

Secret Intelligence Service

Room No. 15

Notes regarding the effects of narcosis and any considerations which are relevant to possible counter-intelligence use

USE OF MIDAZOLAM WITH PULSE OXIMETRY IN THE DRUG ASSISTED INTERVIEW

The drug-assisted interview appears to be declining in psychiatric practice. This decline may be due in part to complexities in the use of barbiturates, which have a narrow therapeutic index.

Method: Five patients who had depression and/or posttraumatic stress disorder underwent drug-assisted interviews for which midazolam and pulse oximetry monitoring were used.

Results: The midazolam-pulse oximetry technique resulted in consistent and easily monitored levels of conscious sedation. Midazolam was judged comparably effective to amobarbital and easier to use.

Conclusion: A simple, safe, and effective technique for drug-assisted interviewing for which midazolam and continuous pulse oximetry monitoring are used is described.

Notes repeat

SUPPOSED TRUTH DRUGS IN INTERROGATION

The use of truth drugs here is similar to the accepted psychiatric practice of narco-analysis; the difference in the two procedures lies in their different objectives. The police investigator is concerned with empirical truth that may be used against the suspect, and therefore almost solely with probative truth: the usefulness of the suspect's revelations depends ultimately on their acceptance in evidence by a court of law. The psychiatrist, on the other hand, using the same "truth" drugs in diagnosis and treatment of the mentally ill,

is primarily concerned with psychological truth or psychological reality rather than empirical fact. A patient's aberrations are reality for him at the time they occur, and an accurate account of these fantasies and delusions, rather than reliable recollection of past events, can be the key to recovery.

The notion of drugs capable of illuminating hidden recesses of the mind, helping to heal the mentally ill and preventing or reversing the miscarriage of justice, has provided an exceedingly durable theme for the press and popular literature. While acknowledging that truth serum is a misnomer twice over - the drugs are not sera and they do not necessarily bring forth probative truth - journalistic accounts continue to exploit the appeal of the term. The formula is to play up a few spectacular truth drug successes and to imply that the drugs are more maligned than need be and more widely employed in criminal investigation than can officially be admitted.

Any technique that promises an increment of success in extracting information from an uncompliant source is *ipso facto* of interest in intelligence operations. If the ethical considerations which in Western countries inhibit the use of narco-interrogation in police work are felt also in intelligence, the Western services must at least be prepared against its possible employment by the adversary. An understanding of truth drugs, their characteristic actions, and their potentialities, positive and negative, for eliciting useful information is fundamental to an adequate defence against them.

This discussion, meant to help toward such an understanding, draws primarily upon openly published materials. It has the limitations of projecting from criminal investigative practices and from the permissive atmosphere of drug psychotherapy.

Scopolamine

Early in this century physicians began to employ scopolamine, along with morphine and chloroform, to induce a state of twilight sleep during childbirth. A constituent of henbane, scopolamine was known to produce sedation and drowsiness, confusion and disorientation, incoordination, and amnesia for events experienced during intoxication. Yet physicians noted that women in twilight sleep answered questions accurately and often volunteered exceedingly candid remarks.

In 1922 it occurred to Robert House, a Dallas, Texas, obstetrician, that a similar technique might be employed in

the interrogation of suspected criminals, and he arranged to interview under scopolamine two prisoners in the Dallas county jail whose guilt seemed clearly confirmed. Under the drug, both men denied the charges on which they were held; and both, upon trial, were found not guilty. Enthusiastic at this success, House concluded that a patient under the influence of scopolamine cannot create a lie ... and there is no power to think or reason." His experiment and this conclusion attracted wide attention, and the idea of a truth drug was thus launched upon the public consciousness.

The phrase truth serum is believed to have appeared first in a news report of House's experiment in the *Los Angeles Record*, sometime in 1922. House resisted the term for a while but eventually came to employ it regularly himself. He published some eleven articles on scopolamine in the years 1921-1929, with a noticeable increase in polemical zeal as time went on. What had begun as something of a scientific statement turned finally into a dedicated crusade by the father of truth serum on behalf of his offspring, wherein he was "grossly indulgent of its wayward behaviour and stubbornly proud of its minor achievements."

Only a handful of cases in which scopolamine was used for police interrogation came to public notice, though there is evidence suggesting that some police forces may have used it extensively. One police writer claims that the *threat* of scopolamine interrogation has been effective in extracting confessions from criminal suspects, who are told they will first be rendered unconscious by chloral hydrate placed covertly in their coffee or drinking water.

Because of a number of undesirable side effects, scopolamine was shortly disqualified as a "truth" drug. Among the most disabling of the side effects are hallucinations, disturbed perception, somnolence, and physiological phenomena such as headache, rapid heart, and blurred vision, which distract the subject from the central purpose of the interview. Furthermore, the physical action is long, far outlasting the psychological effects. Scopolamine continues, in some cases, to make anaesthesia and surgery safer by drying the mouth and throat and reducing secretions that might obstruct the air passages. But the fantastically, almost painfully, dry "desert" mouth brought on by the drug is hardly conducive to free talking, even in a tractable subject.

Barbiturates

The first suggestion that drugs might facilitate communication with emotionally disturbed patients came quite by accident in 1916. Arthur S. Lovenhart and his associates at the University of Wisconsin, experimenting with respiratory stimulants, were surprised when, after an injection of sodium cyanide, a catatonic patient who had long been mute and rigid suddenly relaxed, opened his eyes, and even answered a few questions. By the early 1930's a number of psychiatrists were experimenting with drugs as an adjunct to established methods of therapy.

