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RESTITUTIVE THERAPIES

ARNOLD M. LUDWIG
FRIDA G. SURAWICZ

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Arnold M. Ludwig and Frida G. Surawicz

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Restitutive Therapies

Restitutive therapies encompass the variety of techniques used to produce altered states of consciousness (ASC) in patients for therapeutic purposes. For some of these techniques, healing or curative powers are attributed to the experience per se of the ASC (e.g., mystical, peak, or transcendental states, postanesthetic amnestic states, etc.); for other techniques, the production of the ASC purportedly renders the mind susceptible to specific psychological maneuvers on the part of the therapist (e.g., narcoanalysis, narcosynthesis, abreaction, etc.). In general, these therapies, which aim toward reintegration of the personality, the controlled release of inhibitions, relief of nuclear conflicts, and renewed hope, are applied over a relatively short-time span, covering one to twenty sessions. While these ASCs can be evoked by a variety of means (Ludwig, 1966), this chapter will be limited solely to those techniques utilizing pharmacological agents.

History

Restitutive therapies have been an important tool in medicine from antiquity to the present. Primitive man knew that sickness could be influenced by suggestion. Since mental disease as such was not acknowledged but was attributed to spirit influences or demoniacal possession, the

treatment, of necessity, fell into the hands of priests and shamans. In the times before Hippocrates, treatment for the mentally sick took place in Aesculapian temples, starting with impressive religious ceremonies during which suggestions of healing were monotonously repeated. The patients were encouraged to dream of healing miracles and, depending upon the dream content, different drugs concocted from herbs were used. Not all patients were accepted and some patients were chased away with stones: however, the selection criteria are irretrievably buried in the vaults of time (Ludwig, 1964; Zilboorg, 1971). In the reign of Augustus, Celsus, a Roman with encyclopedic medical knowledge, described the use of total darkness as well as drugs for the treatment of mental disease. Among the drugs used were purgatives, like black hellebore, sedatives derived from poppies and henbane, emetics (white hellebore) and enemas. Excessive bloodletting to the point of fainting has also been an honored practice in the treatment of mental disease. Followers of Asclepiades prescribed large doses of alcohol and sexual exercises for mental patients (Zilboorg, 1971).

Alcohol

This is probably the oldest drug used by man for social, religious, and medical purposes. References to the use of wine have been discovered in Babylon and Egypt (Lucia, 1963). Vines were seen as godly plants and the juice of the grape was equated with divine blood. The priest drank in order to

establish a closer relationship with the gods, especially Osiris, the wine god. The Hebrews also drank for religious and medical purposes. The *Book of Proverbs* states "Give strong drink unto him that is ready to perish and wine unto those that be of heavy hearts, let him drink and forget his poverty and remember his misery no more." In ancient Greece, wine was used generously for religious, festive, and social occasions, including the symposium (Athenaeuns, 1927). The Greeks drank wine to seek communion with Dionysus. The religious and social use of alcohol found its way to Rome, where wine was used for libation and religious ceremonies devoted to Bacchus, which often deteriorated into orgies. The rise of Christianity put a stop to the excessive use of alcohol for religious purposes. However, it remained as a therapeutic drug. In the thirteenth century, a professor of medicine, Arnaldus de Villanova stated: "It purifies the five wits of melancholy and of all uncleanness" (Sigerist, 1943). The priest devoted to the cult of Bacchus, administering to his intoxicated followers, has been replaced in our times by the bartender who listens and gives advice to his drinking customers.

Peyote, Mescaline

Peyote is the dried top of the cactus *Lophopliora williamsii* and its active principle is mescaline. When the Spanish explorers traveled to the southwest of America, they noted that the Indians "eat a root which they call peyote, and

which they venerate as though it were a deity" (Huxley, 1963; Washburn, 1961). Subsequent investigators made similar observations and described the peyote cult during which food, drink, and cigarettes were offered to Peyote. Peyote has been used for 2000 years by the Aztecs and southwestern Indian tribes for religious ceremonies, to cure disease such as snake bites and arthritis and for intoxication (Slotkin, 1956). The use of peyote for social and recreational purposes by young people in the Western world is a well- known phenomenon of the 1960s and 1970s (Blum, 1964; Cholden, 1956; Unger, 1963; United Nations, 1959).

