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Characteristics of Firesetters in Different Developmental Stages of Growth

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CHARACTERISTICS OF FIRESETTERS IN DIFFERENT
DEVELOPMENTAL STAGES OF GROWTH

BY

IRA AUSTIN SMITH

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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IN
PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

1968

ABSTRACT

A discriminant analysis, analysis of maximum separation, and analysis of percentage of contribution of sixty-four case referred firesetters and sixty-four equated, case referred nonfiresetters to Mental Hygiene Services and Child Welfare Services, Department of Social Welfare, State of Rhode Island, partially confirmed the hypothesis that firesetters can be differentiated from nonfiresetters by the psychological characteristics of impulsiveness, hyperactivity, enuresis, hostility, theft, destructiveness, hyperkinesis, and abnormal sexual practices at different chronological, developmental stages of growth. Only a combination, disregarding individual analysis, of age groups five through seven, eight through eleven, and twelve through sixteen in toto, yielded significant ($p < .05$) results. This suggested that firesetters and nonfiresetters develop, both physically and emotionally, in accord with Freudian psychosexual, developmental stages. The hypothesis that firesetters remain fixated on an oral psychosexual level of development was therefore rejected as was the suggestion that they are fixated on a more advanced phallic-urethral psychosexual level.

The behavioral characteristic, impulsiveness, was found to be the only symptom in the total group which contributed heavily (68 percent) to the maximum separation of firesetters and nonfiresetters; the other symptoms contributed less than 10 percent individually. The categorical question, "what is a firesetter?" was concluded to be a meaningless query in regards to the clinical application of differenti-

ating firesetters and nonfiresetters and formulating viable theoretical hypotheses concerning the psychodynamic interpretation of the act of firesetting. Psychodynamic postulations concerning the act of firesetting remain on a idio-graphic level because of methodological problems, of which ~~some~~ are inherent, in research for "ap lied" fields. The literature was critically reviewed in order to provide an explanation for previous contradictory findings and to propose guidelines for future research in this area.

The author wishes to acknowledge the time, help, and encouragement given him by his committee, Dr. Lester Carr, Dr. Richard W. Fesse, and Dr. Lester E. Caroselli. The author also wishes to express his appreciation to Miss Gabriella Stüdl for her assistance in translating German articles which were necessary for the successful completion of the study.

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I. INTRODUCTION

I. INTRODUCTION

The word, pyromania, is derived from the Greek "fire" and "madness." The definitions of pyromania, pathological firesetting, and firesetting, the term which was used in the present study, can be regarded as synonymous when the focus is upon underlying psychological attributes and dynamics of the firesetter. Traditionally, these concepts have referred to an overwhelming desire to impulsively destroy objects by fire. As the review of the related literature will illustrate, inconsistencies in the investigation of and conclusions from relevant studies have made the formulation of a more adequate psychological definition of "what is a firesetter?" difficult.

Most, if not all, investigations concerning firesetting, while distinguishing characteristics of firesetters, have failed to determine if other clinic or "normal" populations can be characterized by the same behavioral symptoms. Also, the research procedures which were used in many studies reduced the credibility of reported results and subsequent generalizations.

While attempts to delineate a psychological syndrome of firesetting have met with contradictory results, numerous hypotheses have been generated upon the implicit assumption that the firesetter is a psychological entity. The present study was an attempt to clarify two basic assumptions: (1) firesetters can be distinguished from nonfiresetters, (2) firesetters are capable of being characterized within a recognized theoretical framework, namely Freudian psychosexual

development. In order to consider the above two assumptions, three basic questions had to be answered: (1) What are the characteristics of firesetters? (2) At what chronological and psychosexual age is the incidence and prevalence of these characteristics most common? (3) Can these characteristics at different developmental stages of growth be of value in differentiating firesetters from nonfiresetters?

Kaufman, Heims, and Reiser,¹ Lewis and Yarnell,² and Yarnell³ found that firesetters were characterized by impulsiveness, hyperactivity, enuresis, hostility, destructiveness, hyperkinesis, abnormal sexual practices, difficulties in school (both social and academic), a deprived familial environment, theft, lack of guilt, attacks of asthma, truancy, and sleeplessness. At which psychosexual or chronological age level a specific symptom was more likely to occur and how to interpret the findings in terms of theoretical orientation, however varied among the studies.