At about this time police officials, still attracted by the possibility that drugs might help in the interrogation of suspects and witnesses, turned to a class of depressant drugs known as the barbiturates. By 1935 Clarence W. Muehlberger, head of the Michigan Crime Detection Laboratory at East Lansing, was using barbiturates on reluctant suspects, though police work continued to be hampered by the courts' rejection of drug-induced confessions except in a few carefully circumscribed instances.

The barbiturates, first synthesized in 1903, are among the oldest of modern drugs and the most versatile of all depressants. In this half-century some 2,500 have been prepared, and about two dozen of these have won an important place in medicine. An estimated three to four billion doses of barbiturates are prescribed by physicians in the United States each year, and they have come to be known by a variety of commercial names and colourful slang expressions: goofballs, Luminal, Nembutal, red devils, yellow jackets, pink ladies, etc. Three of them which are used in narco-analysis and have seen service as truth drugs are sodium amytal (amobarbital), pentothal sodium (thiopental), and to a lesser extent secobarbital (secobarbital).

As with most drugs, little is known about the way barbiturates work or exactly how their action is related to their chemistry. But a great deal is known about the action itself. They can produce the entire range of depressant effects from mild sedation to deep anaesthesia and death. In small doses they are sedatives acting to reduce anxiety and responsiveness to stressful situations; in these low doses, the drugs have been used in the treatment of many diseases, including peptic ulcer, high blood pressure, and various psychogenic disorders. At three to five times the sedative dose the same barbiturates are hypnotics and induce sleep or unconsciousness from which the subject can be aroused. In larger doses a barbiturate acts as an anaesthetic, depressing the central nervous system as

completely as a gaseous anaesthetic does. In even larger doses barbiturates cause death by stopping respiration.

The barbiturates affect higher brain centres generally. The cerebral cortex -- that region of the cerebrum commonly thought to be of the most recent evolutionary development and the centre of the most complex mental activities seems to yield first to the disturbance of nerve-tissue function brought about by the drugs. Actually, there is reason to believe that the drugs depress cell function without discrimination and that their selective action on the higher brain centres is due to the intricate functional relationship of cells in the central nervous system. Where there are chains of interdependent cells, the drugs appear to have their most pronounced effects on the most complex chains, those controlling the most human functions.

The lowest doses of barbiturates impair the functioning of the cerebral cortex by disabling the ascending (sensory) circuits of the nervous system. This occurs early in the sedation stage and has a calming effect not unlike a drink or two after dinner. The subject is less responsive to stimuli. At higher dosages, the cortex no longer actively integrates information, and the cerebellum, the "lesser brain" sometimes called the great modulator of nervous function, ceases to perform as a control box. It no longer compares cerebral output with input, no longer informs the cerebrum command centers of necessary corrections, and fails to generate correcting command signals itself. The subject may become hyperactive, may thrash about. At this stage consciousness is lost and coma follows. The subject no longer responds even to noxious stimuli, and cannot be roused. Finally, in the last stage, respiration ceases.

As one pharmacologist explains it, a subject coming under the influence of a barbiturate injected intravenously goes through all the stages of progressive drunkenness, but the time scale is on the order of minutes instead of hours. Outwardly the sedation effect is dramatic, especially if the subject is a psychiatric patient in tension. His features slacken, his body relaxes. Some people are momentarily excited; a few become silly and giggly. This usually passes, and most subjects fall asleep, emerging later in disoriented semi-wakefulness.

The descent into narcosis and beyond with progressively larger doses can be divided as follows

(I) Sedative Stage

(II) Unconsciousness, with exaggerated reflexes (hyperactive stage)

(III) Unconsciousness, without reflex even to painful stimuli

(IV) Death

Whether all these stages can be distinguished in any given subject depends largely on the dose and the rapidity with which the drug is induced. In anaesthesia, stages I and II may last only two or three seconds.

The first or sedative stage can be further divided:

Plane 1. No evident effect, or slight sedative effect.

Plane 2. Cloudiness, calmness, amnesia. (Upon recovery, the subject will not remember what happened at this or "lower" planes or stages.)

Plane 3. Slurred speech, old thought patterns disrupted, inability to integrate or learn new patterns. Poor coordination. Subject becomes unaware of painful stimuli.

Plane 3 is the psychiatric work stage. It may last only a few minutes, but it can be extended by further slow injection of the drug. The usual practice is to bring the subject quickly to Stage II and to conduct the interview as he passes back into the sedative stage on the way to full consciousness.

Clinical Studies

The general abhorrence in Western countries for the use of chemical agents to make people do things against their will has precluded serious systematic study (at least as published openly) of the potentialities of drugs for interrogation. Louis A. Gottschalk, surveying their use in information-seeking interviews, cites 136 references; but only two touch upon the extraction of intelligence information, and one of these concludes merely that Russian techniques in interrogation and indoctrination are derived from age-old police methods and do *not* depend on the use of drugs. On the validity of confessions obtained with drugs, Gottschalk found only three published experimental studies that he deemed worth reporting.

One of these reported experiments by D. P. Morris in which intravenous sodium amytal was helpful in detecting malingerers. The subjects, soldiers, were at first sullen, negativistic, and non-productive under amytal, but as the interview proceeded they revealed the fact of and causes for their malingering. Usually the interviews turned up a neurotic or psychotic basis for the deception.

The other two confession studies, being more relevant to the highly specialized, untouched area of drugs in intelligence interrogation, deserve more detailed review.

Gerson and Victoroff conducted amytal interviews with 17 neuropsychiatric patients, soldiers who had charges against them, at Tilton General Hospital, Fort Dix. First they were interviewed without amytal by a psychiatrist, who, neither ignoring nor stressing their situation as prisoners or suspects under scrutiny, urged each of them to discuss his social and family background, his army career, and his version of the charges pending against him.