Psilocybin

Psilocybin falls in the same category as peyote and is one of the sacred plants of Mexico. The Psilocybin mushroom is called "god's flesh" or "the sacred mushroom" (Blum, 1964; Sargant, 1974) and is used, like peyote, to produce visions as a part of religious rites. There are some indications that mushrooms were also used to produce hallucinogenic states in India and Siberia. As with peyote, psilocybin has been used widely from the 1960s on among young adults in the Western world for cultural and social purposes.

Marijuana

In contrast, *cannabis sativa,* the marijuana plant, which originated in

Asia, has had no definite religious connotations. Marijuana, which is derived from the dried tops, leaves, or resin of the female hemp plant has been used as a medical drug for approximately five millennia (Goode, 1970). Although it has been widely used all over the world, its use for psychoactive purposes came into the national limelight in the 1960s, when it became the drug par excellence of the counterculture, young adults, and artists.

The above-mentioned drugs all change the mental states of their users. The assumption that mental illness is caused by the gods or by supernatural beings carries with it the implication that such substances are equally imbued with supernatural powers. The bacchantes and maenads, guided by their priests and soused with wine, underwent a complete personality change and had visions of heaven. Many a user of the hallucinogenic drugs claim to have experienced entirely novel insights or knowledge about themselves as well as about the universe (Huxley, 1963). Purportedly, they experience an "expansion of consciousness" and a transcendental relationship with the universe where perspectives of time and space have ceased to exist. They discover an inner world that appears as infinite and holy as the transfigured outer world.

All these drugs, therefore, produce profound subjective changes that cause persons to view themselves and their environment in a totally different manner. This can be effected directly through administration of psychotropic

drugs or indirectly through the use of purgatives, emetics, and bloodletting, which result in electrolyte disturbances and anemia. The latter experiences, by the way, can be compared with exorcism rites for spirit possession since both leave the patient physically weakened and emotionally depleted. All these drug-induced experiences lead to a catharsis, mental and sometimes physical, during which the patient bares his soul, opens his inner mind to the world and displays, in general, a decrease in inhibitions.

The close association of psychiatry and religion throughout civilization prompts us to draw a parallel between these therapies and religious or ideological conversion experiences. In a classical religious conversion, the subject appears dejected, guilt-ridden, and generally unhappy. The priest and other worshippers produce a highly emotional state, supported by rhythmic hand clapping, singing, dancing, etc. The subject is gradually induced into a state of intense emotional excitement, with lack of inhibitions, in which he confesses and acknowledges his sins and transgressions. This may, at times, be accompanied with dissociative reactions and followed by an emotional collapse, during which the subject feels that he is cleansed and free of all old feelings of tension, guilt, and sin. In this phase, the patient is vulnerable, defenseless, and ready to accept new patterns and reconditioning. He is, so to say, "reborn" and ready to be integrated into a different and new way of life.

Specific Techniques

Carbon Dioxide

Loevenhart et al. (1929) discovered in 1929 that withdrawn psychotic patients, upon inhalation of a mixture of carbon dioxide and oxygen for three to ten minutes, became relaxed and were able to relate and talk in a coherent way. It was noted that no lasting improvement resulted, but the temporary improvement was attributed to "cerebral stimulation." Meduna (1954; 1958) applied the technique to psychoneurotics and found the treatment successful in patients with conversion symptoms, anxiety neurosis, spastic colitis, and alcoholism. Stutterers, homosexuals, and patients suffering from personality disorders also benefited from this technique. Peck (1958) found carbon dioxide and oxygen inhalation superior to psychotherapy in the treatment of phobic patients. Meduna postulated that psychoneurosis was caused by an abnormally low threshold to normal stimuli and that carbon dioxide normalized the threshold to stimuli from within or from without.

