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Delinquency and the Amphetamines

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The drug-taking behaviour of young people is causing great concern. The topic has been discussed for some years in the national newspapers and in the medical journals, and early last year the Government decided to take action.

The Drugs (Prevention of Misuse) Bill was enacted on 31 July and its main provisions came into operation on 31 October, 1964. Under this Act it is now an offence to be in unauthorized possession of amphetamine-type drugs, the penalties, on summary conviction, being a fine not exceeding £200 or imprisonment not exceeding six months, or both; and on conviction by indictment, a fine without limit or imprisonment not exceeding two years, or both. The Act allows Justices to issue warrants to the police to search clubs and cafés where these drugs are known to be obtainable. Importation, except under licence, is prohibited.

In 1963 the National Health Service Executive Councils and the British Medical Association, at the suggestion of the Home Office and Ministry of Health, drew the attention of doctors to the need for care in issuing prescriptions for amphetamines, and the Pharmaceutical Society of Great Britain have warned their members of the serious consequences of selling these drugs without prescription and of the need to watch for forged prescriptions. Drinamyl tablets ("purple hearts") have been changed both in colour and shape, and are now no longer readily distinguishable.

The pharmacology of the amphetamines is well reviewed by Connell (1962), while the toxic effects, especially amphetamine psychosis, and the misuse of the drug are dealt with by Connell (1958), Beamish and Kiloh (1960), Kiloh and Brandon (1962) and McConnell (1963). Two studies, Oswald and Thacore (1963) and Bell and Trethowan (1961) emphasize that the amphetamines may, after all the numerous statements to the contrary, be drugs of addiction and that the prognosis, at least in adults, may be very poor. Concerning young people, Kennedy and Fish (1956) quote Japanese studies which show that "There was a very strong relationship between wakeamine addiction and juvenile delinquency"; while Utena and his colleagues (1955) comment on the frequency of murder by wakeamine takers in Japan. Some journalists have given vivid first-hand descriptions of the teenage users of these drugs (Pharoah, 1964; Sharpley, 1964).

Little is known, however, in this country about the relationship between unauthorized amphetamine taking and delinquency. This study was therefore planned to determine the extent of unauthorized use of amphetamine drugs by delinquents and to examine the characteristics of those shown to be taking such drugs.

The Subjects

The subjects were young persons admitted to the two London Remand Homes (one for boys and one for girls) during the first half of 1964. The age range of these youngsters was 12–17 years, the great majority aged between 14–16 years. Not all of them, especially the girls, were technically offenders.

Young people remanded in custody cannot be assumed to be representative of delinquents in general. The reasons for remanding in custody are not made known, but in general the recalcitrant and more serious or obscurely motivated delinquents are so remanded.

The subjects were submitted (with some exceptions) to psychometric and psychiatric examination. An item sheet to standardize the collection of data was used.

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The Investigations

Urinary excretion of amphetamine starts within three hours of ingestion of therapeutic quantities of the drug; 30 per cent. being excreted within 24 hours and a total of 43 per cent. within 48 hours. However, following very large doses there is evidence that excretion may continue up to five or six days (Connell, 1958).

The concentration in any particular specimen is related to the amount of the drug ingested, the time interval since the last dose and to the rate of renal flow at the time the specimen is produced.

Because of these varying factors there will be no simple relation between the concentration of the drug in a single specimen of urine and the previous intake. No attempt was made therefore to assess the quantity of the drug taken; low concentrations were as significant for our purposes as high.

The urine specimens were collected from all subjects as soon as possible after admission to the Homes. No preservative was added, but the urines were refrigerated on arrival at the laboratory, and tested at convenient intervals thereafter by the following methods.

(a) *Estimation of Amphetamine-like Substances*

The method is slightly modified from that of Connell (1958) which was based on that of Brodie, Udenfriend and Dill (1947) and has been in regular use in these laboratories for several years. A benzene extract of the alkalinized urine is made and the amount of methyl orange which couples with basic material in the benzene extract is estimated colorimetrically after removal to an acid aqueous phase. The method is thus non-specific, estimating in terms of the standard used (here amphetamine) any basic organic substances which are both soluble in benzene and capable of coupling with methyl orange under the test conditions. When allowance is made for a normal urine content any excess can be attributed confidently to the presence of such a drug. This allowance is based on previous experience with normal subjects and patients known not to be taking reacting drugs. Making full allowance for the whole range of normal values may occasionally result in disregarding urine containing small quantities of drug. From other studies we have been able to detect drugs chromatographically in specimens showing a high normal value for amphetamine-like substances.