The patients were told only a few minutes in advance that narco-analysis would be performed. The doctor was considerate, but positive and forthright. He indicated that they had no choice but to submit to the procedure. Their attitudes varied from unquestioning compliance to downright refusal.

Each patient was brought to complete narcosis and permitted to sleep. As he became semiconscious and could be stimulated to speak, he was held in this stage with additional amytal while the questioning proceeded. He was questioned first about innocuous matters from his background that he had discussed before receiving the drug. Whenever possible, he was manipulated into bringing up himself the charges pending against him before being questioned about them. If he did this in a too fully conscious state, it proved more effective to ask him to talk about that later and to interpose a topic that would diminish suspicion, delaying the interrogation on his criminal activity until he was back in the proper stage of narcosis.

The procedure differed from therapeutic narco-analysis in several ways: the setting, the type of patients, and the kind of truth sought. Also, the subjects were kept in twilight consciousness longer than usual. This state proved richest in yield of admissions prejudicial to the subject. In it his speech was thick, mumbling, and disconnected, but his discretion was markedly reduced. This valuable interrogation period, lasting only five to ten minutes at a time, could be re-induced by injecting more amytal and putting the patient back to sleep.

The interrogation technique varied from case to case according to background information about the patient, the seriousness of the charges, the patient's attitude under narcosis, and his rapport with the doctor. Sometimes it was useful to pretend, as the patient grew more fully conscious, that he had already confessed during the amnestic period of the interrogation, and to urge him, while his memory and sense of self-protection were still limited, to continue to elaborate the details of what he had already described. When it was obvious that a subject was withholding the truth, his denials were quickly passed over and ignored, and the key questions would be reworded in a new approach.

Several patients revealed fantasies, fears, and delusions approaching delirium, much of which could readily be distinguished from reality. But sometimes there was no way for the examiner to distinguish truth from fantasy except by reference to other sources. One subject claimed to have a child that did not exist, another threatened to kill on sight a stepfather who had been dead a year, and yet another confessed to participating in a robbery when in fact he had only purchased goods from the participants. Testimony concerning dates and specific places was untrustworthy and often contradictory because of the patient's loss of time-sense. His veracity in citing names and events proved questionable. Because of his confusion about actual events and what he thought or feared had happened, the patient at times managed to conceal the truth unintentionally.

As the subject revived, he would become aware that he was being questioned about his secrets and, depending upon his personality, his fear of discovery, or the degree of his disillusionment with the doctor, grow negativistic, hostile, or physically aggressive. Occasionally patients had to be forcibly restrained during this period to prevent injury to themselves or others as the doctor continued to interrogate. Some patients, moved by fierce and diffuse anger, the assumption that they had already been tricked into confessing, and a still limited sense of discretion, defiantly acknowledged their guilt and challenged the observer to "do something about it." As the excitement passed, some fell back on their original stories and others verified the confessed material. During the follow-up interview nine of the 17 admitted the validity of their confessions; eight repudiated their confessions and reaffirmed their earlier accounts.

With respect to the reliability of the results of such interrogation, Gerson and Victoroff conclude that persistent, careful questioning can reduce ambiguities in drug interrogation, but cannot eliminate them altogether.

At least one experiment has shown that subjects are capable of maintaining a lie while under the influence of a barbiturate. Redlich and his associates at Yale administered sodium amytal to nine volunteers, students and professionals, who had previously, for purposes of the experiment, revealed shameful and guilt-producing episodes of their past and then invented false self-protective stories to cover them. In nearly every case the cover story retained some elements of the guilt inherent in the true story.

Under the influence of the drug, the subjects were cross-examined on their cover stories by a second investigator. The results, though not definitive, showed that normal individuals who had good defences and no overt pathological traits could stick to their invented stories and refuse confession. Neurotic individuals with strong unconscious self-punitive tendencies, on the other hand, both confessed more easily and were inclined to substitute fantasy for the truth, confessing to offenses never actually committed.

In recent years drug therapy has made some use of stimulants, most notably amphetamine (Benzedrine) and its relative methamphetamine (Methedrine). These drugs, used either alone or following intravenous barbiturates, produce an outpouring of ideas, emotions, and memories which has been of help in diagnosing mental disorders. The potential of stimulants in interrogation has received little attention, unless in unpublished work. In one study of their psychiatric use Brussel *et al.* maintain that methedrine gives the liar no time to think or to organize his deceptions. Once the drug takes hold, they say, an insurmountable urge to pour out speech traps the malingerer. Gottschalk, on the other hand, says that this claim is extravagant, asserting without elaboration that the study lacked proper controls. It is evident that the combined use of barbiturates and stimulants, perhaps along with ataraxics (tranquillizers), should be further explored.

Observations

J. M. MacDonald, who as a psychiatrist for the District Courts of Denver has had extensive experience with narco-analysis, says that drug interrogation is of doubtful value in obtaining confessions to crimes. Criminal suspects under the influence of barbiturates may deliberately withhold information, persist in giving untruthful answers, or falsely confess to crimes they did not commit. The psychopathic personality, in particular, appears to resist successfully the influence of drugs.

MacDonald tells of a criminal psychopath who, having agreed to narco-interrogation, received 1.5 grams of sodium amytal over a period of five hours. This man feigned amnesia and gave a false account of a murder. He displayed little or no remorse as he (falsely) described the crime, including burial of the body. Indeed he was very self-possessed and he appeared almost to enjoy the examination. From time to time he would request that more amytal be injected.

MacDonald concludes that a person who gives false information prior to receiving drugs is likely to give false information also under narcosis, that the drugs are of little value for revealing deceptions, and that they are more effective in releasing unconsciously repressed material than in evoking consciously suppressed information.