Carbon dioxide should be administered with care in patients over forty-five years of age. The patient wears loose-fitting clothes and dentures are removed. The treatment is given on an empty stomach. A mixture of 30 percent carbon dioxide and 70 percent oxygen is inhaled through a tight-fitting face mask and a breathing bag with an expiratory valve to prevent a rise in pressure. After a few breaths, the patient may feel uncomfortable and become short of breath, but, with continued reassurance, should be told to

take a few more breaths at every subsequent treatment session. The introductory phase may last anywhere up to twenty-four respirations, whereupon the patient enters into the phase of anesthesia. During this phase, the patient may display motor phenomena such as struggling movements to escape discomfort, flexor hypertonus, and occasional carpal spasms. Abreaction with severe motor excitement takes place during the transitional phase, after the mask has been removed. Good results have been reported when the patient goes through a strong cathartic abreaction. The method is considered ineffective for obsessive-compulsive neurosis, hypochondriasis, and anxiety states with obsessional features. Modifications have been made by Kindwall (1949) who sets a limit to the number of inhalations and Wilcox (1951) who uses the method for "psychopenetration." Milligan (1951) starts out with pure oxygen and uses a smaller percentage of carbon dioxide, whereas LaVerne (1959) produces a quick anesthesia by using 70 percent carbon dioxide in oxygen for one to seven respirations. Because of its unpleasant side effects, carbon dioxide is frequently combined with other drugs such as ether and nitrous oxide to cut short the discomfort.

After the initial enthusiasm, several investigators expressed doubts about the efficacy of this treatment (Arthurs, 1954; Hargrove, 1954; Hawkings, 1956). Carbon dioxide is nowadays rarely used.

Nitrogen and Nitrous Oxide

Alexander and Himwich (1939) reported in 1939 on the beneficial effects of nitrogen inhalation in the therapy of schizophrenia, and explained this as a short-lasting anoxia that produced depression of the cerebral metabolism. Lehman and Bos (1947) reported positive results with nitrous-oxide inhalation, using it almost exclusively in psychotic patients. The procedures for both nitrogen and nitrous oxide are similar. The patient breathes through a Connell inhalator while the breathing bag is filled with nitrous oxide (or nitrogen) until his respiration becomes rapid, irregular, and automatic. At this point, the bag is emptied of nitrous oxide and filled with pure oxygen. After four to five respirations, the mask is removed. The patient loses consciousness about a minute later, and the whole procedure lasts between two and three minutes. After this experience, the patient feels euphoric. He displays a facilitation of his mental processes and appears to have gained insight. The method is reportedly safe and convenient and was especially recommended for the treatment of manic episodes. Nitrous oxide is more pleasant for the patient than carbon dioxide since it does not produce the fear of losing consciousness and the shortness of breath.

Ether

The induction of a narcotic state with ether was described by Sargant and Slater (1963) and Shorvon (1947). It was used for patients with previous stable personalities who suffered from depressive and hysterical symptoms

and persistent anxiety after traumatic incidents, but who were refractory to barbiturates. The investigators reported that the treatment was more effective if a state of violent emotional excitement was produced, especially in a previously stable personality.

As to method, ether is poured on a mask, which is held slightly away from the patient's face. The patient is encouraged to talk about those past experiences which may be expected to arouse powerful emotions, especially anger and fear. As he becomes absorbed in his story, the mask is brought nearer to his face. When he becomes slightly intoxicated, the excitement is deliberately stimulated by the therapist until the patient begins shouting and struggling. Additional personnel to hold the patient down and physical restraints add to his excitement, which steadily rises until a climax occurs. The patient subsequently passes into a state of collapse and exhaustion during which he becomes limp and unresponsive. This treatment is not recommended for chronically anxious patients, severe constitutional hysterics, obsessive-compulsive neurotics, or endogenous depressions.

Trichlorethylene

A similar method using trichlorethylene was developed by Rees (1950), who considered this anesthetic superior to ether, carbon dioxide, sodium amytal, or nitrous oxide. The patient sits on a chair or lies on a couch and

breathes steadily through a mask connected to an Oxford vaporizer. During this procedure, he becomes more communicative, but, at times, may become emotionally uninhibited. This method is recommended for narcoanalysis, abreaction, relaxation, hypnosis, narco-suggestion as well as for diagnostic purposes. The method purportedly works in acute situational reactions like war neurosis, but is ineffective in lifelong personality or chronic neurotic disorders.