The method as used routinely estimates in the range of 20–1,000 μg./100 ml. urine with an accuracy of ±12 per cent. 200 μg./100 ml. is taken as the upper limit of "normal amines".

(b) *Chromatography*

It was intended to submit all specimens showing an excess of amphetamine-like substances to chromatographic examination. In fact there was not always sufficient material to allow this. Furthermore with a number of specimens it was possible only to extract estimated quantities of the drug which were near the limits of recognition on the chromatogram.

Alkalinized urine was extracted with benzene, which was then extracted with HCl. Suitable quantities of both extracts were applied to Whatman No. 1 paper and chromatograms were developed with Butanol-water-acetic acid (12-5-3). Staining for the benzene extract was with a platinic iodide reagent for phenothiazine and anti-histamine drugs; for the acid extract which would contain the amphetamine, a ninhydrin-pyridine stain was found most useful. Heating of the dried chromatogram for at least 3 minutes at 120° C. was necessary to obtain maximum staining of the amphetamine with ninhydrin. The amphetamine spot (Rf. 73–76) was well localized and had a rather grey-blue colour, which became a muddy blue when dense, and a muddy brown colour would persist after the blue had faded. In the tests spots with these characteristics were considered to confirm the presence of amphetamine, standard preparations of which were run with each batch of tests. Ephedrine was not always recognized as a separate substance, although when suspected careful measurement of the Rf. with a rather more intense staining would reveal the fact.

10–20 μg. quantities of standard amphetamines show a well-localized spot, but for the urine extracts it was usually necessary to apply at least 30 μg. of the estimated material to obtain good definition. When this involved the extraction of comparatively large volumes of urine the possibility of confusion with stainable quantities of leucine (Rf. 70) was considered. Adequate separation was obtained, however, when leucine was added to an amphetamine-containing extract. Codeine though capable of reacting as an amphetamine-like substance if in sufficient quantity does not stain with ninhydrin, but can be recognized in the benzene extract with platinic iodide staining. Phenothiazine and anti-histamine drugs can also be recognized in this extract, but these chromatograms were clear in all cases when amphetamine was reported in the chromatogram from the acid extract.

Results

The initial testing for amphetamine-like substances revealed many subjects with an excess present (Table I). As expected, the actual concentration varied considerably (27 with <100 μg./100 ml.; 45 with 100–400 μg./100 ml.; 12 with >400 μg./100 ml.). Chromatography confirmed that in the great majority of subjects amphetamine was the reacting substance, although in a few instances prescribed drugs, usually ephedrine, were responsible. For most of the specimens reported as doubtful or not confirmed the amount of material was limited.

The number of girls studied was less, and investigation of this group was stopped earlier owing to difficulty in supervising the study. In spite of the difference in total numbers, the findings in the two groups are similar in the proportion taking drugs.

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TABLE I

Summary of Results of Tests for Amphetamine-like Substances (ALS) and Chromatography in the First Series

Subjects	Total No.	Excess ALS	Chromatography : Amphetamine				
			Tested	Confirmed	Doubtful	Not Confirmed	Other Drugs
Boys	420	72=17·2%	70	50	8	9	3 ephedrine
Girls	54	11=20%	10	5	1		4 ? phenothiazines

At this point, because of adamant and often convincing denials by some subjects that they had ever taken amphetamine drugs, the techniques and supervision of the collection of specimens were carefully scrutinized. Additional *in vitro* tests showed that caffeine did not react, and ingestion of moderate amounts of "coca-cola" by a normal subject produced no abnormal results. A second series of boys was tested, this time re-testing after one week in the remand home.

Table II shows that a similar proportion of drug-takers are detected by the admission specimen examinations (18 per cent. as compared with 17–20 per cent. in the first series). If allowance is made for the numbers on prescribed drugs, the proportion taking unauthorized drugs is of the order of 16–18 per cent. of all admissions.