Another psychiatrist known for his work with criminals, L. Z. Freedman, gave sodium amytal to men accused of various civil and military antisocial acts. The subjects were mentally unstable, their conditions ranging from character disorders to neuroses and psychoses. The drug interviews proved psychiatrically beneficial to the patients, but Freedman found that his view of objective reality was seldom improved by their revelations. He was unable to say on the basis of the narco-interrogation whether a given act had or had not occurred. Like MacDonald, he found that psychopathic individuals can deny to the point of unconsciousness crimes that every objective sign indicates they have committed.

F. G. Inbau, Professor of Law at Northwestern University, who has had considerable experience observing and participating in "truth" drug tests, claims that they are occasionally effective on persons who would have disclosed the truth anyway had they been properly interrogated, but that a person determined to lie will usually be able to continue the deception under drugs.

The two military psychiatrists who made the most extensive use of narco-analysis during the war years, Roy R. Grinker and John C. Spiegel, concluded that in almost all cases they could obtain from their patients essentially the same material and give them the same emotional release by therapy without the use of drugs, provided they had sufficient time.

The essence of these comments from professionals of long experience is that drugs provide rapid access to information that is psychiatrically useful but of doubtful validity as empirical truth. The same psychological information and a less adulterated empirical truth can be obtained from fully conscious subjects through non-drug psychotherapy and skilful police interrogation.

Application to CI Interrogation

The almost total absence of controlled experimental studies of "truth" drugs and the spotty and anecdotal nature of psychiatric and police evidence require that extrapolations to intelligence operations be made with care. Still, enough is known about the drugs' action to suggest certain considerations affecting the possibilities for their use in interrogations.

It should be clear from the foregoing that at best a drug can only serve as an aid to an interrogator who has a sure understanding of the psychology and techniques of normal interrogation. In some respects, indeed, the demands on his skill will be increased by the baffling mixture of truth and fantasy in drug-induced output. And the tendency against which he must guard in the interrogatee to give the responses that seem to be wanted without regard for facts will be heightened by drugs: the literature abounds with warnings that a subject in narcosis is extremely suggestible.

It seems possible that this suggestibility and the lowered guard of the narcotic state might be put to advantage in the case of a subject feigning ignorance of a language or some other skill that had become automatic with him. Lipton found sodium amytal helpful in determining whether a foreign subject was merely pretending not to understand English. By extension, one can guess that a drugged interrogatee might have difficulty maintaining the pretence that he did not comprehend the idiom of a profession he was trying to hide.

There is the further problem of hostility in the interrogator's relationship to a resistance source. The accumulated knowledge about truth drug reaction has come largely from patient-physician relationships of trust and confidence. The subject in narco-analysis is usually motivated *a priori* to cooperate with the psychiatrist, either to obtain relief from mental suffering or to contribute to a scientific study. Even in police work, where an atmosphere of anxiety and threat may be dominant, a relationship of trust frequently asserts itself: the drug is administered by a medical man bound by a strict code of ethics; the suspect agreeing to undergo narco-analysis in a desperate bid for corroboration of his testimony trusts both drug and psychiatrist, however apprehensively; and finally, as Freedman and MacDonald have indicated, the police psychiatrist frequently deals with a sick criminal, and some order of patient-physician relationship necessarily evolves.

Rarely has a drug interrogation involved "normal" individuals in a hostile or genuinely threatening milieu. It was from a non-threatening experimental setting that Eric Lindemann could say that his normal subjects "reported a general sense of euphoria, ease and confidence, and they exhibited a marked increase in talkativeness and communicability." Gerson and Victoroff list poor doctor-patient rapport as one factor interfering with the completeness and authenticity of confessions by the Fort Dix soldiers, caught as they were in a command performance and told they had no choice but to submit to narco-interrogation.

From all indications, subject-interrogator rapport is usually crucial to obtaining the psychological release which may lead to unguarded disclosures. Role-playing on the part of the interrogator might be a possible solution to the problem of establishing rapport with a drugged subject. In therapy, the British narco-analyst William Sargant recommends that the therapist deliberately distort the facts of the patient's life-experience to achieve heightened emotional response and abreaction. In the drunken state of narco-analysis patients are prone to accept the therapist's false constructions. There is reason to expect that a drugged subject would communicate freely with an interrogator playing the role of relative, colleague, physician, immediate superior, or any other person to whom his background indicated he would be responsive.

Even when rapport is poor, however, there remains one facet of drug action eminently exploitable in interrogation -- the fact that subjects emerge from narcosis feeling they have revealed a great deal, even when they have not. As Gerson and Victoroff demonstrated at Fort Dix, this psychological set provides a major opening for obtaining genuine confessions.

Considerations

It would presumably be sometimes desirable that a resistant interrogatee be given the drug without his knowledge. For narco-analysis the only method of administration used is intravenous injection. The possibilities for covert or "silent" administration by this means would be severely limited except in a hospital setting, where any pretext for intravenous injection, from glucose feeding to anaesthetic procedure, could be used to cover it. Sodium amytal can be given orally, and the taste can be hidden in chocolate syrup, for example, but there is no good information on what dosages can be masked. Moreover, although the drug might be introduced thus without detection, it would be difficult to achieve and maintain the proper dose using the oral route.

Administering a sterile injection is a procedure shortly mastered, and in fact the technical skills of intravenous injection are taught to nurses and hospital corpsmen as a matter of routine. But it should be apparent that there is more to narcotizing than the injection of the correct amount of sodium amytal or pentothal sodium. Administering drugs and knowing when a subject is under require clinical judgment. Knowing what to expect and how to react appropriately to the unexpected takes both technical and clinical skill. The process calls for qualified medical personnel, and sober reflection on the depths of barbituric anaesthesia will confirm that it would not be enough merely to have access to a local physician.

