



Twin Research Abstracts

Starting with the present issue, our journal will periodically devote a section to a review of the growing literature on twins and twin research, reproducing abstracts of publications other than those appearing in the journal itself.

In an effort to offer an as much as possible complete coverage, a number of complementary though partly overlapping sources of information shall be scanned. Also, the single index word, Twins, usually providing only partial coverage, our scanning system will involve multiple indicators as well as actual inspection of individual abstracts where appropriate. Finally, we shall welcome information from our readers concerning omissions, whenever possible accompanied by the reprint of the omitted article and the authorization to reproduce the abstract.

Our present aim being to provide current information, we have chosen, as a starting date for our scanning process, January 1979, the year in which our journal's new series was started. Our search being essentially based on secondary sources, this will imply that papers actually published even a few years earlier will also be included. At least for the time being, however, our effort toward complete coverage will concern only the years from 1979 on.

In order to make the scanning easier for our readers, especially in view of the highly interdisciplinary character of twin research, and as a first step toward the possible establishment of some information retrieval system, the following basic classification and coding system is being tentatively adopted:

0. Twin Biology and Twin Research Methodology
 1. Multiple Pregnancy and Twin Care
 2. Twin Development and Twin Research in Developmental Studies
 3. Twin Research in Cognitive Studies
 4. Twin Research in Personality, Psychophysiology, and Psychopathology
 5. Twin Research in Substance Exposure and Cotwin Control Studies
 6. Twin Research in Physiology and Anthropology
 7. Twin Research in Clinical Studies

The abstracts are accordingly subdivided into sections and each abstract is identified by a 5-digit code number (flush left), the first two digits giving the year of publi-

cation (of the original article, not of the abstract by the secondary source) and the following three digits giving a consecutive number within the attributed classification group. Title, author(s) with affiliation(s), reference, and abstract reflect the information provided by the secondary source. In the case of publications not covered by major secondary sources, however, abstracts shall be especially prepared or edited.

In the present and the next couple of issues we will cover publications dealing with twins and twin research (other than those that have appeared in this journal) abstracted in the years 1979, 1980, and 1981 by Psychological Abstracts (PA), Genetics Abstracts (GA), and the following series of the *Excerpta Medica* (EM): Human Genetics (HG), Developmental Biology and Teratology (DB), Obstetrics and Gynecology (OG), and Pediatrics (P). The abstracts will be reproduced by permission of the respective publishers, and this will be acknowledged by the source information code preceding (flush right) each individual abstract: For instance, the code PA-63-02735 will acknowledge that the abstract is No. 02735 in Volume 63 of the Psychological Abstracts and that it is reproduced by permission of the publisher. Similarly, EMHG will refer to *Excerpta Medica*/Human Genetics, and so on.

Because of the amount of material involved, only abstracts originated from PA, January 1979 through October 1980, are covered in the following section; the remaining abstracts will be subdivided in the next two or three issues. Our late 1982 issues, then, will just cover current information along with previously omitted abstracts we have meanwhile come to know about.

We shall welcome any information or comment from our readers and should like to acknowledge gratefully the substantial collaboration offered by some of our colleagues, and especially by Professor Frank Barron of the University of California at Santa Cruz, to the implementation of what we believe will be a useful service to the scientific community and to all those interested in twins and twin research.

0. TWIN BIOLOGY AND TWIN RESEARCH METHODOLOGY

75-0-01

PA-63-02728

BLOOD GROUP, BEHAVIORAL, AND MORPHOLOGICAL DIFFERENCES AMONG DIZYGOTIC TWINS

L. Carter-Saltzman and S. Scarr-Salapatek

University of Minnesota Institute of Child Development, Minneapolis

Social Biology (1975) 22:372-374

Examined the relationship of differences between dizygotic (DZ) twins at blood group loci to differences in physical growth, appearance, and behavior. A sample of 145 pairs of DZ twins, aged 10-16, was drawn from both black and white populations and blood grouped, photographed, and interviewed. Ss were administered a battery of tests, including Raven's Standard Progressive Matrices (RSPM), the Peabody Picture Vocabulary Test (PPVT), and the Coopersmith Self-Esteem inventory. Eight psychology graduate students were asked to rate the zygosity of each pair of twins on a scale from 1 to 6, using head-to-shoulder black and white photographs. Significant positive correlations were found between the twins' perceived differences, as determined from interview questions, and the number of blood group differences. DZ pairs with the fewest blood differences were most likely to be rated as monozygotic. Dressing alike did not relate significantly to either blood group similarity or similarity in appearance. The physical traits of sitting height, skeletal age, and weight were significantly correlated with blood group differences. Scores on the RSPM and the PPVT had significant positive and negative correlations, respectively, with blood group differences, though no significant associations of the personality measures with blood group differences were found.

77-0-01

PA-61-13462

ASSOCIATION AND LINKAGE BETWEEN GENETIC MARKERS AND MORPHOLOGICAL AND BEHAVIORAL ATTRIBUTES IN DIZYGOTIC TWINS

R. C. Go, R. C. Elston, and F. M. Salzano

University of North Carolina, Chapel Hill

Social Biology (1977) 24:62-68

In a sample of 51 like-sex dizygotic twin pairs (22 male, 29 female), 49 quantitative traits were analyzed for association with and linkage to each of seven informative blood systems. Results show that nine associations were significant at the 0.01 level, and a further 27 were significant at the 0.05 level. The most consistent associations were those of Rh with the scores obtained with a characterological test. The associations may be due to a factor present in the physical or social environment that influences both characteristics simultaneously; alternative explanations are pleiotropy, epistasis, or heterogeneity of the populations. Only 12 of the tests for linkage were significant at the 0.05 level. The most significant linkage was that between Hp and activity, one of the three scores in Gieger's characterological test.

78-0-01

PA-62-00507

MENOPAUSE IN MOTHERS OF MULTIPLE BIRTHS AND MOTHERS OF SINGLETONS ONLY

G. Wyshak

Radcliffe Institute for Programs in Health Care, Cambridge, Massachusetts

Social Biology (1978) 25:52-61

Presents data on the age at natural menopause and the prevalence of operative menopause in 4,086 mothers of singleton children only. The age at natural menopause was significantly earlier among mothers of multiple births than among mothers of singletons (mean ages 49.36 and 60.60, respectively). The prevalence of operative menopause was slightly higher among mothers of multiple births. Mothers of dizygotic unlike-sexed twins had significantly higher rates of operative menopause than did women in the comparison group.

78-0-02

PA-62-00034

VOLUNTEER BIAS IN TWIN RESEARCH: THE RULE OF TWO-THIRDS

D. T. Lykken, A. Tellegen, and R. DeRubels

University of Minnesota Medical School, Research Unit

Social Biology (1978) 25:1-9

Studies of adult same-sex twins which rely upon volunteer Ss typically consist of about two-thirds female and two-thirds monozygotic (MZ) pairs. Because of this recruitment bias, the male and dizygotic (DZ) twins in such studies will be less representative of their respective populations and will show smaller between-pair variance on many traits than will the comparison samples of female and MZ twins. This reduction in between-pair variance results in underestimation of the true intraclass correlation in the populations of DZ twins and in overestimation of the true heritability of the trait under study. It is suggested that the only adequate solution to this problem may be to provide sufficient extrinsic incentive (eg, money payments) to overcome the strong recruitment bias.

78-0-03

PA-63-02736

THE DIAGNOSIS OF ZYGOSITY IN TWINS

D. T. Lykken

University of Minnesota Psychiatric Research Unit, Minneapolis

Behavior Genetics (1978) 8:437-473

Outlines the methods required for highly accurate zygosity diagnosis using blood typing, fingerprints, and anthropometry. The logic behind the use of discrete Mendelian phenotypes is explained, and tables present the odds against a dizygotic twin pair showing concordance on eight blood group systems, four serum proteins, and six red blood cell enzymes. These tables are suitable for use with American twins of European ancestry; the method of generating such tables is explained. The logic behind the use of metric, polygenic traits in zygosity diagnosis is also presented, together with tables giving the odds against a dizygotic twin

pair showing various degrees of similarity in ponderal index, cephalic index, and Slater's Z score, a measure of fingerprint similarity. Taken together, the 18 serological markers should misclassify dizygotic twins as monozygotic fewer than 2 times in 1,000. With the three anthropometric variables, this average probability of misclassification drops about 1 order of magnitude.

78-0-04

PA-63-02737

THE ONTOGENY OF HEMISPHERIC SPECIALIZATION: EVIDENCE FROM DICHOTIC LISTENING IN TWINS

S. P. Springer, and A. Searleman

State University of New York, Stony Brook

Neuropsychologia (1978) 16:269-281

To determine if variation in the direction and/or degree of hemispheric asymmetry for speech perception among right-handers has a heritable component, 53 monozygotic (MZ) and 35 dizygotic (DZ) right-handed, same-sex twin pairs (aged 13-38 yrs) were tested with a 240-trial CV dichotic listening test. Intraclass correlations for MZ and DZ pairs for handedness and various measures of ear asymmetry, including absolute values, were not significantly different, whereas MZ pairs showed a significantly higher correlation for overall total correct, a measure unrelated to the laterality scores. Concordance for direction of ear asymmetry alone was not significantly greater among MZ than DZ pairs. Results support the hypothesis that variation in direction and degree of lateralization for speech processing in right-handers is nongenetic in origin. A comparison of MZ, DZ, and singleton groups showed all three to be equivalent in terms of mean scores on the laterality and total correct measures, indicating that these twins are not atypical of the general population on these measures. Sex differences as well as effects of familial sinistrality were observed in the twin sample.

78-0-05

PA-63-00480

LATERALITY IN TWINS: THE RELATIONSHIP BETWEEN HANDEDNESS AND HEMISPHERIC ASYMMETRY FOR SPEECH

S. P. Springer and A. Searleman

State University of New York, Stony Brook

Behavior Genetics (1978) 8:349-357

Examined the relationship between dichotic listening performance and handedness in twins. The 53 monozygotic (MZ) and 35 dizygotic (DZ) pairs concordant for right-handedness displayed ear asymmetries and total correct scores comparable to those found in right-handed singletons. The left- and right-handed members of the 19 MZ and 8 DZ pairs discordant for handedness were also similar to left- and right-handed singletons, respectively, with regard to ear asymmetry and overall performance. Data demonstrate that the relationship between handedness and brain organization observed in both MZ and DZ twins is similar to that found in the singleton population. The pattern of intraclass correlations obtained suggests that handedness discordance may be associated with greater differences in ear asymmetry within MZ pairs than within DZ pairs, possibly reflecting differences in the etiology of discordance for handedness in the two groups. In contrast, MZ cotwins were more similar than DZ cotwins, regardless of handedness, when total correct performance was measured.