The results of the second specimen examinations indicate that a few individuals took drugs after admission. Four of these were negative on admission. This emphasizes that the number of drug-takers detected by a single examination on admission is minimal, and that the true numbers are probably greater.

WHAT THE BOYS SAY ABOUT DRUG-TAKING

The Effects of Amphetamine and Objectives

"It peps you up. Makes you feel awake. Gives you vitality. You can talk like anyone else. I can't dance with girls without it. You enjoy things better, get a better effect (when dancing). You don't care what's said about you. You can stay awake all the weekend. You don't need to go home on Saturday night. You just take them to be with it. Everybody does it, so you do. It wouldn't be so bad if the papers didn't talk about it so much, they even tell you where to get it and how much it costs. It makes your mouth dry. It shrivels your penis. It gives you hallucinations. You get the horrors if you stay

TABLE II

Summary of Results of Tests in Second Series. Boys Only
1st Specimen on Admission. 2nd Specimen One Week Later

Specimen	Total No.	Excess ALS	Chromatography : Amphetamine				
			Tested	Confirmed	Doubtful	Not Confirmed	Other Drugs
1st	138	25=18%	18	15		2	1 ? phenothiazine
2nd	96	8= 8%	8	6		1	1 codeine

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blocked too long." These are some of the statements of the boys.

A high proportion have experienced hallucinations, sometimes pleasant but usually frightening and with a paranoid element. Relatively small doses producing long periods of sleeplessness are the commoner cause of hallucinations rather than single massive doses. The experience does not seem to deter them (but of course we may only see those who are not deterred).

One 14½-year-old, a first offender, took part in a carefully planned warehouse-breaking with a 25-year-old man who gave him two Drinamyl tablets "to keep you on your toes".

None of the boys admitted being encouraged by their girl friends to take drugs. They do not usually take their regular girl friend to drug-taking parties, and the seeking of sexual adventure plays an unimportant part in such parties. The boys indicate that girls frequently take purple hearts, but not in such massive doses. One boy said, "I packed my girl friend in because she took too many pills . . . I hit her when she got blocked."

Sources of Supply

The outstanding finding is the ease with which the boys obtain amphetamine. "You can get them anywhere—on the street, in cafs and in West End clubs." One regular taker said, "I've never paid for them in my life." A year or so ago one often heard of West End parties in which a dish of purple hearts would be placed on the table, but this seems to have ceased. The tablets are bought at prices which steadily increase; 1s. a tablet was not uncommon in this series, but large quantities can be bought at a few pence per tablet.

The boys do not know the ultimate source of supply, or will not divulge it. They are aware of "pushers" who are usually described as adults aged 18 to 25 of either sex, usually "takers" themselves. Most agree or have heard that a smaller and weaker blue tablet of the same effect as Drinamyl comes from France. Most have seen heroin and cocaine being sold and used, but very few have tried it and there is a widespread and healthy awareness of the danger of these drugs. Most have also tried reefers (marihuana cigarettes) but the general opinion is that they are inferior, for their purposes, to amphetamine; "they don't keep you awake".

A few of the boys re-sell, or give away, Drinamyl or other forms of amphetamine, but on the whole boys of this age group are probably not themselves "pushers". Systematic vending seems to have been taken over by adults on a commercial basis. So far there is little necessity for youths to resort to crime (e.g. stealing of prescription pads from doctors) to obtain drugs, though two lads, not in this series, both subsequently charged with murder, had broken into a doctor's surgery, immediately after the killing, with the express and successful purpose of obtaining amphetamine.

Attitude to Amphetamine-taking

The outstanding finding is reluctance to admit taking the drug, especially among the 12 to 14 and some of the 15-year-olds. The investigator did not feel justified in applying great pressure and mainly relied on a check of the results through chromatography, by which time most of them were no longer in the remand home. Many of those who adamantly and convincingly denied ever having taken the drug were shown to have undoubtedly positive urines.

Spurious explanations offered included the following: "The mother of one of my friends takes pep-pills, one blue heart-shaped tablet a day; I picked them up for her when she dropped them and some got stuck on my fingers." . . . "I took some yellow tablets meant for the baby." . . . "I took my Mum's pep-pills."