Possible Variations

In studies by Beecher and his associates - one-third to one-half the individuals tested proved to be placebo reactors, subjects who respond with symptomatic relief to the administration of any syringe, pill, or capsule, regardless of what it contains. Although no studies are known to have been made of the placebo phenomenon as applied to narco-interrogation, it seems reasonable that when a subject's sense of guilt interferes with productive interrogation, a placebo for pseudo-narcosis could have the effect of absolving him of the responsibility for his acts and thus clear the way for free communication. It is notable that placebos are most likely to be effective in situations of stress. The individuals most likely to react to placebos are the more anxious, more self-centred, more dependent on outside stimulation, those who express their needs more freely socially, talkers who drain off anxiety by conversing with others. The non-reactors are those clinically more rigid and with better than average emotional control. No sex or I.Q. differences between reactors and non-reactors have been found.

Another possibility might be the combined use of drugs with hypnotic trance and post-hypnotic suggestion: hypnosis could presumably prevent any recollection of the drug experience. Whether a subject can be brought to trance against his will or unaware, however, is a matter of some disagreement. Orne, in a survey of the potential uses of hypnosis in interrogation, asserts that it is doubtful, despite many apparent indications to the contrary, that trance can be induced in resistant subjects. It may be possible, he adds, to hypnotize a subject unaware, but this would require a positive relationship with the hypnotist not likely to be found in the interrogation setting.

In medical hypnosis, pentothal sodium is sometimes employed when only light trance has been induced and deeper narcosis is desired. This procedure is a possibility for interrogation, but if a satisfactory level of narcosis could be achieved through hypnotic trance there would appear to be no need for drugs.

Defensive Measures

There is no known way of building tolerance for a "truth" drug without creating a disabling addiction, or of arresting the action of a barbiturate once induced. The only full safeguard against narco-interrogation is to prevent the administration of the drug. Short of this, the best defence is to make use of the same knowledge that suggests drugs for offensive operations: if a subject knows that on emerging from narcosis he will have an exaggerated notion of how much he has revealed he can better resolve to deny he has said anything.

The disadvantages and shortcomings of drugs in offensive operations become positive features of the defence posture. A subject in narco-interrogation is intoxicated, wavering between deep sleep and semi-wakefulness. His speech is garbled and irrational, the amount of output drastically diminished. Drugs disrupt established thought patterns, including the will to resist, but they do so indiscriminately and thus also interfere with the patterns of substantive information the interrogator seeks. Even under the conditions most favourable for the interrogator, output will be contaminated by fantasy, distortion, and untruth.

Possibly the most effective way to arm oneself against narco-interrogation would be to undergo a dry run. A trial drug interrogation with output taped for playback would familiarize an individual with his own reactions to "truth" drugs, and this familiarity would help to reduce the effects of harassment by the interrogator before and after the drug has been administered. From the viewpoint of the intelligence service, the trial exposure of a particular operative to drugs might provide a rough benchmark for assessing the kind and amount of information he would divulge in narcosis.

There may be concern over the possibility of drug addiction intentionally or accidentally induced by an adversary service. Most drugs will cause addiction with prolonged use, and the barbiturates are no exception. In recent studies at the U.S. Public Health Service Hospital for addicts in Lexington, Ky., subjects received large doses of barbiturates over a period of months. Upon removal of the drug, they experienced acute

withdrawal symptoms and behaved in every respect like chronic alcoholics.

Because their action is extremely short, however, and because there is little likelihood that they would be administered regularly over a prolonged period, barbiturate truth drugs present slight risk of operational addiction. If the adversary service were intent on creating addiction in order to exploit withdrawal, it would have other, more rapid means of producing states as unpleasant as withdrawal symptoms.

The hallucinatory and psychotomimetic drugs such as mescaline, marijuana, LSD-25, and microtine are sometimes mistakenly associated with narcoanalytic interrogation. These drugs distort the perception and interpretation of the sensory input to the central nervous system and affect vision, audition, smell, the sensation of the size of body parts and their position in space, etc. Mescaline and LSD-25 have been used to create experimental psychotic states, and in a minor way as aids in psychotherapy.

Since information obtained from a person in a psychotic drug state would be unrealistic, bizarre, and extremely difficult to assess, the self-administration of LSD-25, which is effective in minute dosages, might in special circumstances offer an operative temporary protection against interrogation. Conceivably, on the other hand, an adversary service could use such drugs to produce anxiety or terror in medically unsophisticated subjects unable to distinguish drug-induced psychosis from actual insanity. An enlightened operative could not be thus frightened, however, knowing that the effect of these hallucinogenic agents is transient in normal individuals.

Most broadly, there is evidence that drugs have least effect on well-adjusted individuals with good defences and good emotional control, and that anyone who can withstand the stress of competent interrogation in the waking state can do so in narcosis. The essential resources for resistance thus appear to lie within the individual.

Conclusions to Draw

The salient points that emerge from this discussion are the following. No such magic brew as the popular notion of truth serum exists. The barbiturates, by disrupting defensive patterns, may sometimes be helpful in interrogation, but even under the best conditions they will elicit an output contaminated by deception, fantasy, garbled speech, etc. A major vulnerability they produce in the subject is a tendency

to believe he has revealed more than he has. It is possible, however, for both normal individuals and psychopaths to resist drug interrogation; it seems likely that any individual who can withstand ordinary intensive interrogation can hold out in narcosis. The best aid to a defence against narco-interrogation is foreknowledge of the process and its limitations. There is an acute need for controlled experimental studies of drug reaction, not only to depressants but also to stimulants and to combinations of depressants, stimulants, and ataraxics.

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Psychological Changes in Normal and Abnormal Individuals Under the Influence of Sodium Amytal. (*Amer. Journ. Psychiat.*, May, 1932.) Lindemann, E.