Sodium Amytal, Pentothal, and Other Barbiturates

In 1930, Bleckwenn (1930), followed by Lorenz (1934) and Solomon (1931), reported beneficial effects in psychotic patients after a prolonged narcosis with intravenous barbiturates. This finding intrigued Erich Lindemann (1932) who gave between three and seven grains of sodium amytal, slowly, intravenously, to noncommunicative psychotic patients. This dose was insufficient to produce prolonged sleep or narcosis. However, during these injections the patients became cooperative and communicative and were able to relate important material. A controlled series of normal subjects reported a sense of well-being, freedom from inhibitions, and an increased desire to communicate, sometimes about intimate personal matters. Lindemann postulated that the drug removed certain inhibitions so that more primitive tendencies were displayed. Hoch (1946) developed the concept of narco-diagnosis and used sodium amytal, seconal, and pentothal to

disclose hallucinations and delusions in suspected schizophrenic patients who had appeared to be nonpsychotic during regular interviews. He felt that the drugs removed secondary manifestations of the mental state and uncovered the essential primary disturbance, as well as the psychodynamics. He differentiated between narco-suggestion and narco-catharsis or abreaction. During narco-suggestion the patient received, primarily, reassurance and support, with suggestions that he was going to get better. In narco-catharsis, the interviewer aimed to uncover and to let the patient react to repressed materials. Hoch reported benefits of narco-suggestion and narco-catharsis in patients with conversion hysteria, simple anxiety, fatigue states, and in some psychosomatic diseases. When the method was applied to patients suffering from a war neurosis, Hoch reported a return to duty of 75 percent. Obsessive, aggressive, and ruminative hypochondriacal patients did less well. The treatment was not recommended for alcoholics, drug addicts, and character neuroses.

Grinker and Speigel (1945) used sodium amytal for their modified version, called narcosynthesis. They felt that narco-catharsis was not sufficient and that the abreaction during the pentothal or amytal interview did not necessarily lead to improvement, especially since the patient was frequently amnestic for what transpired during the interview. Instead, they proposed narcosynthesis in which the patient not only expressed and relived the repressed painful or traumatic event but was taught by the therapist to

deal with it in a more economical and realistic fashion so that the repressed or forgotten feelings could be synthesized by the ego. This also implied the synthesis of related feelings to the traumatic period that had occasionally been separated through the process of dissociation. Grinker reported a return to some sort of military duty after treatment for 97.7 percent for officers and 79.1 percent for enlisted men. The best candidates for this treatment were young soldiers with a sense of guilt and depression. Patients with psychoticlike reactions also had a fairly good prognosis. The poorest prognosis was reserved for patients with hostile, aggressive, and psychopathic-like reactions. Sargant and Slater (1948; 1963) used intravenous barbiturates during World War II as a front-line technique for functional amnesic states and acute conversion symptoms and recommended its use in peacetime for hysterical conversion reactions.

Method

Sodium pentothal is administered in a 2.5 or 5 percent solution. The average dose for a satisfactory interview is between 0.25 and 0.5 g. but doses up to 0.75 to 1.0 g. have been used. It is essential that the patient be given a brief description of the protocol and be asked to sign a permit. The patient is placed in a semi-darkened, quiet room and the drug is injected at a slow rate, not to exceed 0.1 g. per minute while the patient is asked to count. He soon starts to complain of lightheadedness or of feeling drunk. At this point one

should interrupt the injection while the needle is left in place. The patient commonly speaks with a slow voice and his speech may be somewhat thick. The therapist in most cases will have to initiate the conversation and lead the interview in the direction of assumed conflicts. The therapist should remain calm, soothing, and supportive. Sometimes a patient may go into a severe terror state and it is advisable to have a few people present during the interview to control the patient and to protect him from injury. Following the abreaction, the patient typically appears exhausted and depleted. Many therapists make positive suggestions, then increase the pentothal dose after having told the patient that he will have a healthy sleep from which he will recover refreshed and free from conflicts.

The same procedure is used for sodium amytal, which comes in ampules of 7.5 gr. in 5 or 10 cc. The injection rate is not to exceed 1.5 gr. per minute. This method is contraindicated in severe medical illness, such as liver and kidney disease, cardiac failure, and porphyria.