Careful enquiry was made as to prescribed medication, and three positive urines were ascribed to medication with ephedrine. It may be of interest that the backgrounds of two asthmatic patients were very similar to those of the amphetamine takers—over-dependence on a dominant and punitive mother. Possibly these two conditions sometimes have this aetiological factor in common.

The psychiatric interview, in a remand home setting, cannot be expected to reveal more than

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20 per cent. of amphetamine takers, though experience suggests that under present conditions delinquent youths who are accustomed to frequenting West End clubs and bars almost invariably experiment with, if not regularly take, amphetamine.

Sixteen-year-olds, and those who also take the more dangerous drugs, are rather less reticent. Drug addicts proper, either because they believe their condition to be clinically obvious, or more probably because their depressive or masochistic qualities counteract cautiousness, freely, sometimes proudly, reveal or embroider the facts.

It is our impression that established addiction to morphine or cocaine in remanded delinquents is easily recognized and that the incidence is not greater than one in two thousand.

All those who admit taking amphetamine as well as those who are prepared to discuss the matter impersonally say that it is harmless and that they could stop if they wanted to. This applies also to those who are clearly addicted to amphetamine. It is so even in those who have steadily increased the dosage, who feel ill when they "come down", who resort to the drug to relieve these symptoms, and who have brought themselves to a state of obvious physical and mental impairment. Such statements may be self-defensive, but in general the drug is not feared as morphia and cocaine are feared.

Use of the Drug

Most are initiated in clubs, dives and bars, but, as stated, the drug is widely available; two twelve-year-olds said they were introduced to it in school. A starting dose of five Drinamyl tablets is most usual, taken just before, or on arrival at, a dance or party, usually on a Friday or Saturday night. For many this suffices. But later on the dosage may be increased to ten tablets repeated twice or thrice during the weekend. The aim is to enjoy their social functions for one night or throughout the whole weekend and to "come down" either to go home after the party or to return to work on Monday.

This weekend usage is very clear, but analysis of 50 "takers" and 100 "non-takers" did not reveal any significant differences as to day of admission to the remand home. Any such finding may have been obscured by the fact that delinquency in general tends to have a similar relation to the day of the week, and to the fact that juvenile courts sitting on different days of the week habitually make very different use of their powers to remand in custody.

The commonest vehicle is the purple heart (Drinamyl). Others commonly mentioned are French blues (possibly imported), black bombers (probably Durophet), green and red bombers (Durophet-M), Dexedrine, amphetamine, Sweeties (Preludin), dixies (possibly Dexedrine spansules). Inhalers are not mentioned as they used to be a year or two ago.

These youths are notably disinterested in alcohol. Excessive drinking is rare. They often meet in public houses and wash down their tablets with a soft drink. A common remark is "pills are cheaper than drink".

Most are reluctant to let their parents know of their drug-using—"My Dad would kill me" . . . "Don't let my Mum know, she'd do her nut". But with many of the older boys the parents may know, but are powerless to control them Three cases, not in this series, grew worse after exclusion from their homes on account of drug-taking. Some of those who participate in seaside bank holiday "riots" admit to having been continuously under the influence of amphetamine throughout the holiday.

Clinical Impressions

Young male amphetamine users fall into two fairly clearly demarcated categories which might be called benign and malignant. The characteristics of the malignant group are as follows: they increase the dosage, and are inclined to use a variety of forms of amphetamine in a reckless manner, they begin to take the drug in mid-week as well as at the weekend, and their physical health and school or work record fall sharply; in this self-destructive phase they may, but usually do not, turn to stronger drugs; they invariably have had grossly unfavourable home backgrounds; the essential element in their personalities is a basic lack of confidence in making personal relationships, together with an over-dependence on (or overstrong identification with) the parent (usually

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mother but sometimes an aggressive father). This may or may not be linked with overt hostility to the parent. They seem to live in a fearful, self-doubting, sometimes persecuted manner. Some of them are clearly trying hard to compensate for these feelings and then tend to appear sophisticated, and are always looking for a challenge or seeking to be noticed (the typical "mod") or they may have capitulated and will then be identified with other failures and outcasts either in the petty criminal culture or perhaps dependent upon more competent antisocial persons or as homosexuals; though the picture may differ widely, the basic handicaps seem to be the same.