1. MULTIPLE PREGNANCY AND TWIN CARE

80-1-01

PA-64-01742

ASSESSMENT OF GESTATIONAL AGE IN TWINS: LACK OF AGREEMENT AMONG PROCEDURES

M. Riese

University of Louisville Health Sciences Center, Child Development Unit

Journal of Pediatric Psychology (1980) 5:9-16

Examined the results of various gestational age assessment techniques (eg, neurological examination and ultrasound cephalometry) for their coherency in determining the maturity at birth of 152 twins. The medi-

cal records of 59 sets of same-sex twins (27 female, 32 male) and 17 sets of opposite-sex twins were examined: 95 of the neonates had been assessed by more than one procedure, and 64 of these were found to have discrepancies. Thirty-six percent of the sample had intraindividual gestational age assessment discrepancies ranging between 2 and 6½ wks; 34% of the sample had within-pair discrepancies ranging between 2 and 6½ wks. Within-pair differences in gestational age were found in 70% of the sample of twin pairs. In 20% of the cases there was a question of whether the neonate was premature, term, or postmature. It is suggested that modifications of current assessment techniques may increase reliability of gestational age assessment in high-risk neonates, especially twins and small-for-date babies.

2. TWIN DEVELOPMENT AND TWIN RESEARCH IN DEVELOPMENTAL STUDIES

74-2-01

PA-61-05643

CHILDHOOD SLEEP CHARACTERISTICS AND READING ACHIEVEMENT

A. P. Matheny and A. B. Dolan

University of Louisville Medical School, Health Sciences Center

Catalog of Selected Documents in Psychology (1974) 4:76. MS. 676 (9 pp/\$2)

Subject terms: Monozygotic twins, preschool age children, school age children, intelligence quotient, reading achievement, longitudinal studies, sleep, early childhood development. Index phrase: Sleep characteristics during preschool years, IQ and reading achievement, school age identical twins, longitudinal study.

74-2-02

PA-62-14281

A CASE OF ANOREXIA NERVOSA SUCCESSFULLY TREATED BY BEHAVIOR THERAPY IN AN OUTPATIENT CLINIC

J. Sonoda, K. Hirayama, S. Nozoe, and I. Takayama

Kagoshima University Hospital, Japan

Japanese Journal of Child Psychiatry (1974) 15:115-123

Reports the case of a 10-yr-old girl treated for anorexia nervosa on an outpatient basis with behavioral therapy (operant conditioning). The patient was one of monozygotic twins who started to lose weight after an appendectomy operation. Her replacement as the baby of the family by a younger brother born when she was 6 and the special care and attention, especially in regard to food, she received from her mother during her hospitalization for the operation were important factors in triggering the symptomatic response. At the time of treatment she weighed 20.4 kg, about 30% below normal. She was treated for 2 mo with appetite stimulants without result. The successful behavioral therapy included the following techniques: a) Praise and encouragement for eating but no attention for refusal, and no comments about the girl's emaciated condition; b) more frequent feedings, with reduced amounts; c) covert reinforcement with hypnotherapy; and d) a token economy system. After acquiring four tokens she would be rewarded with a covered bicycle. A token was rewarded for each kilo gained. At first her weight increase was very slow. Only after the introduction of the token system did she begin to gain weight at the approximate rate of 1 kg/mo. She reached her target of 25 kg in 9 mo. A follow-up study 10 mo after treatment shows good home and school adjustment and continued normal weight gain.

75-2-01

PA-63-07336

ASPECTS OF ADULT-CHILD COMMUNICATION: THE ACQUISITION OF QUESTIONS

S. Savic

Institute of Linguistics, Novi Sad, Yugoslavia

Psychologia Wychowawcza (1975) 18:629-640

The acquisition of the interrogative system by a pair of dizygotic twins was studied by observing direct adult communication and the children's questions from age 1.1-3 yrs. There was no correspondence between the types of questions that emerged between adult and child and those between the children. A 2-way interaction of speech patterns was observed between the adults and the children, but cognitive readiness was also a significant factor in speech patterns.

75-2-02

PA-63-03776

A CASE OF RECURRENT VOMITING TREATED BY BEHAVIOR THERAPY

S. Yoshimuta, I. Takayama, and J. Sonoda

Matsushita Hospital, Kagoshima, Japan

Japanese Journal of Child Psychiatry (1975) 16:237-243.

Reports the case of a 5-yr-old boy who, from age 6 mo until his admission and treatment with behavioral therapy at age 5 yrs 8 mo, had experienced recurrent vomiting after eating solid food. On admission, no organic causes could be detected; a barium X-ray revealed contractile spasms of the lower esophageal tract proceeding upwards with eruptive force. The child was born underweight, and was the second of a pair of twins who were brought back to the hospital 37 days after birth because of melena; the other twin died of pneumonia caused by ingesting vomit into his lungs. The boy was thin, malnourished, and dwarfish when hospitalized. The concerned, anxious, and tense attitude of other family members had caused the vomiting problem and internal anxiety toward food to worsen, manifesting chronic tendencies. At the hospital, he was at first maintained on a liquid diet and eating was done in a relaxed, pleasant, and leisurely atmosphere. Solid foods were added gradually. When the boy vomited, he was ignored and when he did not vomit he received special attention. A token economy was introduced and he was rewarded with a plastic token for eating solid food without vomiting. During his 3-mo stay he increased in weight from 9.5 to 15.0 kg and in height from 94.0 to 96.5 cm. Shortly after his release, he was able to attend grade school at the normal age.

76-2-01

PA-61-00761

THE EFFECT OF PARENTAL PERCEPTIONS ON EARLY DEVELOPMENT IN TWINS

M. G. Allen, S. Greenspan, and W. Pollin

Georgetown University Medical School, Washington, D.C.

Psychiatry (1976) 39:65-71

Studied eight families of monozygotic (MZ) twins and two of nonidentical twins to determine a) how objective physical and behavioral characteristics of each child are perceived and responded to by parents; b) the relevance of prenatal factors—how attitudes, hopes, and predictions expressed by parents before the birth of their children influenced parental perceptions of each; c) how parental needs, background, and current life situations influenced perceptions of the child and contributed to the formation of personality. Results illustrate that whereas MZ twins are genetically identical, they nevertheless show constitutional differences based on differences in intrauterine experience and birth experience. These constitutional differences form the basis of differential parental perceptions of the children and differential delineations of their roles. This creates a reciprocal interplay, sometimes reinforcing differences, which can lead to parent-child linkages.

77-2-01

PA-61-00671

INFLUENCE OF AN INFANT WALKER ON ONSET AND QUALITY OF WALKING PATTERN OF LOCOMOTION: AN ELECTROMYOGRAPHIC INVESTIGATION

I. B. Kauffman and M. Ridenour

Kean College of New Jersey

Perceptual and Motor Skills (1977) 45:1323-1329

Used EMG to study the acquisition of bipedal locomotor skill in human infants. The deprivation or enrichment behavior resulting from the frequent and regular use of an infant walker was examined in six sets of male fraternal twins. One randomly selected sibling from each set underwent a training program, commencing at the age of 300 days, spending a total of 2 hr/day in a walker. Siblings not included in this group were subjected to no special training. EMG recording were taken of all Ss at specified intervals in order to establish a model of the typical motor pattern at various stages of skill development. These data were then contrasted with EMG data similarly obtained from the walker-trained Ss. Use of a walker modified the mechanics of the S's locomotion in a number of important ways. It was shown that use of the walker enabled an S to commit substantial mechanical errors yet succeed in bipedal locomotion. Inasmuch as the mechanics of walker-assisted and nonassisted bipedal locomotion are dissimilar in many important ways, positive transfer from walker training appears questionable.

77-2-02

PA-61-01579

EFFECTS OF A PROCEDURE DERIVED FROM THE OVERCORRECTION PRINCIPLE ON MANIPULATED AND NONMANIPULATED BEHAVIORS

K. C. Wells, R. Forehand, K. Hickey, and K. Green

University of Georgia

Journal of Applied Behavior Analysis (1977) 10:679-687

Positive practice overcorrection has been shown to be effective in reducing self-stimulatory behaviors displayed by retarded and autistic individuals. In addition, the procedure may increase the occurrence of appropriate behavior through intensive practice. In the present study, several stereotypic and one appropriate behavior (appropriate toy play) displayed by a pair of autistic 10-yr-old male twins were measured before and during treatment by a positive practice in appropriate toy play overcorrection procedure. Overcorrection was introduced for each of the targeted inappropriate behaviors in succession for both Ss. Results show that overcorrection reduced all stereotypic behaviors displayed by both Ss. In addition, one S displayed marked increases in the behavior practiced during overcorrection relative to its baseline rate of occurrence. Results indicate that for some individuals, overcorrection may be effective in teaching and motivating appropriate forms of behavior as well as reducing stereotypy.

77-2-03

PA-61-06338

ANOREXIA NERVOSA IN ONE DIZYGOTIC TWIN

J. M. Nemeth

Yale Psychiatric Institute, New Haven, Connecticut

Psychiatric Forum (1977) 7:45-50

Presents a case report of dizygotic female twins discordant for anorexia nervosa. The report evaluates each twin through a developmental history, psychiatric evaluation, and screening psychological evaluation. Although both twins showed signs of eating disturbance immediately after the death of a grandfather, one twin became much more symptomatic and had to be hospitalized.