Methedrine, Methylphenidate, and Droperidol

Following World War II different groups of drugs found their way into the armamentarium for narcoanalysis. Simon and Taube (1946) reported on the use of methedrine, which made the patients more communicative and verbal and at times produced an abreaction. They also recommended the use

of methedrine to disclose psychotic material. In Great Britain, Sargant (1948) and Shorvon (1953; 1950) reported positively on the use of methedrine for patients suffering from war neurosis and other neurotic reactions. Shorvon used methedrine in dosages up to 20 mg. intravenously to treat skin disorders, phobic states, depersonalization, traumatic anxiety states, psychosomatic diseases, and mixed hysterical states and found it to be superior to ether in the treatment of patients with obsessive trends. Rothman and Sward (1956) described excellent results in a group of patients who had been refractory to other treatments, with a minimum dosage of thiopental sodium followed by 5 to 15 mg. of methamphetamine hydrochloride, and Davison (1964) described good results in cases with episodic depersonalization.

Methylphenidate in doses up to 15 mg. IV has been reported by Freed (1958) to increase verbalization and to bring repressed material to the surface. Freed (1958) prefers this over a combined program of sodium amytal and methamphetamine, mostly because the patient is easier to manage and does not suffer from insomnia. More recently, methylphenidate has been given intravenously following an IV drip of 0.1 percent solution of methohexital, an ultra short-acting barbiturate. With this method the depth of the inhibition reduction can be easily controlled (Green, 1974).

Droperidol, a butyrophenone derivative, has been used with reported

good results in delinquent adolescents by Jauch et al. in dosages between 10 and 15 mg. IV (1973).

LSD (d-Lysergic Acid Diethylamide)

Following its accidental discovery in 1943, LSD was first used to induce time-limited, psychotic reactions (model psychoses). Subsequently, this controversial and dramatic drug, as well as comparable agents (e.g., psilocybin, DMT), found its way as an aid to psychotherapy for a variety of conditions. Different methods of treatment with LSD have been developed.

In psycholytic therapy, low doses of LSD (30-200 μg.) are used as an adjunct to a form of regular insight-oriented psychotherapy (Buckman, 1967; Leuner, 1967). The therapist uses the hallucinogenic potential of LSD to heighten symbolic dream images, regression, and transference, but the focus is on insight pertaining to reality problems.

In psychedelic therapy, in contrast, the patient receives high dosages of LSD (400-1500 μg.) to undergo an intense mystical peak or transcendental experience (Savage, 1967). The patients are prepared for this in previous sessions and the LSD experience is aided and supplemented by paraphernalia such as strobe lights, music, incense, etc. This type of therapy, which carries with it the trappings of a religious conversion, is restricted to one or, at best, a few sessions.

Hypnodelic therapy was developed by Ludwig and Levine as a method to control and modify the LSD experience through hypnosis in psychotherapy (Levine, 1965; Levine, 1966, Levine, 1963; Ludwig 1968; Ludwig, 1965). The average dose is 150-350 *fig.* and upon administration of the drug, before it takes effect, the patient is hypnotized. Subsequently, the patient is encouraged to discuss and relive major conflictual experiences. This treatment model is dynamic and insight-oriented and utilizes play acting, abreaction, and posthypnotic suggestions based on the obtained insight.

The use of LSD in psychotherapy was widely hailed in the 1950s as an important breakthrough in the treatment of refractory cases. Many investigators and clinicians used the drug in individual and group therapy and reported excellent results in the treatment of psychoneuroses, acute and chronic character disorders, including sociopathy, homosexuality, and sexual perversions (Abramson, 1955; Abramson, 1956; Abramson, 1960; Arendsen-Hein, 1961; Ball, 1961; Butterworth., 1962; Cameron, 1961; chandler, 1960; Frederking, 1955; Lewis, 1958; Ling, 1960; Martin, 1957; Sandison, 1954; Sandison, 1954; Sandison, 1957). Statistics combining all these reports reveal "marked improvement" rates of 45 percent and "improved by treatment" rates of 70 percent. The early reports of treatment of alcoholics employing LSD claimed a 94 percent improvement rate. It was generally accepted that a one-time, intense, mind-expanding psychedelic experience would restitute or reintegrate previously pathological personalities and, therefore, was superior

to years of traditional psychotherapy. Not until the 1960s were some voices raised to dampen the unbridled enthusiasm and point out the potential dangers of indiscriminate use of hallucinogenic agents. The fate of LSD in restitutive therapies was sealed in 1970 by the controlled study of LSD in the treatment of alcoholism (Ludwig, 1970). Despite the above-mentioned, impressive claims of improvement, the authors found no lasting short- or long-term benefits after hypnodelic or psychedelic therapy compared to ordinary therapy. Other investigators obtained comparable results (Hollister, 1969; Johnson, 1969).