The same background and personal handicap is often observed in non-amphetamine takers. Possibly some non-takers are so isolated that they are incapable of the necessary social competence to bring them to the clubs and bars where initiation occurs. Physiological differences in response to amphetamine may also be significant; some of these boys stated distinct preferences, e.g. "Purple hearts make me feel good but black bombers just give me a headache"; "the yellow ones make me feel awful". A search has been made for other personal qualities in this handicapped group which protect against drug-taking. Intelligence certainly does not do so. The nearest approximation to a protecting factor is narcissism. The youth who changes his shirt twice a day, carries a comb with which he frequently slicks his hair, spends his money on clothes, may be damaged in this way, but is unlikely to fall into the malignant group, and if he does is most unlikely to graduate to more dangerous drugs. Crime and the malignant type of amphetamine usage are related in parallel rather than causatively, but each may facilitate the other. Amphetamine, with its known tendency to produce a paranoid psychosis, may be particularly dangerous in the offender who is already inclined to feel persecuted. In such cases the balance may be tipped from aggressive defensiveness to murder. In this group a lesser crime, like an haemoptysis in tuberculosis, may be useful in bringing the person to the attention of the physician. In such cases the amphetamine addiction or habituation is very much more easily cured than the delinquent tendency.

Examples of Malignant Type

Case 1. A boy of 18, not in this series, convicted of murder, had been deserted by his mother at seven and subsequently spent most of his life in residential establishments, a children's home, two schools for maladjusted children, an approved school and a Borstal. At nine, a psychiatrist stated that the parents had quarrelled during most of their married life. His mother varied in her attitude towards him between casual neglect and sentimental petting, and tended to support the boy in his obvious hostility towards his father. The latter doubted whether the boy was his child and considered himself the victim of his wife's deception. At that time the boy was aggressive and difficult to handle; he felt persecuted by other children and that his teacher hated him. Violent temper outbursts led to psychiatric investigation and electroencephalography which at 16 showed a record "within normal limits". In addition he wet the bed until 12, was afraid of the dark, walked in his sleep, ran away on many occasions and from the age of 13 committed a long series of offences, including house-breaking, possessing firearms, shop and office breaking, stealing and being found on enclosed premises. Since leaving Borstal, four months before the murder, he had lived with his mother, supporting himself by systematic breaking and entering. His mother was afraid of him and had little or no control over him. She did nothing to stop him taking drugs. The youth was unable to make friendly relationships with anyone, but found that repeated doses of 10–15 purple hearts enabled him to talk to other boys and to go to dances. He therefore regularly took this drug, especially at weekends, and was accustomed to buying them, 100 at a time for a pound sterling. On the evening of the murder he took 10 purple hearts at 8 p.m. "Like all my mates do . . . it opens me up because I'm a shy person. We was going to bunk into the pictures which is the usual thing on a Sunday, but they kept throwing us out, so I went off on my own to do a breaking." He selected a shop and worked his way round to the back, climbing over several back yards. A man shone a torch at him. The lad "felt frozen" for a moment, then lashed out with his knife, killing the man with multiple stab wounds.

This case illustrates the serious personality disorder (invariably present in the malignant group), the strong pre-existing delinquent tendency, and the possible link between amphetamine-taking and murder.

Case 2. A 17-year-old took 20 purple hearts on a Saturday, 10 before going to a dance hall and 10 on arrival. He did not sleep over the weekend and on Monday failed to go to work. On Wednesday morning he was formally discharged from his job. He got to his digs at 2 p.m., feeling ill and tired; he slept till 6.30 p.m., then had a bath and slept again before going out to join his friends at a public house. Expecting a gang fight, he took a knife with him. A fight did develop in which a youth was stabbed and killed. This boy was charged with murder.

