnaire*. Champaign, Ill: Institute for Personality and Ability Testing, 1975.
- EYSENCK, H. J. *The biological basis of personality*. Springfield, Ill: Thomas, 1967.
- EYSENCK, H. J., & EYSENCK, S. B. G. *Eysenck personality inventory*. San Diego: Educational and Industrial Testing Service, 1968.
- KRUG, S. E., & LAUGHLIN, J. E. *IPAT depression scale*. Champaign, Ill: Institute for Personality and Ability Testing, 1976.
- LYNN, R., & EYSENCK, H. J. Tolerance for pain, extraversion and neuroticism. *Perceptual and Motor Skills*, 1961, 12, 161-162.

#### NOTE

1. All reported differences between experimental and control subjects were significant ( $p < .05$ ).

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