77-2-04

PA-61-11066

GENETIC INFLUENCES AND INFANTILE AUTISM

S. Folstein and M. Rutter

University of London Institute of Psychiatry, England

Nature (1977) 265:726-728

Because there is reason to suspect hereditary influences in infantile autism, a study of a systematically collected sample of 21 pairs of same-sex twins, one or both of whom had autism, was undertaken. Ss were obtained from hospital twin registers, consultants, schools, and national organizations. The 11 monozygotic (MZ) and the 10 dizygotic (DZ) pairs produced 25 autistic children. Four of the MZ pairs but none of the DZ pairs were concordant for autism. All concordant pairs were males. Additional findings supported the suggestion of genetic determination and indicate that what is inherited is a form of cognitive abnormality that includes but is not restricted to autism, although brain injuries during the perinatal period may also play a role in autism.

77-2-05

PA-61-13206

ENVIRONMENTAL AND GENETICAL CAUSES OF VARIATION IN ETHOLOGICAL ASPECTS OF BEHAVIOR IN TWO-YEAR-OLD BOYS

H. Lytton, N. G. Martin, and L. Eaves

University of Calgary, Canada

Social Biology (1977) 24:200-211

Studied the interactive behavior of 2-yr-old male twins (17 monozygotic, 29 dizygotic pairs) with their parents in the home and laboratory. Behavior counts, ratings, and experimental measures were subjected to a biometrical genetic analysis. A model that included only within- and between-families environmental effects fitted most variables best, except for instrumental independence (a rating) and speech rate (a count variable), which showed a significant genetic component. Low reliability may explain the small proportion

of genetic variation in count variables, but the greater reliability of ratings and experimental measures (the latter, however, of doubtful construct validity) did not produce greater genetic determination. The largest part of the variance was explained by between-families environmental differences, only a minor part of which was due to interobserver differences. The probability of detecting genetic determination with this sample size, although it was large for an ethological study, is rather low.

77-2-06

PA-62-05347

SOCIAL PLAY BEHAVIOR OF THE COMMON MARMOSET (*CALLITHRIX JACCHUS* ERXL., 1777) IN CAPTIVITY

E. Voland

Georg-August-U zu Gottingen, Lehrstuhl fur Anthropologie, Federal Republic of Germany
Primates (1977) 18:883-901

Observed 21 captive marmosets to assess the ethology of social play. With the aid of video tape recordings, 38 elements of behavior comprising play episodes were distinguished. The peer group was composed of the nonadult members of the family group, whereby the twin was found to be the preferred partner, as measured by the duration of play. Social play was often accompanied by various communicative signals. Contemporary theoretical concepts of social play were tested on the basis of the results of this study.

77-2-07

PA-62-13386

MIRROR IMAGE AND ANTI-MIRROR IMAGE: EXPERIENCES ON THE FORMATION OF SELF-IMAGE

R. Zazzo

Enfance (1977) 2-4:223-230

Experiments with 18 pairs of twins showed that at about 12 mo a child distinguished between his/her own image in a mirror and that of another child seen through a window pane. At about 2 yrs they identified themselves with the mirror image. A second set of experiments involved a) putting a spot on the S's face, and b) using a projector behind the child to show a light in the mirror. Younger Ss ignored the spot. Around 2½ yrs they touched their faces. Much later they turned to find the source of light. In a third set of experiments, 40 children viewed a TV film that showed a) their motions in reverse, b) their motions with a delay of 10 sec, or c) an enlarged image of the S's face covered with spots. Ss under 5½ showed no doubt that they were seeing themselves; between 5½ and 6½ they were confused; after 6½ the S reasoned that despite the difference it was still his/her image.

77-2-08

PA-63-00405

INTERACTIONS BETWEEN PARENTS AND INFANTS, AND THE DEVELOPMENT OF INDEPENDENCE IN THE COMMON MARMOSET (*CALLITHRIX JACCHUS*)

J. C. Ingram

University of Bristol, England
Animal Behaviour (1977) 25:811-827

Detailed observations were made of the parent-infant interactions of five adult pairs and 31 infant common marmosets, housed in captive family groups. Records of parental measures were taken up to 4 mo old and comparisons made between infants in similar social situations. These comparisons investigate sex differences, birth-order variations, those between singleton and twin infants, parental variation, and the proportion of time that older siblings carry infants. Correlations between the measures reveal that both parents are responsible for promoting and regulating increasing infant independence. Comparisons are made with other parent-infant studies, and problems of the adaptiveness of the Callitrichid social system are considered.

77-2-09

PA-63-04815

SOCIAL GROOMING PATTERNS IN TWO HERDS OF MONOZYGOTIC TWIN DAIRY COWS

M. T. Wood

Darling Downs Institute of Advanced Education, Toowoomba, Australia
Animal Behaviour (1977) 25:635-642

Recorded grooming patterns and the amount of social grooming occurring during daylight hours between dairy herd members. Age and body weight were positively related to the giving of social grooming, as were age, body weight, milk weight, and milking order to the amount of social grooming received. The two members of a monozygotic twin pair had a similar social grooming rank with respect to the rest of the herd, and the preferred partner of a herd member for social grooming is its twin. Social grooming may be used to uncover an affiliative or epimeletic scale of social distance within the cow herd as an alternative to scales of social distance based on agonistic encounters.

78-2-01

PA-61-09672

**THE DEVELOPMENT OF SPEECH AND MENTAL PROCESSES IN A PAIR OF TWINS:
A CASE STUDY**

J. E. Douglas and A. Sutton

Hospital for Sick Children, Psychological Medicine Department, London

Journal of Child Psychology and Psychiatry and Allied Disciplines (1978) 19:49-56

Presents the case of 5-yr-old twin girls who were severely speech delayed. The twins were separated into parallel classes and given language training with the aim of remediating their early deprivation. The acceleration of their linguistic ability was paralleled by marked increase in intellectual functioning as measured by standard psychometric tests, and after 1 yr both girls were well able to cope with normal schooling.

78-2-02

PA-62-00745

**HERITABILITY IN SYNTACTIC DEVELOPMENT: A CRITIQUE OF MUNSINGER AND
DOUGLASS**

V. K. Fahey, G. A. Kamitomo, and E. H. Cornell

University of Kansas

Child Development (1978) 49:253-257

H. Munsinger and A. Douglass (see PA 56:9681) used the Assessment of Children's Language Comprehension and the Northwestern Syntax Screening Test as measures of syntactic ability to investigate the heritability factor in language acquisition. By comparing the concordance of scores of twins and siblings, they concluded that heritability was the important variable in test performance (0.79) and that environmental influences were not much over 0.10. In the present critique, weaknesses regarding test measures are pointed out, and the validity of these measures for the ages (3½-17½ yrs old) of the children used in the study is questioned. It is also emphasized that the question of environmental effects in normal circumstances remains unquantified, and research indicates that language intervention programs with deficient populations can be beneficial.

78-2-03

PA-62-03491

EFFECTS OF DIFFERENT SITUATIONS ON MOTHER-INFANT GAZING

J. C. Peery

Utah State University

Child Study Journal (1978) 8:111-121

Analyzed correlation matrices between total gazing time, gazing frequency, and total session time for gazing behavior of ten 3-mo-old twin infants (five male and five female) and their mothers during play, bottle feeding, and spoon feeding activities. A repeated measures design was employed accumulating 48 sessions of each activity. Video tape equipment was used in the home; data were gathered as naturalistically as possible. 95,879 sec of data were analyzed, including 5,495 infant gazes and 4,955 mother gazes. Results show that play produces a stronger relationship among the variables than do task-oriented feeding activities. Mother total looking time correlated with infant avoidance. The data illuminate the nature of the social interaction between Ss and provide evidence that situation variables influence social gazing during mother-infant interaction.

78-2-04

PA-62-03813

DIFFERENTIAL DEVELOPMENT OF AUTISTIC SYMPTOMS IN A PAIR OF FRATERNAL TWINS

J. L. Sloan

Southeastern TEACCH Center, Wilmington, North Carolina

Journal of Autism and Developmental Disorders (1978) 8:191-202

Reports the differential development of autistic symptoms over a 9-yr period in a pair of fraternal twins. The Ss were tested at various times with the Vineland Social Maturity Scale, the Stanford-Binet Intelligence Scale, the Peabody Picture Vocabulary Test, the Peabody Individual Achievement Test, the Psychoeducational Profile, the WISC-R, the Developmental Test of Visual-Motor Integration, and the Merrill-Palmer Scale of Mental Tests. Neither of the twins developed normally. Evaluations revealed that although the older (male) twin showed some early signs of pathology and suffered from frequent illnesses, he ultimately developed more normally than his sister, who likely sustained brain damage as a result of perinatal anoxia. Significant improvement occurred in both cases. Diagnostic, etiological, and treatment implications are discussed.

78-2-05

PA-62-05741

THE EFFECT OF SEX AND SOCIAL CLASS ON ESTIMATES OF HERITABILITY OF MENTAL DEVELOPMENT INDICES IN 18-MONTH-OLD TWINS

P. C. Welch

Purdue University, De Pauw, Indiana

Dissertation Abstracts International (1978) 39:965

Subject terms: Social class, intellectual development, genetics, infant development, infants, heterozygotic twins, monozygotic twins, sex-linked developmental differences. **Index phrase:** Sex and social class, heritability of mental development as measured by Mental Scale of Bayley Scales of Infant Development, 18-month monozygotic and dizygotic twins.

78-2-06

PA-63-04801

SEX DIFFERENCES AND DEVELOPMENTAL CHANGES IN SELECTED JUVENILE ACTIVITIES (PLAY) OF DOMESTIC LAMBS

B. D. Sachs and V. S. Harris

University of Connecticut, Storrs

Animal Behaviour (1978) 26:678-684

Recorded play of domestic lambs from birth to 10 wks during two lambing seasons (spring with 117 Ss and autumn with 30 Ss). A higher proportion of males than females mounted and butted; females were more likely than males to gambol. No differences were evident between the behavior of females from same-sex twins and females from mixed-sex twins. The ontogeny of play followed a bimodal course, with little play in the first wk of life, peaks of play during weeks 2-3 and 8-9, and a trough of activity between the peaks. Concurrently circulating hormones probably do not contribute to the sex differences or the development of play in lambs. The ontogeny of play may reflect ancestral adaptation to natural selection.