Sodium amytal produces a marked change in the behaviour of certain types of psychotic patients, and a less pronounced change in the emotional attitude of normal individuals, on the basis of the release of inhibitions. It permits a study of the thought content of stuporose patients which was previously impossible, and furnishes material which can be used in psychotherapy. The drug is given slowly, in doses of 2 to 3 gr., by the intravenous method.

M. HAMBLIN SMITH.

Cardio-Respiratory Variations in Personality Studies. (*Amer. Journ. Psychiat.*, May, 1932.) Larson, J. A., and Haney, G. W.

A polygraph technique is of material aid in the detection of deception, and is also useful in securing rapport in a resistant child. Questionnaires should be checked for their veracity by some objective method. The continuous method of graphic registration is preferred. The technique is of use in studying cases in which some delinquency is concealed, and in investigating the deception of the psycho-neurotic individual; it is as effective, in many cases, as is psycho-analysis, and where Freudian analysis is contra-indicated. A possible means for the study of the schizophrenic process is also offered by this method.

M. HAMBLIN SMITH.

The Children's Institute of the Allentown State Hospital. (*Amer. Journ. Psychiat.*, May, 1932.) Klopp, H. I.

The care of children who manifest conduct disorders and emotional upsets is of great importance. If anything is to be accomplished in the reduction of delinquency, and in lessening the need for placing young persons in institutions, it must be in the early recognition of juvenile offenders and problem children, and in the making of proper environmental adjustments. One secret of success lies in planning to keep the child's mind occupied with "normal" activities. Segregation of the children in a specially designed and properly fitted building is another important factor.

M. HAMBLIN SMITH.

Schizophrenia. (*Duke University Monographs*, No. 2, 1932.) Lundholm, H.

The author is careful to point out that in his opinion a diagnosis of schizophrenia should never be made if delusions and hallucinations occur as elements in a configuration of symptoms, some or even only one of which are definitely accessory to a state of general disintegration (as, for example, flight of ideas, or outbreaks of tantrums). A case showing schizophrenic features preceded by a long period of strenuous activity on the part of the patient may be of toxic origin, resulting from fatigue. The author points

Basic journalistic description

The term truth serum refers to a number of mind-altering drugs that make you incapable of lying, or so the theory goes. Yes, such mind-altering drugs exist, but their effect does not completely inhibit a subject's ability to lie.

Some truth serums, like sodium thiopental, slow the speed at which your body sends messages from your spinal cord to your brain. As a result, it's more difficult to perform high-functioning tasks such as concentrating on a single activity like walking a straight line or even lying. It's this concentration that you need to think up a lie that truth serum takes away.

The same thing happens when you're nodding off and reach that twilight state where you're in between consciousness and sleep.

If you're not a compulsive liar, then it's likely more difficult for you to lie than tell the truth.

That being said, there's no way to really know if someone is telling the truth, ever. Numerous accounts and scientific reports suggest that you're more prone to tell the truth under the effects of truth serum drugs, but the drugs have other side effects that might make you say something to please someone else that is not necessarily true.

Furthermore, not only are truth serum drugs not all that useful, they are illegal under certain circumstances including interrogation.

Older forms of truth serum used today

The term truth serum came onto the scene in the 1920s, but humans have known since the time of the Roman Empire that we're more readily truthful while under the influence.

Although many of the first drugs that the CIA, police, and Nazi interrogators used throughout the '20s, '30s, and '40s are still around today, they have other uses such as ingredients in medicines that prevent motion sickness and for lethal injection.



Scopolamine Plant. Columbia

Scopolamine was first promoted by Dr. Robert House as a truth serum in the early 20th century, and was the first drug to adopt the name truth serum. Throughout the 1920s and '30s police department in the US would use it on suspects and in some cases judges permitted the statements the subjects gave up while under the influence. Scopolamine was the truth serum drug of choice for many back in the day because it also wiped a subject's memory clean so they knew nothing about what they said after waking up.

The drug comes from the seeds of a tree, which locals call the get-you-drunk tree. While some Nazis used it in interrogation, today it's in many medicines to help prevent motion sickness and tremors of Parkinson's disease. It's also used as a date-rape drug.

Scopolamine can be ingested orally through a pill or in one bizarre case as a rub. Reports recount three young women in the Colombian capital, Bogota, who smeared the drug on their breasts luring men to lick it off. Once the men were incapacitated, the women would drain their bank accounts.

Sodium thiopental

Sodium pentothal is a barbiturate, which is a series of drugs that are central nervous system depressants, colloquially known as downers. Downers slow your body's process to transmit

information to your brain and are common prescription medicines for pain relief, sedation, muscle relaxation, and lowering blood pressure.

An overdose of barbiturates can be lethal and has led to a number of celebrity deaths including Marilyn Monroe, Judy Garland, and Jimi Hendrix. The drug was also one of the first used in lethal injections in the US and is most often administered intravenously.

Until 2011, it was sometimes used as an anaesthetic because patients usually pass out within 30-45 seconds after taking the drug. But the US stopped using the drug completely a few years ago.

This is because on January 21, 2011 the Italian company that produced the drug announced they were ceasing production. The company was worried that Italian authorities would use it in executions and as a result the US lost their only viable supplier.

There are still accounts of this drug's use as a truth serum. In 2007, police in New Delhi, India administered sodium pentothal to wealthy businessman, Moninder Singh Pandher, and his servant, Surender Koli who were suspects in the infamous Noida serial murders. While under the influence, they confessed to luring children to their home, raping, and then killing them. The servant, Koli, was given the death sentence and is in jail. Pandher was ultimately acquitted.

Amobarbital

Sodium Amytal is also a type of barbiturate, or downer. It was widely used during World War II as an anti-anxiety drug for soldiers with the psychological disturbance called shell shock. But like all truth serum drugs, sodium amytal is a powerful sedative, and that side effect combined with the dis-coordination and cognitive impairment it induces is why soldiers no longer use it.