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He had started taking amphetamine six months previously after breaking off with his girl friend. He had been worried by his aggressive tendency towards this girl whom he sometimes used to hit; on this account he had attended his general practitioner asking for advice. After the break he felt very unhappy and thought of suicide; he asked his mother to bring him some aspirins, for suicidal purposes, but as she only brought two he did nothing further about it. He started taking five Drinamyl tablets at a time, but increased this to ten, sometimes repeated during the evening. His usual practice was to miss one complete night's sleep, spending the time at a West End club. At Easter (Clacton) he took a large amount of amphetamine over a three-day period and experienced "the horrors". At Whitsuntide (Brighton) he took "about a hundred" Drinamyl tablets without experiencing delirium. He rarely took tablets during the week. Sometimes he would miss a week through parental pressure and then found he could reduce the dosage the following weekend without loss of effect. His work record was very poor and he had lost weight. In custody he said, "My head feels clearer, I can remember things again". He gained weight rapidly. A few weeks before the offence he had been excluded from his home by his father and mother because he continued to take drugs and come in very late. Since then he had stayed with a number of friends and in a club. He was already the subject of enquiry by the police, at the time of this charge, in connection with a fight in another place two weeks previously. He had been convicted of a minor traffic offence and of careless driving in the preceding year before starting to take Drinamyl. Three years previously he broke his right fifth metacarpal on somebody's chin. At school he resigned as a prefect after being involved in a fight; he was known to be quick-tempered. His I.Q. was 127. No mental illness was detectable.

Case 3. Found guilty of being in possession of dangerous drugs (marihuana). There had been a minor stealing offence one month previously, and a taking and driving away offence two years previously. His father deserted when the boy was two years old, returned and left finally when he was 4½. His twin had died at five weeks and there were no other children. Mother had been described by a psychiatrist as child-like, nervous, emotional and over-anxious. She too was an only child, much spoilt by the maternal grandmother. In the midst of adolescence, having previously been a conforming and well-behaved boy, he said he had decided to change his friends and become a "beatnik". Starting with amphetamine, he graduated to marihuana and at 15 to intravenous cocaine. "I said I would only use it once, but by the end of six months I was using heroin and cocaine daily . . . In three years I have had almost every kind of drug . . . I could not physically do without them." He failed to attend at a psychiatric clinic; with his probation officer he was co-operative and friendly but made no effort to change his ways. His I.Q. was 123. His sexual and personality difficulties were illustrated by his remark, "If I like a girl I tend to be nasty to her. I don't get as involved as they do . . . No junkies have girl friends", and by his passive, degenerate sort of life.

The benign group of amphetamine-takers confine their indulgence to weekends, tend to use Drinamyl only, and do not increase the dose. They do not usually have such unsatisfactory backgrounds nor such severe personality disorders (as judged by capacity to make personal relationships with both sexes, better school and work records, and more healthy early relationships with their parents). The benign group includes Hewitt and Jenkins' "socialized delinquents" and Sullivan, Grant and Grant "I" levels 4 and 5, as well as the occasional "normal" delinquent.

Here again the relationship between crime and drug-taking is usually in parallel rather than causative. The rebellious adolescent, finding his home uncongenial, seeks satisfaction amongst similar youths of his district and is thus exposed to both these forms of behaviour. Occasionally, however, the taking of Drinamyl may figure largely as a causative or releasing factor.

Two 16-year-olds of impeccable previous characters, and from materially and emotionally excellent homes, both possessed of their own scooters, were found guilty of together taking and driving away a scooter. Their urines on admission contained large amounts of amphetamine-like substances, confirmed by chromatography as amphetamine. Though they both denied taking any drugs, it seemed probable that this out-of-character, isolated and impulsive offence would not have occurred but for the releasing and euphoriant effect of amphetamine.

The routine testing of urines has awakened us to some diagnostic errors. An immature-looking 13-year-old was remanded for psychiatric report on charges of stealing; there was insufficient family disturbance to account for his disorder, which included headaches deterioration in his attendance and behaviour at school, occasional periods of irritability alternating with sleeping in the classroom, and notable variability in mood from day to day. Though neurological examination was negative, the possibility of a cerebral lesion was suspected and he was sent home with a recommendation

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for immediate investigation in hospital. Six months later he was again remanded and this time, after his urine had been found positive for amphetamine, he admitted regular taking of Drinamyl over a period of a year. In this case his youth and immaturity obscured the possibility of Drinamyl-taking.

While the habit is typical of older teenagers, this diagnosis has to be considered in quite young children.