78-2-07

PA-63-07356

SYNCHRONIES IN MENTAL DEVELOPMENT: AN EPIGENETIC PERSPECTIVE

R. S. Wilson

University of Louisville School of Medicine, Child Development Unit

Science (1978) 202:939-948

Early mental development is analyzed from an evolutionary viewpoint and related to the dynamic interplay of genetic programming, maturational status, and environmental influence. Data are reported from 374 twin pairs who were tested longitudinally from 3 mo to 6 yrs of age. Tests included the Wechsler Preschool and Primary Scale of Intelligence, Bayley Scales of Infant Development, McCarthy Scales of Children's Abilities, and the restandardized version of the Stanford-Binet Intelligence Test From L-M. Monozygotic twins became increasingly concordant with age and also paralleled each other for the spurts and lags in development. Dizygotic twins became less concordant with age and eventually matched their singleton siblings as closely as one another. Results suggest that the course of mental development is guided

by the intrinsic scheduling of the genetic program acting in concert with maturational status and environmental influence.

78-2-08

PA-63-09441

IDENTICAL TWINS: PERCEPTIONS OF THE EFFECTS OF TWINSHIP

J. B. Kozlak

Humboldt Journal of Social Relations (1978) 5:105-130

Investigated the feelings and impressions of pairs of identical twins, aged 23-34 yrs, who were asked to describe their reactions to and perceptions of the effects of being a twin. The sample included five pairs of male and five pairs of female monozygotic twins. Retrospective accounts of certain aspects of childhood development, responses to twinship, and the issue of separation were elicited using written questionnaires and tape-recorded interviews. Developmental trends that emerged were divided into three categories: Parental response, twins' affective response, and Ss' other development. Parental response to Ss indicated a tendency for parents to react to twins as a unit. Ss' affective responses showed a high incidence of identity-related issues and closeness between twins. Other developmental trends were sharing, comparisons, an ability to form peer relationships, and the presence of certain twin characteristics. In general, these Ss' response to twinship was favorable; however, a certain amount of ambivalence was expressed. All Ss had accomplished a physical separation and described their lives as being separate from their twin's. Only 40% of those studied felt they had achieved a form of emotional separation.

79-2-01

PA-62-05808

GENETIC AND ENVIRONMENTAL ETIOLOGY OF SOCIAL BEHAVIOR IN INFANCY

R. Plomin, and D. C. Rowe

University of Colorado Institute for Behavioral Genetics

Developmental Psychology (1979) 15:62-72

A twin analysis was applied to infants' social behavior in standardized situations that permitted the comparison of social responding to mother and a stranger in different contexts. Ninety-two middle-class children (members of 21 identical twin pairs and 25 same-sex fraternal twin pairs) with an average age of 22.2 mo were observed in their homes using time-sampled observations of specific behaviors in seven situations: A 5-min warm-up period, approach by stranger, play with stranger, play with mother, cuddling with mother, cuddling with stranger, and separation from mother. Comparisons between intraclass correlations for identical and fraternal twins yielded significant differences for social behavior directed toward the stranger but not yielded toward the mother. In addition, a novel measure of attachment using the difference in social responding toward the mother and stranger suggested heritable influences only in the initial warm-up situation. It is concluded that in infancy, heredity affects individual differences in social responding more to unfamiliar persons than to familiar persons. The behavioral-genetic analysis also suggests that the substantial influence of environment in the development of social behavior may occur primarily within families as is widely assumed.

79-2-02

PA-62-11114

EARLY INFANTILE AUTISM IN MONOZYGOTIC TWINS

H. S. Eshkevari

Tehran University, Iran

Journal of Autism and Developmental Disorders (1979) 9:105-109

Reports on a pair of male monozygotic twins concordant for autism. During pregnancy the mother suffered from severe toxemia, and delivery occurred 2 mo before term. Although there may have been a genetic influence, it appears that gestational damage was the main etiological factor for the autism in both children.

79-2-03

PA-63-05131

PSYCHOSOCIAL CONCOMITANTS OF BIOLOGICAL MATURATION IN PREADOLESCENCE

R. A. Frank, and D. J. Cohen

Harvard Medical School, Boston

American Journal of Psychiatry (1979) 136:1518-1524

Studied eight sets of healthy twins aged 9–15 yrs and their parents to assess psychological changes in early adolescence. Interview and questionnaire data (eg, Coopersmith Self-Esteem Inventory, Offer Self-Image Questionnaire for Adolescents) suggest that self-doubt, avoidance of responsibility, resentment of parents, and anxiety about social relationship peaked in early puberty; emotional upset peaked in early to mid puberty. Results support a hypothesis of phase-specific psychosocial regression correlated with the biological onset of puberty. Children in all pubertal stages were shifting their interests away from parents and toward peers.

80-2-01

PA-63-11859

TREATMENT OF YOUNG CHILDREN AMONG NONWESTERN JEWISH MOTHERS IN ISRAEL: SOCIOCULTURAL VARIABLES

E. R. Goshen-Gottstein

Bar-Ilan University, Ramat Gan, Israel

American Journal of Orthopsychiatry (1980) 50:323–340

In direct observations of 74 Jewish families in Israel (many with twins, triplets, or quadruplets) mothers of Oriental origin were found to engage in fewer of the child-rearing practices accepted as “normal” by Western social scientists than did mothers of Western origin. Greater degrees of “compulsive” and “disorganized” behavior were observed among the Oriental mothers. Cleanliness of home and children was stressed at the expense of their children’s mental development by “compulsive” mothers; “disorganized” mothers were overwhelmed by their households and were unable to protect their children sufficiently. Differences are explained as due to cultural and educational background.

80-2-02

PA-64-05295

DEVELOPMENTAL STABILITY OF THE RELATIVE INFLUENCE OF GENES AND ENVIRONMENT ON SPECIFIC COGNITIVE ABILITIES DURING CHILDHOOD

H.-Z. Ho, T. T. Foch, and R. Plomin

University of Colorado Institute for Behavioral Genetics, Boulder

Developmental Psychology (1980) 16:340–346

Describes hierarchical multiple regression (HMR) model for analysis of cross-sectional data to examine developmental changes in the relative influence of genes and environment. The HMR model is advocated because it provides a test of significance for age changes without the loss of information and statistical power that results when continuous variables, such as age, are assigned to categories. This model was applied to nine tests of specific cognitive abilities that were administered to 54 identical and 33 same-sex fraternal twin pairs whose ages ranged from 5 to 11 yrs. Results indicate that familial influences as well as the relative mixture of genetic and environmental influences on specific cognitive abilities remain stable during this fast-moving developmental era.

3. TWIN RESEARCH IN COGNITIVE STUDIES

77-3-01

PA-61-07572

THE CONSTRUCTION AND UTILITY OF THREE INDEXES OF INTELLECTUAL ACHIEVEMENT

H. J. Dupuy and G. Gruvaeus

USDHEW Public Health Service, Division of Health Examination Statistics, Hyattsville, Maryland

Vital and Health Statistics, Series 2 (1977) 74:26

Describes the construction of three indexes of intellectual achievement for use in analyses of the National Center for Health Statistics’ Health Examination Survey findings for US children (ages 6–11 yrs) and youths (ages 12–17 yrs). First-order analyses of these data revealed statistically significant relationships between the index of intellectual development and a) number of pregnancies previous to the birth of the examined child, b) twin vs nontwin birth status, c) astendance vs nonattendance at nursery school and/or kindergarten. However, these relationships were mostly accounted for by the family background factors reflected in the Socio-Intellectual Status index. No important amount of variance was found in the residual

component of the index of intellectual development as measured by the Differential-Intellectual-Development index.

77-3-02

PA-61-07857

ESTIMATION OF HERITABILITY FROM IQ DATA ON TWINS

A. Vetta et al

Oxford Polytechnic, England

Nature (1977) 266:279-281

Presents five replies to a paper by R. Adams et al (see PA 57:2614), which investigated kinship correlations in mental test performance for monozygotic and dizygotic twins and concluded that the results supported zero or low upper limit heritabilities of mental test performance. A response by Adams et al to each of the five critiques is included.

77-3-03

PA-62-05347

GENETIC DETERMINATION OF SOME MEMORY AND EEG CHARACTERISTICS IN MAN

V. F. Micheeff

USSR Academy of Sciences, Pavlov Institute of Physiology, Leningrad

Activitas Nervosa Superior (1977) 19:255-256

Subject terms: Genetics, memory, electroencephalography, twins. Index phrase: Genetic factors, memory and EEG characteristics, twins.

78-3-01

PA-61-11188

AGENESIS OF THE CORPUS CALLOSUM: REPORT OF TWO PRESCHOOL CHILDREN AND REVIEW OF THE LITERATURE

M. Field, R. Ashton, and K. White

Royal Children's Hospital, Melbourne, Australia

Developmental Medicine and Child Neurology (1978) 20:47-61

The results of neuropsychological examinations of two 4-yr-old patients with agenesis of the corpus callosum showed low intelligence-test performance, impaired visuomotor coordination, and impaired bimanual coordination. Controls included ten normal and ten retarded 4-yr-olds as well as monozygotic twin 5-yr-olds, dizygotic 5-yr-olds, and the twin sister of case A. The most striking deficits were observed in case A (a dizygotic twin), particularly in her inability to identify objects verbally when placed in the nondominant hand, and in her ability to complete a task with the nondominant hand without vision, when she was unable to complete the same task with vision. It is noted that this patient was unusual insofar as she manifested deficits noted in callosal patients, as well as some noted in split-brain patients but not previously ascribed to callosal patients.

78-3-02

PA-63-02735

HEREDITY-ENVIRONMENT ANALYSES OF JENCKS'S IQ CORRELATIONS

J. C. Loehlin

University of Texas, Austin

Behavior Genetics (1978) 8:415-436

Three different published heredity-environment analyses of C. Jencks's summary correlations for US studies of IQ using the Stanford-Binet Intelligence Scale yielded different results. The three studies were performed by a) C. Jencks et al (1972); b) a group at the University of Birmingham (J.L. Jinks and L.J. Eaves, 1974; L.J. Eaves, 1975); and c) a group in Hawaii (D.C. Rao et al, 1974, 1976). The present author shows empirically that differences in selection of data and in computational procedures and logical inconsistencies in specifying equations are not responsible for the differences in results. Rather, the differences trace to the underlying assumptions made by the various authors. Results of the analyses suggest that the assumptions concerning genetic dominance, assortative mating, and special twin environments were especially critical, whereas those regarding selective placement and different modes of environmental transmission were not.

