

Effect of Psychotomimetics (LSD and Dextroamphetamine) on the Use of Primary- and Secondary-Process Language

Michael Natale
Department of Psychiatry
Columbia University

Charles C. Dahlberg
William Alanson White Institute
New York City

Joseph Jaffe
Department of Psychiatry, Columbia University and New York State
Psychiatric Institute, New York City

The present study sought to determine the effect of psychotomimetics (LSD and dextroamphetamine) on primary-process and secondary-process language. Five-minute monologues were recorded for four psychoanalytic patients in LSD, dextroamphetamine, and placebo conditions. An intensive research design was adopted, and each subject was treated as an individual experiment: (a) One patient manifested LSD-induced attenuation of secondary-process language; (b) one patient showed LSD-induced increase of primary-process language and an increase of secondary-process language when dextroamphetamine was ingested. The present findings suggest that psychotomimetics do affect ego functioning as expressed in language but that the nature of the effect (inhibition or disinhibition) is not determined by the drug alone.

It has been postulated that psychotomimetics (LSD, Ditrin, psilocybin) have certain consistent effects on verbal behavior. Gottschalk and Gleser (1964) found that LSD, psilocybin, and Ditrin promote disorientation and the use of denial language (subscale of Schizophrenia scale). Fink (1974) claims that psychotomimetics, such as dextroamphetamine, Ditrin, and LSD cause a decrease in "defensive language" (denial and disorientation). The contradictory nature of these findings may be the result of the fact that Gottschalk and Gleser's results were obtained from normals, and Fink's data were obtained from psychotic depressed patients who had received electric shock.

In light of the above-described "state of knowledge," the purpose of the present study was to verify the effects of psychotomimetics on

ego functioning as expressed in language use. "Predrug" and "postdrug" 5-minute monologues were recorded for four psychoanalytic patients (Jaffe, Dahlberg, Luria, & Chorosh, 1973) in LSD (50-100 mg), dextroamphetamine (15 mg), and placebo conditions. Each patient participated in 6-9 sessions for each drug condition, and an "intensive research design" was adopted, with each patient being treated as a separate experiment. Each monologue was transcribed, key-punched, and analyzed by Martindale's (1973) "count" program, which tabulates the percent frequency of words that belong to primary-process or secondary-process language categories. The results were as follows: (a) One patient manifested a significant attention of secondary-process language when under the influence of LSD, $t(7) = 2.48$, $p < .05$, two-tailed, with no significant placebo effect. (b) One patient showed a significant increase of secondary-process vocabulary when under the influence of dextroamphetamine, $t(8) = 3.07$, $p < .05$, two-tailed, and a significant increase in primary-process language after having taken LSD, $t(5) = 2.58$, $p < .05$, two-tailed, with no significant placebo effect. (c) Two patients manifested no drug or placebo effects. The present and previous findings suggest that psychotomimetics do affect ego functioning, as expressed in language, but that the nature of the effect (inhibitory or disinhibitory) is not determined by the drug alone.

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Requests for reprints and for an extended report of this study should be sent to Michael Natale, who is now at the Department of Psychology, Whitley Psychology Laboratories, Franklin and Marshall College, Lancaster, Pennsylvania 17604.

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