We have not met instances of glue or petrol "sniffing", but may well have missed some of them. We do not like to make routine enquiries for fear of suggesting this form of drug-taking. But of the sophisticated drug-takers none mentioned such techniques, though informative on matters equally incriminating.

Diagnosis

The majority of benign takers probably cannot be diagnosed except by analysis of urine, and this should be effected at least within 24 hours of the last dose, which is often impossible.

Observation should be made for the following points immediately on arrival: dilated pupils and dry mouth, euphoria, loquaciousness, restlessness, sleeplessness, which clear up within a day or two, perhaps giving place to an irritable, morose state. Rapid gain in weight during remand is suggestive but of course by no means pathognomonic. Behaviour after visiting is worth recording. Our experience is that some visitors supply boys with amphetamine. The addict is very likely to report sick and will frame his complaint with a view to a prescription of a tranquillizer or barbiturate. Dangerous-drug addicts are frequently genuinely hypochondriacal.

In the background the particular type of company and of social behaviour, and the deterioration in conduct and physical health will suggest the possibility even at the age of 12.

Comparison of "Positives" with "Negatives"

In this section 50 boys of this sample who were undoubted amphetamine-takers (Positives) are compared with 50 whose urine was negative on admission (Negatives). The samples are matched for age.

Type of Offence

		Acquisitive	Against Person	Others
Positives	%	68	6	26
Negatives	%	72	6	22
1949 sample	%	68	4	28

The 1949 sample consisted of 100 boys from the same remand home, of the same age range, but not individually matched for age; it was added because at that time amphetamine-taking was unknown in this age group.

The three offences against the person of the positives were:

1. threatening behaviour (taking part in a street brawl),
2. possessing an offensive weapon (a milk bottle),
3. robbery with violence (10s. and a scarf from another boy; no weapon used).

Clearly amphetamine users in this age group are not a particularly violent group.

It might have been supposed that the typical amphetamine-influenced offenders would be of two sorts: (1) very aggressive panic of defensively motivated attacks by boys in the paranoid and irritable stage; (2) impulsive breaking and entering offences in the early morning hours, committed by boys returning home in the euphoriant state. In fact, though both types have been observed, none of the former and only three of the latter actually occurred in this sample of 50 cases. The first case of the second type concerned a boy of 16 years 11 months from a large and highly delinquent family, who at 1.20 a.m. broke into a shop with his older sister in order to obtain cigarettes; the offence appeared to be understandable in terms of their reluctance to go home to an uncongenial household and showed no unusual features. A second case of this type concerned a boy of 15 who, after taking ten Drinamyl tablets, spent the evening in a Soho club and, while returning

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alone to his home at 6.30 on Sunday morning, broke into a shop and took £80 worth of goods.

It is of some interest to note the negative findings. It is already apparent that positive urines in remand home boys do not correlate with very aggressive offences: no bodily harm was suffered by any of the very few victims. There was no fire-raising or other very destructive behaviour. No firearms were used, and no serious road accidents caused. No sexual offences occurred; conceivably this may be directly due to the known sexual-depressant effect of the drug, but this is very doubtfully so, for in three cases parents complained that their sons had, on returning home in amphetamine intoxication, openly masturbated. "He sat down in front of the television, opened his trousers and started playing with himself . . . his sister was in the room; he didn't seem to know we were there." Another lad was observed to masturbate in the hospital waiting hall. This, when it occurs, is very suggestive of amphetamine intoxication. Typically, they do not remember these activities afterwards. Other delirious behaviour is sometimes reported after heavy doses: a boy broke into his own gas meter, taking £6 8s.; he then spent three days moving from club to club in the West End, taking an unknown but probably very large amount of amphetamine; intending to go home, he took a train at Charing Cross, but remembered no more until finding himself in the police station; he had been found by the police standing in the road, tearing up paper. This boy came from a home in which he received little attention or affection from either parent and his mother was floridly mentally ill.

Average Number of Previous Offences

50	1964 positives	2·5
100	1949 boys	2·2
50	1964 negatives	2·6

The number of previous offences of takers and non-takers does not differ significantly. As a matter of impression, however, hidden in these figures is a group of adolescents who, either because of or, more likely, as a common effect with drug-taking, embark on a series of rapidly repeated minor offences; examination of these cases reveals a conflagration of family tension and hostility or a break-down in a girl-friend relationship, which perhaps leads to a desperate reaching out to a number of different self-comforting, tension-relieving behaviours, including crime and drug-taking. Such behaviour is usually quickly detected and checked, often to the relief of the individual.