78-3-03

PA-63-04607

OBJECTIVE AND SUBJECTIVE MEASURES OF DISTRACTIBILITY

S. V. Austin and D. R. Hemsley

University of London Institute of Psychiatry, England

Bulletin of the Psychonomic Society (1978) 12:182-184

Reports relationships between objective and subjective measures of distractibility. Four tasks were performed by 80 Ss (20 monozygotic and 20 dizygotic twin pairs; mean age 20.3 yrs) under two conditions – no distraction and distraction. Within the group, there was little relationship between measures of distractibility (auditory, visual, and associative distraction tasks). In contrast, speed measures derived from three of the tasks were highly positively correlated. Distractibility scores were not related to self-reports of ability to concentrate and susceptibility to distraction. The subjective measures did, however, correlate significantly with the speed scores.

78-3-04

PA-63-09933

TWINS IN SPECIAL SCHOOLS:II

Z. Brunecky, Z. Kalab, and J. Zeman

Research Institute of Pediatrics, Brno, Czechoslovakia

Psychologia a Patopsychologia Dietate (1978) 13:231-238

Based on anamnestic, anthropological, psychological, and neurological data, 40 pairs of same-sexed twins from special schools (mean age 12 yrs) were genetically evaluated. Ten were monozygotic and 30 dizygotic. In both groups approximately the same birth weight deficit was found, compared with the birth weight of normal twins, suggesting the role of external noxious effects during pregnancy. Intelligence assessment (WISC) did not reveal significant differences in the concordance of both groups, IQ differences being 5 points or less. A comparison of interpair differences and the coefficient of interclass correlation did not prove heredity as the cause of mental deficiency. EEG was abnormal in 88% of the Ss, and a pathological neurological report was found in 64%. Both EEGs were concordant in 50% of monozygotic and 3% of dizygotic twins. Thus the investigation did not confirm the importance of heredity in the genesis of mild mental retardation, but proved organic cerebral damage to be significant in this sample.

79-3-01

PA-63-05247

A COMPARISON OF TWINS FOR DEGREE OF CLOSENESS AND FIELD DEPENDENCY

T. O. Martin and R. B. Gross

Adolescence (1979) 14:739-745

Determined if the degree of closeness in twin relationships would be reflected in the twins' degree of field dependency. Sixteen pairs of monozygotic (MZ) adolescent male twins (aged 12-18 yrs) and 16 dizygotic (DZ) same-sexed male twins were administered a zygosity questionnaire, a semantic differential measure of closeness, and a short form of the Embedded Figures Test. No significant differences were found between MZ and DZ twins with regard to their expressed closeness to their twin sibling; in addition, there were no significant differences between the two groups in field dependency. However, there were significant relationships of these two variables with intelligence, and possible reasons for such an occurrence are offered.

79-3-02

PA-64-04903

TWIN-FAMILY STUDIES OF PERCEPTUAL SPEED ABILITY

R. J. Rose, J. Z. Miller, M. Dumont-Driscoll, and J. M. Evans

Indiana University, Bloomington

Behavior Genetics (1979) 9:71-86

Administered two tests of perceptual speed (Identical Pictures and Number Comparison) from the Kit of Reference Tests For Cognitive Factors to 100 pairs of like-sex college-age twins and to 470 members of the families of monozygotic twins. Results show substantial heritability in perceptual speed that is inconsistent with X chromosome linkage. Gender differences may reflect polygenic transmission, with differing thresholds arising from cultural sex-role training.

79-3-03

PA-64-05320

NATURE AND NURTURE STRIKE (OUT) AGAIN

S. Scarr and R. A. Weinberg

Yale University

Intelligence (1979) 3:31-39

Responds to a critique of a paper presented by the current authors (see PA 63:4824). In addition, H. Munsinger's (PA 55:542) review of the adopted child literature is challenged as inaccurate and misleading. The need to discern mean effects in adoption studies is highlighted by noting that mean scores show more malleability than rank order of individual scores, when the environments of adoptive families are well above the mean and when the variability with the group of families is restricted. Also discussed are alleged selective bias in the current pool of adoptees, the implicit assumptions in models that lead to heritability estimates, and the problems produced by the lack of a generally accepted model of environmental transmission.

80-3-01

PA-64-04349

J. B. WATSON'S LITTLE ALBERT, CYRIL BURT'S TWINS, AND THE NEED FOR A CRITICAL SCIENCE

F. Samelson

Kansas State University, Manhattan, Kansas

American Psychologist (1980) 35:619-625

An examination of J. B. Watson's correspondence and publications illustrates the gradual development of his views on conditioning, leading to the famous experiment with "Albert and the rat" in the winter of 1919-1920. It also raises some critical questions about the status of this experiment as a classic paradigm for human conditioning. When combined with the recent criticism of C. Burt's (1966) identical-twin data, this material seems to indicate at least occasional failures of two major mechanisms safeguarding scientific knowledge: Critical analysis and replication. Further consideration of these issues points toward the need for a more critical science.

4. TWIN RESEARCH IN PERSONALITY, PSYCHOPHYSIOLOGY, AND PSYCHOPATHOLOGY

75-4-01

PA-63-07727

DISCORDANCE-ANALYSIS OF NEUROTIC IDENTICAL TWIN-PAIRS

H. Schepank

Ruprecht-Karl-University, Heidelberg, Fakultat fur Klinische Medizin, Mannheim, Federal Republic of Germany

Zeitschrift fur Psychosomatische Medizin und Psychoanalyse (1975) 21:215-242

Studied the role of environmental factors involved in the genesis of neurotic disorders and related symptoms in monozygotic twins in which the disorder occurred in only one twin. The extent of psychopathology was rated on a scale ranging from 0 to 24 points. Using the psychoanalytic framework, etiology and outcome are described for six pairs of twins 6-53 yrs old; two of the pairs were females and four were males. For both sexes of twins, being a favorite child of the more dominant parent was related to a healthier development. Some further impressions are reported.

76-4-0

PA-61-03607

BODY IMAGE AND BEHAVIOR IN TWINS

F. Cacciaguerra

Universita Cattolica del Sacro Cuore, Istituto di Psicologia, Milan, Italy

Shows that both monozygotic and dizygotic twins possess a fairly adequate body image as determined by a series of psychological measures. In the monozygotics, the body-image representation of the cotwin is of-

ten better than that of self. An adequate body image is shown to be related to a) frequency of terms referred to one's body, b) correct evaluation of one's size, and c) correct perception and reproduction of size of objects. Piaget's concept of body size is discussed.

76-4-02

PA-63-01146

CONTRIBUTIONS OF GENETIC STUDIES TO THE PSYCHIATRIC NOSOLOGY AND NOSOGRAPHY: II

R. Tatarelli, U. Godai, and P. Nardone

Universita di Roma, Cattedra di Psichiatria, Italy

Acta Neurologica (1976) 31:206-244

Reviews genealogical and twin studies of genetic influences on the incidence of neurosis and psychosis. Statistics are presented emphasizing different hereditary influences on diagnostic subgroups of neurosis, affective disorders, and schizophrenia. Reported results have elements of contradiction and confusion leading to the examination of the possibility that psychiatric diagnosis imposes limitations on the evaluation of genetic and environmental contributions to psychopathology. It is concluded that as long as genetic research utilizes diagnosis rather than symptom as the point of reference either for screening of Ss or for research conclusions, it will remain an uncertain instrument of verification instead of becoming a research instrument autonomously fruitful.

76-4-03

PA-63-09529

THE CREATIVE CHILD IN THE FAMILY: EACH ONE IS SPECIAL

E. P. Torrance

University of Georgia

Creative Child and Adult Quarterly (1976) 1:195-198

Argues that each child is special, and presents results of studies of identical and fraternal twins which show that identical twins are no more like each other than are fraternal twins in important characteristics, especially those of creativity. Recommendations for families of creative children are offered, and a list of eight guidelines to help solve many problems created by the "different" child is presented.

77-4-01

PA-61-01196

THE RELATIONSHIP BETWEEN PROBAND FIRST ADMISSION AGE AND MZ AND DZ COTWIN RISK OF SCHIZOPHRENIA

B. D. Peterson

University of Minnesota

Dissertation Abstracts International (1977) 38:2877

Subject terms: Age differences, onset (disorders), schizophrenia, monozygotic twins, heterozygotic twins. Index phrase: Age at first admission, cotwin risk of schizophrenia, monozygotic and heterozygotic twin.

77-4-02

PA-61-06231

BIOSOCIAL BASES OF CRIMINAL BEHAVIOR

S. A. Mednick and K. O. Christiansen

University of Southern California

New York: Gardner Press, 298 pp.

Emphasizes the interaction of socialization forces and biological variables (neurophysiological and genetic factors) in the learning of antisocial behaviors. Among the topics discussed are re-search studies among twins and adoptees; alcoholism and XYY chromosome research; electrodermal activity and psychopathology; and prospective studies of the predictors of criminality.

77-4-03

PA-62-05387

EMOTIONAL REACTIONS IN TWINS

R. Jirak, M. Cerny, P. Zvolsky, and H. Drabkova

Charles University Psychiatric Clinic, Prague, Czechoslovakia

Activitas Nervosa Superior (1977) 19:256-257

Subject terms: Monozygotic twins, emotional responses, stress, heart rate. Index phrase: Emotional stimuli, heart rate, monozygotic twins.

77-4-04

PA-63-03302

A GENOTYPE-ENVIRONMENTAL MODEL FOR PSYCHOTICISM

L. J. Eaves and H. J. Eysenck

University of Birmingham, England

Advances in Behaviour Research and Therapy (1977) 1:5-26

Presents the results of a biometrical genetical analysis of the scores of 544 pairs of twins on the Eysenck Personality Questionnaire. The genetical consequences of assortative mating were too slight to be detectable in this study, and the genetical variation is consistent with the hypothesis that gene effects are additive. This is a general finding for traits that have been subject to stabilizing selection. Data provide little support for the view that the "family environment" (including the environmental influence of parents) plays a major part in the determination of individual differences in Psychoticism (P), though evidence is cited suggesting that sibling competition effects produce genotype-environmental covariation for the determinants of P in males. The genetical and environmental determinants of the covariation of P with other personality dimensions are considered.