Moreover, don't get too familiar with sodium amytal, or you might get addicted. This drug is sometimes used to treat insomnia and is often administered intravenously, although it can come in powder form for oral ingestion. Take too much of this drug and it can be lethal. The maximum dose for an adult is one gram.

This drug is no longer used as a truth serum because subjects sometimes develop false memories after the fact.

Ethyl Alcohol

That's right. Booze! The Italian phrase *In vino veritas*, which is Latin for "In wine there is truth", is attributed to a Roman philosopher known as Pliny the Elder. So, humans have known for roughly 2 thousand years about alcohol's ability to loosen the tongue.

If you've ever had one too many, then you could easily recognize the feeling you would experience with other truth serum drugs. Whether you're drinking it down or taking it intravenously in pure, ethanol form, this drug will make you more prone to spilling your secrets, but as you probably know, does not make you incapable of a little white lie every now and again.

Do any work?

In the 21st century, however, the answer appears to be: No. There is no pharmaceutical compound today whose proven effect is the consistent or predictable enhancement of truth-telling, Brown wrote in 2006.

Despite the fact that truth serum's magical capabilities seem to be mostly fictional, US courts have in special cases admitted the use of truth-serum drugs. One example was with accused 2012 Aurora, Colorado theatre shooter, James Holmes – a judge allowed the use of sodium pentothal on Holmes to determine if his claims of insanity were real, not if he was guilty. In fact, confessions of guilt admitted under the influence of truth serum drugs were ruled in admissible in US courts in 1963.

Just because no truth-inducing drug exists today, doesn't mean there could be one in the future, according to Mark Wheelis, a professor and expert on the history of biological warfare and biological weapons control at the University of California Davis.

There is a large number of neural circuits that we are on the verge of being able to manipulate – things that govern states like fear, anxiety, terror and depression, Davis told Washington Post reporter Brown. We don't have recipes yet to control them, but the potential is clearly foreseeable. It would absolutely astonish me if we didn't identify a range of pharmaceuticals that would be of great utility to interrogators.

A self-experiment - re; Michael Mosley

The best way to find out if truth serum works is to experience it for yourself, which is exactly what TV journalist Michael Mosley did.

To investigate sodium thiopental, one of the more popular truth serum drugs, Mosley took two different doses of the drug. After administering the first dose, a doctor asked Mosley what he did for a living and through fits of giggles Mosley managed to lie and say that he was a world-famous heart surgeon.

In less than a minute after the drug was administered, Mosley went into a fit of giggles from the light-headed, tipsy feeling he experienced from the drug. He said that the feeling was akin to drinking a glass of champagne.

After the second, larger dose of sodium thiopental, Mosley experienced something he was not expecting. When the doctor asked him what he did for a living he immediately responded:

"I'm a television producer. Well, executive producer, well, presenter, some, mix of the three of them."

Mosley explained later that when asked the question, it didn't even occur to him to lie, so he didn't.

AGAIN : DOES TRUTH SERUM WORK? DIFFERENT ANSWER

No, not exactly.

One of the biggest problems with using truth serum for interrogation, is the warm, friendly feeling it gives the subject toward their interrogator. Combined with a state of severe disorientation, this can lead a subject to tell their interrogator what they think the interrogator wants to hear, which could be true or not.

This is partly why any statement made under the influence of a truth serum drug is inadmissible in US courts and has been for more than 50 years. In 1963 the US Supreme court ruled that confession statements made under the influence of truth serum drugs was unconstitutionally coerced threatening citizens' rights under the fifth amendment and was therefore inadmissible.

So, when it comes to drugs that alter your state of mind, disorient you, and loosen your tongue, believe what you will about their abilities to enhance truth telling. The evidence shows that statements revealed under the influence have a chance of being more complacent or outright false than true.

Moreover, truth serums are mostly useless writes Esther Inglis-Arkell in i09, "not because no one could get information, but because everyone could get too much." And sifting through the statements trying to pull out the ones that are true versus complacent is, frankly, impossible. But researchers continue to look for something more reliable.

The future of truth-telling drugs

As we learn more about the brain and discover new drugs we could be on the verge of a new type of truth-telling and trust-enhancing drug.

One of the more recent drugs examined for its truth-telling affects is oxytocin, known to women in labour as Pitocin. In 2005, two researchers at the University of Zurich examined the trust-promoting effect of the drug by studying 130 college students, some of whom were given a snort of oxytocin while the others received a placebo.

They were asked to play an investing game in which they had to trust a stranger to give them back a portion of their winnings. The students given oxytocin were more trusting with their money and transferred more money, on average. More importantly, 45% of the students on oxytocin transferred all of their money, showing maximal trust, twice as many as students who took the placebo.

These new drugs that increase trust could be a next level advancement in truth serums – they would actually encourage truth telling instead of just making the teller say whatever makes their questioner happy. Don't worry too much, your secrets are safe for now.

Permission for narco-analysis on a spy was refused by the Pune courts a few days ago. The investigating authorities have perceived this as a setback in arriving at the truth'.

Methodology

In a clinical setting, narco-analysis and narco-therapy are conducted in a treatment room. The patient lies quietly with an iv line in place. While the psychiatrist recapitulates the patients history in a low monotone a nursing assistant injects

thiopentone sodium to terse instructions of push 50 or 25 slow. Thiopentone sodium is no rare drug. It is used every day to induce general anaesthesia. At lower doses in willing patients it produces a state of relaxation. You have to be careful the patient does not doze off or start slurring in speech. At the start of the narco-analysis attention has to be paid to the patient's posture and eye movement. Horizontal eye movements indicate a state of sufficient relaxation to proceed with the deeper probing interview. Subsequent aliquots are adjusted with the aim of maintaining this state during the rest of the interview.