The material suggests that the main deleterious effects of habitual, or even weekend only amphetamine-taking is to be seen in the poor work record, bad time-keeping, further deterioration of personal relationships, loss of interest in girl-friends and thus turning more closely to the companionship of like-minded youths, loss of self-respect, inability to concentrate on school work and frequent truancy.

Seriousness as judged by the Sellin-Wolfgang scale (1963):

Scoring		0 Points	1 or 2 Points	3 or More Points
Positives	%	24	72	4
Negatives	%	24	70	6

Age. The 50 positives were compared with the first 100 negatives in this respect. The average age is almost identical (15 : 14 11/12 years). The range is also similar.

Ethnic

Positives: 3 West Indians; 1 Pakistani; 1 Indian

Negatives: 3 West Indians; 1 Polish immigrant.

Average number of siblings: Positives 4·8, Negatives 4·4.

		Ordinal Position			
		Only	First	Last	Middle
Positives	%	2	18	18	62
Negatives	%	4	28	26	42

Background

The following arbitrarily selected features give a basis for comparison.

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Factors in Family Background	Subjects	
	Positive %	Negative %
Illegitimate	8	12
Broken homes (death, desertion, separation, divorce)	32	36
Parent with criminal record ..	10	8
Long-standing marital disharmony	42	48
Parent has been in mental hospital	12	8
Alcoholism: one or both parents ..	4	8
Apparently satisfactory home ..	24	20

Personality

No obvious differences of personality between positives and negatives were apparent. The average intelligence quotient was a little lower in positives than negatives (97 : 99). Inspection did not suggest marked differences in type or severity of problems.

With the possible exception of a rather higher incidence of middle children among amphetamine-takers, there is remarkably little difference between the positives and negatives as regards type and frequency of crime, social and personal data. Amphetamine-taking is not particularly frequent in immigrants. No instance of the malignant group occurred in this sample of 50 but many have been seen in the remand home and in hospital practice. The incidence of the malignant group cannot be assessed but seems very low. While amphetamine can be a drug of addiction, in the great majority even of this very selected sample which may be assumed to include the most serious problems of delinquency, the taking of amphetamine appears to be incidental to delinquency, probably having similar roots in opportunity and predisposition. No more definite conclusion will be possible until the drug-taking habits of non-delinquent adolescents are known, and this will be a matter of great difficulty.

Treatment and Prevention

This study confirms that the proposed measures, including legislation, to reduce the ease of obtaining the drug are a necessary preliminary, likely to improve the position for the numerous casual, "social" takers rather than for the few addicts. Legislation making it an offence to be in unauthorized possession of amphetamine is likely to be of most value in permitting a proper investigation of the individual rather than by reason of new penal powers. The commercial aspect, however, indicates that deterrence may be important to purveyors of the drug. Other preventive measures have been described by Connell (1964), including co-operation in careful prescribing by the medical profession, education through schools and mass media of communication, and special clinics for the investigation and treatment of these drug problems. In such clinics, and in remand homes and centres, the application of a routine analysis of urine has a useful part to play. The present methods have proved satisfactory though simpler and less time-consuming tests would be preferable for more widespread use.

In general the problem of young amphetamine-takers is likely to resemble the problem of delinquency as a whole, in that the numerous "fringe" components may be easily tackled by simple social measures, leaving a small hard core who will be very difficult to help and who will quickly turn to other deviant social behaviour if blocked from amphetamine-taking.

Summary

A study has been made of unauthorized amphetamine taking amongst adolescents admitted to the London Remand Homes.

The methods of detection and their interpretation are discussed. Evidence of amphetamine taking was found in 16–18 per cent. of admissions and reasons are given for considering that the true proportion may be higher.

Comparison of detected amphetamine takers with those in whom no evidence of drug-taking was found showed no major differences in a number of personal and environmental factors. Their offences and the seriousness of the offences were similar.

The significance of these findings is discussed in relation to the general problem of delinquency.

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