77-4-05

PA-64-03465

OBSTETRIC COMPLICATIONS AND TWIN STUDIES OF SCHIZOPHRENIA: CLARIFICATIONS AND AFFIRMATIONS

J. Shields, I. I. Gottesman, and E. Hall

University of London Institute of Psychiatry, England

Schizophrenia Bulletin (1977) 3:351-354

J. Shields and I. I. Gottesman rebut the accusation by E. F. Torrey (PA 64:3476) that their 1976 review's statements regarding the influence of birth weight differences and perinatal insults on schizophrenia were erroneous. They maintain that Torrey's conclusions stem from misinterpretation of the literature on birth weight differences in twins and on a loose use of the term "specific etiology." Obstetric complications are independent stressful factors, seemingly interacting with genetic influences, but difficult to place on the continuum of schizophrenic etiology. Further research should endeavor to obtain larger samples.

77-4-06

PA-64-03476

BIRTH WEIGHTS, PERINATAL INSULTS, AND HLA TYPES: RETURN TO "ORIGINAL DIN"

E. F. Torrey

St. Elizabeths Hospital, Richardson Division, Washington, D.C.

Schizophrenia Bulletin (1977) 3:347-351

Examines two erroneous statements marring the 1976 review by I. I. Gottesman and J. Shields of adoption, twin, and family studies of schizophrenia. a) Based on evidence to date, the question of birth weights in twin pairs discordant for schizophrenia is open, or the findings are even opposite to those of Gottesman and Shields. b) Their conclusion that "perinatal difficulties" are "unlikely" to play a specific role in the etiology of schizophrenia among offspring seems premature. The new research area of human lymphocyte-antigen typing must be included in this discussion. The author feels that the multiple competing voices that have characterized schizophrenia research (the "original din") are a sign that the genetics issue is alive and well.

78-4-01

PA-61-11260

CARDIOVASCULAR REACTIONS DURING PSYCHIATRIC INTERVIEW: A NONINVASIVE STUDY ON A TWIN SAMPLE

T. Theorell, U. de Faire, and B. Fagrell

Karolinski Institut, Serafimerlasarettet, Stockholm, Sweden

Journal of Human stress (1978) 4:27-31

Eighteen monozygotic and 13 dizygotic male twin pairs aged 51-74 yrs were exposed to a stressful psychiatric interview. Genetic influence over blood pressure and peripheral pulse volume was observed to be most

evident at the end of the interview, and heart rate was genetically strongly influenced both at rest and during the whole interview.

78-4-02

PA-61-13531

A CLINICAL-GENETIC TWIN STUDY OF OBSESSIONAL AND PHOBIC STATES

G. Carey

University of Minnesota

Dissertation Abstracts International (1978) 39:2975

Subject terms: Genetics, twins, predisposition, obsessive compulsive neurosis, personality traits, phobic neurosis, obsessive compulsive personality. Index phrase: Probandwise concordance for psychiatric treatment and symptoms and personality, twin pairs with one member receiving treatment.

78-4-03

PA-61-13554

GENETIC TRANSMISSION OF SCHIZOPHRENIA

D. K. Kinney and S. Matthyse

University of California, Los Angeles

Annual Review of Medicine (1978) 29:459-473

Reviews recent studies in schizophrenia that provide evidence for genetic transmission. The consanguinity, twin, and adoption studies support the concept of a genetic component, but studies of monozygotic twins, with far less than 100% concordance for schizophrenia, point to the influence of environmental factors as well. It is proposed that relevant genes may not code directly for schizophrenia but for risk factors that predispose to illness under particular environmental conditions. Research as to the nature of the etiologically significant environmental variables and methodology for their evaluation is suggested. The application of further research to advance genetic counseling is noted.

78-4-04

PA-62-01160

GENETIC AND ENVIRONMENTAL FACTORS INFLUENCING THE CORRELATIONS AMONG TRAITS OF ABILITY AND PERSONALITY

C. S. Otterbein

State University of New York, Buffalo

Dissertation Abstracts International (1978) 39:363-364

Subject terms: Genetics, environment, ability, personality traits, twins. Index phrase: Genetic vs environmental factors, correlation between ability and personality traits, twins.

78-4-05

PA-62-05188

INDIVIDUAL DIFFERENCES IN SMOOTH PURSUIT AND SACCADIC EYE MOVEMENTS AND MANUAL TRACKING PERFORMANCE IN MONOZYGOTIC TWINS: SOME IMPLICATIONS FOR SCHIZOPHRENIA

W. G. Iacono

University of Minnesota

Dissertation Abstracts International (1978) 39:982-983

Subject terms: Schizophrenia, monozygotic twins, individual differences, eye movements, tracking, visual perception. Index phrase: Individual differences in smooth pursuit and saccadic eye movements and manual tracking performance, monozygotic twins, implications for schizophrenia.

78-4-06

PA-62-06188

BIAS OR ARTIFACT? A REPLY TO READE AND WERTHEIMER

D. J. McDowell

Milford Assistance Program, Inc., Massachusetts

Journal of Consulting and Clinical Psychology (1978) 46:1487-1488

W. K. Reade and M. Wertheimer (PA 57:08943) inferred in their analog study of the diagnosis of schizophrenia that diagnosticians' judgments were inappropriately biased by the information that a patient had

an identical twin diagnosed as schizophrenic. The present authors argue that the procedures used in the study compelled the diagnostic behavior and that the implicit generalization from that study to reasonable clinical practice was unjustified.

78-4-07

PA-62-11113

A GENETIC STUDY OF SCHIZOPHRENIA PEDIGREES: II. ONE-LOCUS HYPOTHESES

R. C. Elston, K. K. Namboodiri, M. A. Spence, and J. D. Rainer

University of North Carolina School of Public Health, Chapel Hill

Neuropsychobiology (1978) 4:193-206

One-locus models were fitted to two sets of two-generational families (see M. A. Spence et al, 1976, for family details), because each contained a schizophrenic twin proband; in one set each twin proband was in the nuclear group, in the other in the peripheral group. Allowing for a log-normal age of onset distribution and a dependence of ascertainment probability on age of onset, the following hypotheses were tested and rejected: Ascertainment probability is a noncurvilinear function of age of onset on a log-log scale; the transmission of schizophrenia is via one Mendelian locus; and the transmission of schizophrenia is independent of parental type. The last hypothesis is more likely than one-locus Mendelian inheritance, but it too must be rejected.

78-4-08

PA-63-00079

GENETICS AND PERSONALITY INVENTORIES: THE LIMITS OF REPLICATION WITH TWIN DATA

G. Carey, H. H. Goldsmith, A. Tellegen, and I. I. Gottesman

University of Minnesota, Minneapolis

Behavior Genetics (1978) 8:299-313

Examined the consistency of twin data with personality questionnaires, using all reported samples that have been administered the California Psychological Inventory (CPI). The scale correlations for the monozygotic (MZ) twins are fairly consistent across different samples, whereas the correlations for dizygotic (DZ) twins fail to show as much consistency. Moreover, differences between MZ and DZ correlations fail to replicate across samples. Sampling error and sampling bias are proposed as the major reasons for the inconsistency, and when these factors are taken into account the resulting heritabilities suggest that the CPI scales loading on the extraversion-introversion factor are the most heritable. The implications of sampling error and sampling bias for estimating genetic parameters from correlational twin data, for uncovering differential heritability of personality traits, and for designing future research are discussed.

78-4-09

PA-63-00476

ARE CPI SCALES DIFFERENTLY HERITABLE: HOW GOOD IS THE EVIDENCE?

J. C. Loehlin

University of Texas, Austin

Behavior Genetics (1978) 8:381-382

Subject terms: Genetics, heterozygotic twins, monozygotic twins, California Psychological Inventory, professional criticism, personality traits. Index phrase: Consistency of monozygotic and dizygotic correlations, California Psychological Inventory studies, criticism of findings of G. Carey et al.

78-4-10

PA-63-01162

IMPLICATIONS OF SEX DIFFERENCES TO THE PREVALENCES OF ANTI SOCIAL PERSONALITY, ALCOHOLISM, AND CRIMINALITY FOR FAMILIAL TRANSMISSION

C. R. Cloninger, K. O. Christiansen, T. Reich, and I. I. Gottesman

Jewish Hospital of St. Louis, Missouri

Archives of General Psychiatry (1978) 35:941-951

Describes three multifactorial models of disease transmission in which the prevalences of a disease differ in men and women. These models demonstrate explicitly how such sex differences may be caused by genetic factors, home environment, sociocultural, or other nonfamilial factors. Independent sets of family data

about antisocial personality and alcoholism in the US and criminality in Danish twins are analyzed. Relevant clinical and adoption data about these disorders are reviewed. The sex differences observed in the development of antisocial personality and of crime appear to be due to familial factors, whereas the differences between male and female alcoholics are due to nonfamilial factors.

78-4-11

PA-63-05763

ANOTHER IDENTICAL SCHIZOPHRENIC TWIN

A. Hoffer

Journal of Orthomolecular Psychiatry (1978) 7:134-136

Speculates that nonschizophrenic identical twin siblings of schizophrenics may have some concordance of cerebral metabolic dysfunction and may need comparable orthomolecular treatment.

78-4-12

PA-63-05854

METHODS OF GENETIC INVESTIGATION IN PSYCHIATRY

J. Shields

University of London Institute of Psychiatry, England

Confrontation Psychiatriques (1978) 16:21-46

At the present time the evidence for genetic factors in psychiatry depends not on chromosome or biochemical studies but mainly on comparisons of morbidity rates in patients' relatives and in the general population. The comparison of monozygotic and dizygotic twins tests the argument that familial resemblance is accounted for entirely by the shared environment. In many monozygotic pairs only one is affected, and this gives an opportunity to compare environmental and genetic influences. Parents provide their children's environment as well as their genes, so it is possible that genetic influences depend for their manifestation on the environment of the carriers of those genes; but studies of adoptees indicate that this is not so. The combined evidence from family, twin, and adoption studies is consistent and strongly supports the importance of genetic factors in psychiatric disorders, but uncertainties in the data and its interpretation still leave some people unconvinced.