Psychiatric Suggestions

The aim of narco-analysis is to produce an abreaction in hysteria and other disorders in which there is an element of dissociation. During abreaction the patient recalls traumatic experiences and, by talking about them, discharges associated disturbing emotions. Abreaction facilitates subsequent and sometimes dramatic recovery (Breuer & Freud 1957). However, there are only *anecdotal* - though fascinating and highly readable - reports for the effectiveness of narco-therapy (Miller 1954, Denson 2009). The theory is based on the unconscious suppression of emotion through use of psychological defence mechanisms. It may not apply when suppression is done consciously as in most forensic cases .

Narco-therapy is effective in relieving *catatonic mutism* (McCall et al 1992).

Narco-analysis was never considered as a method to get at the 'truth'. It was just the patient's perception of whatever he or she believed at that time. A similar process occurs every night in the bar when a garrulous, intoxicated person talks about whatever is bothering him or her.

A person can consciously lie during the procedure and get away with it.

At times it is difficult to separate actual events from fantasy.

You can even plant an idea into a person's mind through leading questions and later they would have no doubt it was their own.

CURRENT STATUS

MeSH term narco-therapy gives just two articles in the last ten years. There are no *randomised control studies* - the scientific standard - to demonstrate the reproducibility of results obtained by narco-analysis for information gathering, abreaction, or lie detection. Randomised control studies would give us an idea of the procedures sensitivity - the number of actual cases that would not be detected; and its specificity - the number of innocents who would be implicated. Presently all we have to go on are anecdotal reports of narco analysis practitioners. Not enough evidence to rely on narco-analysis for deciding the fate of an unwilling subject. Not even for spies caught in Pune. Even the judiciary is sceptical of narco-analysis..

While the forcible administration of so-called "truth serums"-drugs such as sodium pentothal, sodium amytal, and scopolamine -does not involve the infliction of severe pain, its use to secure information from a person would nonetheless be prohibited under international law. Human Rights Watch believes that at a minimum it would violate the person's right to be free from "inhuman or degrading" treatment. We note that Article 2 of the Inter-American Convention to Prevent and Punish Torture expressly defines torture as including "the use of methods upon a person intended to obliterate the personality of the victim or to diminish his physical or mental capacities, even if they do not cause physical pain or mental anguish."

The prohibition against the ill-treatment of persons under interrogation is rooted in respect for human dignity and the inviolability of the human body and mind. To force a person to talk through the application of drugs is as much a denial of human dignity as to coerce talk through the use of physical force. Securing testimony through the involuntary administration of drugs would also violate the right against self-incrimination if it were not done under a grant of use immunity. But even if such immunity were given-

thus solving
the problem of self-incrimination—drugging would still be
prohibited because
of its inhuman and degrading nature. Because of its profound
compromise of
the human personality, the use of drugs is quite different
from the forcible
taking of physical evidence—hair, blood, DNA, etc.—which is
permitted under
U.S. and international law.

The administration of any of the drugs identified as having
the potential for causing a person to talk is an involved
medical procedure requiring delivery of the drug intravenously
over a period that can range from two to twelve hours. The
international Principles of Medical Ethics Relevant to the
Role of Health Personnel provide that the participation of
doctors or other medical practitioners in the administration
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The use of truth serums is not an authorized method of
interrogation in the United States. Under U.S. law,
confessions made under the influence of truth serums are not
voluntary and are consequently inadmissible as evidence
Townsend v. Sain, 372 U.S. 293 (1963).

Investigators are not severely handicapped by not being able
to use truth serums. While certain drugs may reduce a person's
inhibitions against talking, they do not guarantee that the
person will in fact tell the truth. Under the influence of
such drugs, people may become highly suggestible, picking up
clues from the interrogators and agreeing to information that
is not true; they may relate fantasies; and they may still be
able to deliberately mislead. According to a study by medical
and legal experts:

Experimental and clinical findings indicate that only
individuals who have conscious and unconscious reasons for
doing so are inclined to confess and yield to interrogation
under drug influence. On the other hand, some are able to
withhold information and some, especially character neurotics,
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that it conforms to empirical fact" [Dession, Freedman,
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Investigation," 62 *Yale L.J.* 315, 319 (1953)].

As another expert noted, the intravenous injection of a drug by a physician in a hospital may appear more scientific than the drinking of large amounts of bourbon in a tavern, but the end result displayed in the subject's speech may be no more reliable. MacDonald, *Truth Serums*, 46 Crim. L.C. & P.S. 259 (1955). U.S. courts have generally ruled the use of truth serums is not a trustworthy truth-extracting procedure and have held evidence thus acquired is inadmissible, regardless of whether the drugs were administered voluntarily or involuntarily. E.g., *Lindsey v. U.S.*, 237 F.2d 893, 897 (9th Cir.1956)

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The administration of any of the drugs identified as having the potential for causing a person to talk is an involved medical procedure requiring delivery of the drug intravenously over a period that can range from two to twelve hours. The international Principles of Medical Ethics Relevant to the Role of Health Personnel provide that the participation of doctors or other medical practitioners in the administration of such drugs for interrogation purposes would violate medical ethics.

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NB Under customary international law as well as under international human rights treaties, torture or other cruel, inhuman or degrading treatment is prohibited at all times and in all circumstances. It is a non-derogable right, one of those core rights that may never be suspended, even during times of war, when national security is threatened, or during other public emergencies.

Secret Intelligence Service

Room No. 15

Notes regarding the effects of narcosis and any considerations
which are relevant to possible counter-intelligence use

Adversitate. Custodi. Per Verum