Mechanisms

The following major theories are offered to explain the underlying mechanisms of action of the restitutive therapies. It is felt that the theoretical explanations at times overlap and arc not mutually exclusive.

Altered States of Consciousness

This concept, as developed by Ludwig (1966), has become increasingly relevant in contemporary research in psychiatry, and implies subjective as well as objective changes from the normal psychological functioning during alert, wakeful consciousness. During an altered state of consciousness, the subject frequently experiences a change in the sense of time as well as a loss

of control. The subject succumbs to this latter change with the hope that some special knowledge or communion will be established. Perceptual distortions, such as hallucinations, illusions, as well as heightened or diminished sensitivity to stimuli, are part of most altered states of consciousness. Many subjects attach an increased meaning and significance to their perceptions, ideas, and experiences during such states, feeling that they are undergoing a very unique or important event that reveals to them a very special truth or insight. Because of the unusual quality of the subjective experiences, characterized by transcendental, oceanic, mystical, or universal feelings, the individual is often unable to describe or relate these experiences. These very qualities add to the patient's feeling that he has obtained the ultimate in knowledge or insight and that his sense of reality has deepened to a level never before experienced.

Following most profound alterations of consciousness, whether they be abreactive states, mystical experiences, consciousness expansion, religious conversion, or just plain sleep, patients report a sense of rejuvenation and a sense of being reborn.

Neurophysiological Mechanisms

Sargant (1948; 1957; 1969; 1974) developed a theory, based on Pavlovian principles, to explain catharsis abreaction, possession, conversion,

and similar intense emotional states. Various degrees of external or internal stress bring about changes in brain function, starting with "protective inhibition," where all strengths of outside stimuli produce the same brain responses independent of their differences in strength. This is followed by the "paradoxical phase" in which the brain overreacts toward a small stimulus and remains indifferent toward overwhelming stimuli. In the ultra-paradoxical phase, all positive conditioned reflexes become negative and vice versa. This is combined with the hypnoidal state of inhibitory brain activity, in which new expressions, ideas, and philosophies are uncritically and unconditionally accepted without any processing or screening by the brain. The benefit of restitutive therapy is attributed to this last event.

Psychoanalytic Theories

The effectiveness of cathartic therapy has been explained according to psychoanalytic principles by Kubie and Margolin (1945). According to their theory, a dynamic relationship between patient and therapist is maintained, provided the drug dose does not lead to narcosis. Because of this dynamic relationship the patient relates pertinent data and events and is able to relive extreme affection, both positive or negative, toward significant people. In addition, the patient often displays a marked transference reaction toward the therapist in an obvious and direct way rather than in the subtle transference during regular therapy sessions. This, then, makes it easier to

use the transference process therapeutically.

It was further postulated that certain highly emotional and traumatic events stand out like high centers. The drug brings the conflictual centers into high relief in a more direct way than through the usual pathways of free association. The drugs, in essence, produce a controlled delirious state and, therefore, like organic delirious reactions, bring to the surface latent depressions, elations, fear reactions, or paranoid states.

Conclusion

In this chapter, we have described the historical development and present status of restitutive therapies. These intriguing and dramatic techniques, which take root from naturalistic healing practices either of a religious or medical nature, still have their place in modern psychiatric practice. While most of the impressive claims made for these therapies are anecdotal or descriptive in nature, the state of psychiatry is such that any promising or even controversial approach for refractory patients should be given a thorough test. There is a desperate need for continued, controlled evaluation of the different techniques employed, as well as of the different categories of patients who may benefit from them.

Some restitutive approaches, notably sodium amytal and pentothal interviews, are still widely used in clinical practice, whereas other

controversial approaches have fallen into disfavor or have been shown scientifically to have little efficacy. From the long history of these approaches, it is likely that they or newer variations of them will always have a place in psychiatry. It behooves eclectic psychiatrists to be familiar with the potential applications of these techniques and, perhaps, to include them in their therapeutic armamentarium.

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