78-4-13

PA-63-07873

HERITABILITY OF TYPE A BEHAVIOR

R. H. Rahe, L. Hervig, and R. H. Rosenman

US Naval Health Research Center, San Diego, California

Psychosomatic Medicine (1978) 40:478-486

Ninety-three pairs of monozygotic and 97 pairs of dizygotic, middle-aged, American, male twins were studied to estimate the heritability of Type A coronary heart disease-prone behavior pattern. Participants were given an interview assessment of Type A behavior. In addition, they completed four psychological test batteries: The Thurstone Temperament Schedule, the Jenkins Activity Survey for Health Prediction, the California Psychological Inventory, and the Adjective Check List. Type A behavior as measured by the interview was found to be nonheritable. Psychological test scales that significantly correlated with Type A behavior, however, generally had significant heritability estimates. Only the Adjective Check List scales, which significantly correlated with Type A, showed nonsignificant heritability estimates. Selected items from these Adjective Check List scales may provide a method for assessment of Type A behavior possibly free from genetic influence.

78-4-14

PA-63-10256

LITHIUM ACCUMULATION IN ERYTHROCYTES OF MANIC-DEPRESSIVE PATIENTS: AN IN VIVO TWIN STUDY

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Free University of Brussels, Erasme Hospital, Belgium

British Journal of Psychiatry (1978) 133:436-444

To investigate genetic variables in lithium prophylaxis and lithium distribution across the erythrocyte in manic-depression, 25 pairs of monozygotic and 17 pairs of dizygotic manic depressive twins were exam-

ined. Concordant twins as a group showed better lithium prophylaxis than did discordant twins. Results are consistent with previous family studies of affective illness. Lithium distribution across the red blood cell (RBC) was assessed by estimating lithium RBC/plasma ratios. The lithium ratio's intrapair differences in both groups of twins were minimal with a high heritability index, suggesting that genetic factors play a role in lithium ion distribution. High linear correlation was found between lithium ratio and plasma lithium, and there was no difference in lithium ratios according to sex, affective state, and response to lithium. The distribution of lithium ratios was homogenous in the lithium responders' population but not in that of nonresponders. Implications are discussed as they relate to genetic determinants of lithium prophylaxis in manic-depressive illness.

78-4-15

PA-64-01369

A POSSIBLE GENETIC CONTRIBUTION TO THE ALEXITHYMIA TRAIT

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Psychotherapy and Psychosomatics (1978) 30:205-210

Alexithymic characteristics were studied in 15 monozygotic and 18 same-sex dizygotic healthy young twin pairs (aged 20-28 yrs) in a semistructured interview. ANOVA showed larger within-pair variances in the dizygotic than in the monozygotic twins. With some reservations, results suggest a genetic influence on the etiology of the alexithymic phenomenon.

78-4-16

PA-64-01749

SEVERE OBSESSIONAL ILLNESS IN DIZYGOTIC TWINS TREATED BY LEUKOTOMY

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Comprehensive Psychiatry (1978) 19:165-169

Describes a case of dizygotic twins, both with severe obsessional symptoms, believed to be the first report in the literature of obsessional twins treated with surgery. The illnesses were strikingly similar in both twins, in time of presentation, in development, and in the considerable (although not complete) improvement after modified leukotomy. The male twin's obsession centered around his fear of contaminating others with his sperm, the female twin's around her inaccurate perception that she was grossly overweight. Neither twin had been responsive to conventional treatments prior to the leukotomy. At the follow-up (6 yrs after surgery for the male twin and 3 yrs for the female), both were functioning reasonably adequately, both vocationally and socially, with relatively little symptomatology. Retrospective analysis showed no definite indications of schizophrenia, supporting instead the original obsessional diagnoses. Nature/nurture issues in these cases of severe obsession are discussed.

78-4-17

PA-64-08104

THE UNDERSTANDING OF A DEVELOPMENT OF EGO STRUCTURES IN PERSONALITY AND SURROUNDING GROUPS AS A BASIS FOR THE SCIENCE AND PRACTICE OF DYNAMIC PSYCHIATRY

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Dynamische Psychiatrie (1978) 11:120-140

Outlines a concept of ego structure which coincides with the whole of a person's available ego functions and the whole of his internalized group experiences. The ego functions are rooted in the unconscious and are divided, according to the genetic point of view, into primary ego functions, which form the person's core, and secondary ego functions, such as memory, language, and intelligence. Through a review of twin research, it is shown that psychogenetic factors rather than genetic factors are of primary importance in mental illness. The concept of ego structures was confirmed in therapeutic work with over 1,000 patients and by personality profiles developed by the author. Descriptions of schizophrenic reactions, psychosomatic illnesses, and borderline syndromes are given, and aspects of group dynamic therapy for these disorders are described.

78-4-18

PA-64-08167

SMOOTH PURSUIT EYE MOVEMENTS IN TWINS DISCORDANT FOR SCHIZOPHRENIA

P. S. Holzman et al

Harvard University

Journal of Psychiatric Research (1978) 14:111-120

Tested the validity of disordered pursuit eye movements as a genetic indicator of schizophrenic predisposition. Eleven sets of monozygotic and 15 sets of dizygotic twins were tested. Results show poor eye tracking to be widespread in schizophrenics and their families, but the small sample of Ss, with a mean age of 55 yrs, cautions against concluding that schizophrenia is under genetic regulation.

79-4-01

PA-62-06205

HEREDITY AND CHARACTER DISORDERS

J. D. Rainer

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American Journal of Psychotherapy (1979) 33:6-16

Comments that the role of heredity in personality development and character disorder has been studied by a variety of means. These include investigation of twins and/or families, using clinical ratings, personality scales, or psychological tests; observation of neonates and infants; and longitudinal description of discordant pairs of twins. In this review, the treatment of constitutional and genetic differences is illustrated by references to psychoanalytic writings. Other data are presented from various studies in neurosis, antisocial personality disorder, alcoholism, and factors within the normal range of personality variation; and vicissitudes of character development in children with sensory deprivation are noted. Implications of heredity-environment interaction for prevention and management are emphasized.

79-4-02

PA-63-09758

CHARCOT-MARIE-TOOTH DISEASE AND SCHIZOPHRENIA IN IDENTICAL TWINS

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Veterans Administration Medical and Regional Office Center, Neurology Service, Wilmington, Delaware

Journal of the American Medical Association (1979) 24:54-55

Charcot-Marie-Tooth disease (peroneal muscular atrophy) and schizophrenia occurred in a pair of monozygotic twins. The disease appeared to be an autosomal dominant trait transmitted from the mother. Although there was evidence suggesting emotional disturbance in the father and a paternal aunt, no definite evidence of inheritance was seen for schizophrenia.

79-4-03

PA-64-00332

ELECTRO-OCULOGRAPHIC RECORDING AND SCORING OF SMOOTH PURSUIT AND SACCADIC EYE TRACKING: A PARAMETRIC STUDY USING MONOZYGOTIC TWINS

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University of Minnesota, Psychiatric Research Unit, Minneapolis

Psychophysiology (1979) 16:94-107

Following reports that psychiatric patients and their relatives produced deviant oculomotion, new procedural and quantitative methods were applied in a parametric study of tracking proficiency in 32 monozygotic twin pairs (mean ca 21.7 yrs) tested twice. Ss tracked a spot of light across an oscilloscope screen. The target was driven sinusoidally at various frequencies for smooth pursuit tracking and by a modified square wave generator for saccadic tracking. Also included were a smooth pursuit test requiring Ss to monitor the aperiodic appearance of a hole in the center of the oscillating target and a psychomotor test requiring Ss to center manually a dot in a moving circle. For pursuit tracking, the EOG and target motion were fed to a computer programmed to calculate root-mean-square differences between EOG and target channels. The saccadic EOG was computer-analyzed by measuring movement latencies. Performance on the various tasks was analyzed with emphasis on the effects of the monitor requirement, which dramatically reduced tracking error. Measures of retest reliability and twin concordance suggested that observed individual differences in performance on these tasks represent stable traits.

79-4-04

PA-64-03460

REPLY TO LEWINE

L. Samuels

University of California School of Medicine, San Francisco
Schizophrenia Bulletin (1979) 5:8-10

R. R. Lewine (PA 62:3444) questioned whether schizophrenic females had been followed through the risk period. To clarify, the present author calculated the age at follow-up of twins discordant for schizophrenia in three studies: a) I. Gottesman and J. Shields (1972), b) E. Kringlen (1967, 1968), and c) M. Fischer (1973). Findings support the conclusion that recent twin studies show no significant sex differences in concordance for schizophrenia.

79-4-05

PA-64-05833

THE NATURE AND ORIGIN OF COMMON PHOBIC FEARS

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British Journal of Psychiatry (1979) 134:343-351

Studied the etiology and nosology of phobic fears. Ninety-nine same-sexed pairs of twins (50 pairs of monozygotic and 49 pairs of dizygotic twins 20-70 yrs of age) were interviewed and rated themselves on a personality test constructed by A. Lazare et al (1966). Factor analyses revealed five factors (ie, separation, animal, mutilation, social, and nature fears). The study demonstrated that, apart from separation fears, genetic factors play a part in the strength as well as the content of phobic fears. Environmental factors, affecting the development of dependence, reserve, and neurotic traits generally, seemed also to be of importance. It is demonstrated that Ss' phobic fears were related to emotional and social adjustment and that this was true to an even greater extent for separation fears.

80-4-02

PA-64-08099

SENSATION SEEKING AND ITS BIOLOGICAL CORRELATES

M. Zuckerman, M. S. Buchsbaum, and D. L. Murphy

University of Delaware, Newark

Psychological Bulletin (1980) 88:187-214

Reviews the trait of sensation seeking and the biological phenomena associated with it: Strength of the initial orienting reflex, augmenting vs reducing of the average evoked potential, MAO, and gonadal hormones (both androgen and estrogens). Both psychological and biological measures have retest reliabilities that are characteristic of stable traits. Twin studies show moderate to strong genetic control of the personality and of several biological measures. Several behavioral characteristics that are associated with the trait in humans are also related to the biological traits in animals, including sociability and social dominance, reactivity to novel situations, and play. In humans, sexual experience, interest in new situations, experiences with drugs, manic-depressive tendencies, and psychopathy are associated with both sensation seeking and its biological correlates. Age and sex differences show some parallels and some differences between sensation seeking and its biological correlates.

80-4-01

PA-63-08652

GENETIC ETIOLOGY IN THE HYPERACTIVE CHILD SYNDROME: A CRITICAL REVIEW

R. C. McMahon

University of Miami

American Journal of Orthopsychiatry (1980) 50:145-150

Reported studies of genetic factors of child hyperactivity are methodologically weak, but their positive findings indicate the value of research in this direction. Twin and adoption studies are recommended, and improved sampling and diagnostic procedures are indicated. An important research design would be multivariate investigation covering genetic, biological, and environmental influences simultaneously. The various factors may have additive or multiplicative interactions in causing the appearance of the syndrome.

5. TWIN RESEARCH IN SUBSTANCE EXPOSURE AND COTWIN CONTROL STUDIES

78-5-01

PA-62-00450

THE SEXUAL BEHAVIOUR OF EXPERIMENTALLY UNDERFED BULLS

S. Wierzbowski

Institute of Zootechnics, Department of Animal Reproduction, Krakow, Poland

Applied Animal Ethology (1978) 4:55-60

Compared the sexual behavior and efficiency of bulls with impaired growth and substantial differences in body weight. The bulls from each of eight pairs of twins were randomly divided into experimental and control groups. The feeding ration of the experimental group was about 30% less in crude protein content. The experiment lasted for 42 mo until the bulls were 5 yrs old. As a result, growth rate of experimental Ss was definitely reduced. At the age of 5 yrs the average weight of experimental Ss was 235 kg less than their control brothers. However, the lighter Ss were more efficient in sexual behavior patterns. The following were evaluated: Time until first mounting, time between copulations, total semen collection time, number of mounts per copulation, and total sexual efficiency. It is concluded that food restriction causing impaired growth has no adverse effects on sexual behavior in bulls.

78-5-02

PA-62-00549

BEHAVIORAL CHARACTERISTICS OF FREEMARTINS ADMINISTERED ESTRADIOL, ESTRONE, TESTOSTERONE, AND DIHYDROTESTOSTERONE

W. A. Greene, L. Mogil, and R. H. Fotte

Cornell University

Hormones and Behavior (1978) 10:71-84

Eighteen genetic female calves born cotwin with males and diagnosed as being sterile intersexes (freemartins) were studied from birth to 79 wks of age. Testosterone (T) and estrone (E1) were administered in Silastic capsules to two groups from birth to 50 wks of age; other Ss were left untreated. At 50 wks the two treated groups had larger implants installed, and the untreated Ss were assigned to a new estrone (E11) and estradiol (E-sub-2) treatment. Later a dihydrotestosterone (DHI) group was formed in comparison with new E-sub-2 and testosterone propionate-enanthate (TP-TE) groups, plus untreated controls. Agonistic behavior, interest in the genital area, and mounting were induced or stimulated by T, TP-TE, and E-sub-2, but not by DHT or estrone (E1 or E11). Also, only Ss in the T, TP-TE, E-sub-2 groups induced to mount displayed the standing type of behavioral estrus. Flehmen lip curl was stimulated only by T or TP-TE. Results indicate that T, per se, evokes the lip curl, but it probably stimulates other responses at the neural level by conversion to E-sub-2. Also, the freemartin response, the response of castrates to steroid hormones, and current knowledge of circulating steroid hormones in male and female cattle suggest that the neural tissue responsible for sexual behavior in both sexes of this species may respond similarly in several respects.

78-5-03

PA-62-06021

STRUCTURING AND ARTICULATION OF RORSCHACH INKBLOTS IN RELATION TO ALCOHOL CONSUMPTION: A COTWIN CONTROL STUDY

H. Bergman et al

Karolinska Institute, Department of Clinical Alcohol and Drug Research, Stockholm, Sweden

Perceptual and Motor Skills (1978) 46:947-952

Twenty male, alcohol-discordant twin pairs, aged 45-65 yrs, were compared for ability to structure and articulate Rorschach inkblots. The Rorschach responses were evaluated by a new rating scale technique. Data were analyzed by means of 1-sample t and multivariate T-sub(d-super(2)) tests. No relationship between alcohol consumption and tendency to articulate and structure could be established.

78-5-04

PA-62-10237

THE EFFECTS OF METHYLPHENIDATE ON THE MOTHER-CHILD INTERACTIONS OF HYPERACTIVE IDENTICAL TWINS

C. E. Cunningham and R. A. Barkley

Chedoke Child and Family Center, Hamilton, Ontario, Canada
Developmental Medicine and Child Neurology (1978) 20:634-642

In a triple-blind, drug-placebo, single-case reversal design with a pair of 5.5-yr-old identical twin boys, each S was observed interacting with his mother in a series of four 30-min sessions, which included 15 min of free play and 15 min of structured tasks. Medication was removed at least 24 hr prior to each session. Results show a marked reduction in activity during the drug sessions, accompanied by several shifts in the behavior of both the Ss and their mother. Both Ss showed a drug-related increase in solitary play and a corresponding reduction in their initiation of social interactions. The quality of the children's social behavior improved while on medication, and their mother was more responsive to the interactions that were initiated. Methylphenidate produced an increase in compliance and sustained attention to the activities assigned during the structured task sessions. This was associated with an increase in the frequency with which the mother rewarded or attended to compliant behavior.

79-5-01

PA-63-12130

ALCOHOLISM AND HEREDITY: A REVIEW AND HYPOTHESIS

D. W. Goodwin

University of Kansas Medical Center, Kansas City
Archives of General Psychiatry (1979) 36:57-61

Reviews recent evidence (from twin, genetic marker, and adoption studies) for a hereditary factor in alcoholism. Speculation about how genetic variation combined with conditioning might promote or prevent the development of alcoholism is noted. For example, the potential alcoholic must lack an intolerance for alcohol, must experience euphoria from drinking, and may experience dysphoria after drinking that is relieved by further drinking. Through stimulus generalization, a variety of rewarding states and activities may become associated with alcohol use. "Familial alcoholism" may be valuable as a diagnostic category. The term would include the following criteria: A family history of alcoholism, early onset of alcoholism, severe symptoms requiring treatment at an early age, and absence of other conspicuous psychopathology.

6. TWIN RESEARCH IN PHYSIOLOGY AND ANTHROPOLOGY

77-6-01

PA-61-05399

AN INVESTIGATION OF THE TRANSFORMATION OF MOTOR HABITS AS A FUNCTION OF GENOTYPE

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USSR Academy of Sciences, Scientific Research Institute of General and Pedagogical Psychology, Moscow
Voprosy Psikhologii (1977) 4:106-110

Compared shifting to another motor CR as a function of genotype. In 20 pairs of monozygotic (MZ) and 20 pairs of dizygotic (DZ) twins, same-sex pairs, a biceps-flexing CR (key-pressing) was established to a 1,000-Hz tone, with a 500-Hz tone being the negative stimulus. Twenty-three response measures were taken, including response latencies, movement time, and several EMG measures. The instructions were then changed to respond to the 500-Hz and not to the 1,000-Hz tone. Means, correlation coefficients, and F ratios comparing the MZ and DZ twins were computed. MZ twins were more similar than DZ twins on measures of total number of erroneous motor responses and erroneous EMG responses, reaction time, EMG latency, and movement time. The r and F values were obtained for the first response after changed instructions in reaction time, movement time, and EMG latency.

77-6-02

PA-62-02940

GENETIC DETERMINATION OF REACTION TIME IN MAN

L. P. Sergienko and S. V. Alekseeva

Pedagogica Institute, Nikolaev, USSR
Activitas Nervosa Superior (1977) 19:245-246

Subject terms: Monozygotic twins, reaction time, adolescents, motor processes, genetics, heterozygotic twins. Index phrase: Genetic determination of hand and foot RT to light stimuli, 12-17-yr-old monozygotic vs dizygotic twins.

78-6-01

PA-61-10461

A TWIN ANALYSIS OF DIETARY INTAKE: EVIDENCE FOR A NEED TO CONTROL FOR POSSIBLE ENVIRONMENTAL DIFFERENCES IN MZ AND DZ TWINS

R. R. Fabsitz, R. J. Garrison, M. Feinleib, and M. Hjortland
NIH, National Heart, Lung, and Blood Institute, Bethesda, Maryland
Behavior Genetics (1978) 8:15-25

In a National Institutes of Health study of 541 male twin pairs aged 42-56 yrs, monozygotic (MZ) twins were shown to "get together" substantially more often than dizygotic (DZ) twins. With this result as an indicator of differences in shared environment, the assumption of equal shared environmental variation for MZ and DZ twins was assessed using nutritional data calculated from a food frequency questionnaire. Six nutrients showed significant genetic variance for the total sample. However, when stratified on the basis of how frequently twins saw each other, none of the nutrients showed significant genetic variance for both strata. A similar pattern was seen for several individual items from the questionnaire. In addition, four of the nutrients showed significant correlation between the absolute difference in the nutrient intake of MZ twin pairs and how often they "got together." Data show that unequal environmental effects may lead to falsely high estimates of genetic variance for nutrient intake.

78-6-02

PA-62-05380

A TWIN STUDY ON THREE ENZYMES (DBH, COMT, MAO) OF CATECHOLAMINE METABOLISM: CORRELATIONS WITH MMPI

H. Winter et al
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Psychopharmacology (1978) 57:63-69

In 24 monozygotic and 24 dizygotic adult male twin pairs, the activities of dopamine-beta-hydroxylase (serum), catecholamine-O-methyltransferase (red blood cells), and MAO (platelets) were determined. No correlation between enzyme activities within one S was found. As in a comparable investigation by D. L. Murphy et al (1977), negative correlations between MAO activity and MMPI scores prevailed.

78-6-03

PA-63-09046

THE RELATIONSHIP BETWEEN SKIN TEMPERATURE AND SKIN CONDUCTANCE ACTIVITY: INDICATIONS OF GENETIC AND FITNESS DETERMINANTS

T. Lobstein and J. Cort
University of London University College, School of Environmental Studies, England
Biological Psychology (1978) 7:139-143

Experimental results in eight male adult twin pairs show a genetic contribution to some aspects of the relationship between skin conductance characteristics and mean skin temperature level. Fitness is also a determinant of skin conductance characteristics for a given skin temperature level, probably through the mechanism of heat adaptation.