In the realm of psychoanalytic theory, upon which most investigations were based, the firesetter was thought to

¹Irving Kaufman, Lora W. Heims, and David E. Reiser, "A Re-evaluation of the Psychodynamics of Firesetting," American Journal of Orthopsychiatry, XXXI (1961), pp. 123-136.

²Nolan D. C. Lewis and Helen Yarnell, Pathological Firesetting (Pyromania) (New York: Nervous & Mental Disease Monographs, 1951), pp. 282-287.

³Helen Yarnell, "Firesetting in Children," American Journal of Orthopsychiatry, X (1940), pp. 272-287.

be either on a phallic-urethral or oral psychosexual developmental level. Kaufman, Heims, and Reiser stated:

The developmental level which fire expresses...is primarily oral rather than phallic urethral. At this oral level of development, the libidinal and aggressive energies are relatively fused and undifferentiated... the anxiety associated with the passive dependent wishes of this oral stage is perceived in terms of dangerous disequilibrium and temperature sensations. The defensive patterns associated with these fears utilize primitive and diffuse motor kinesthetic activity (perhaps reminiscent of being rocked for comfort) expressed either as outwardly directed aggression or hyperactivity.⁴

In contrast Podolsky related:

Urethral sexuality is expressed during childhood in various fire and water games. However, fire represents not merely the enuretic complex (urinary incontinence). It is also a symbol of sexuality with adults.⁵

Grenstein similarly expounded:

Since Freud has shown that primitive man regards fire as analogous to the passion of love, then Freud's hypothesis that control of fire requires ability to control urethral impulses seems warranted.⁶

⁴Kaufman, Heims, and Reiser, op. cit., p. 129.

⁵Edward Podolsky (ed.), Encyclopedia of Aberrations (New York: Philosophical Library, 1953), pp. 473-474.

⁶Alexander Grenstein, "Stages in the Development of Control over Fire," International Journal of Psychoanalysis, XXXIII (1952), 419.

STATEMENT OF THE PROBLEM

The Problem

Children, specifically referred to an agency because of firesetting, were investigated in order to determine if there is a pattern of symptoms or psychological syndrome which can adequately discriminate firesetters from an equated clinic population of nonfiresetters.

Subproblem

The level of psychosexual development, as indicated by the presence of specific, manifested, behavioral characteristics,⁷ of both firesetters and nonfiresetters at each chronological, developmental level, preschool (five through seven), prepubertal (eight through eleven), and pubertal (twelve through sixteen), was evaluated in terms of phallic-urethral as contrasted to oral theoretical interpretations of firesetting.⁸

Hypotheses

1. Firesetters can be differentiated from a clinic population of nonfiresetters by the behavioral characteristics of impulsiveness, hyperactivity, enuresis, hostility, theft, destructiveness, hyperkinesis, and abnormal sexual

⁷The definitions of and justification for the use of the characteristics in the present study are contained in the subsection, Definition of Terms, pp. 6-8.

⁸See Hypothesis 2 on next page; also, Chapter II, section, Theoretical Interpretation of Firesetting, pp. 22-24.

practices.

2. The firesetter is believed⁹ to manifest behavior patterns which correspond with fixation at the early oral psychosexual stage of development. As a result, the emotional adjustment of the firesetter remains at a level which is too immature, being forced to utilize inefficient ego defense mechanisms, to cope with inner tensions. The nonfiresetter will, with these behavior characteristics absent, progress, emotionally, more in accord with Freud's psychosexual developmental sequence thereby yielding differences in emotional maturity, ego development, between firesetters and nonfiresetters at the various chronological, developmental levels.

3. As the chronological levels increase (physical maturity), there will be a greater difference between firesetters and nonfiresetters in regards to psychosexual growth or, operationally, the presence of the behavioral characteristics.

Significance of the Problem

The problem of firesetting has been and is a serious socially disruptive influence for two major reasons: (1) cost and amount of destruction involved, (2) psychological implication with respect to the firesetter and his environment. Cost can be viewed in terms of actual property damage, lives

⁹ See Chapter II, subsection, Oral Psychosexual Stage Interpretation of Firesetting, pp. 33-37.

lost, and disruption of daily living for those involved. Psychological implication involves behavioral maladjustment of the firesetter which can be due, in part, to a disruptive environment.

In a clinic setting, establishing a reliable pattern of characteristics of firesetters will be useful for classification, placement, and treatment purposes. Therapy could more accurately be oriented to the level of personality development in evidence. The effectiveness of therapy could subsequently be evaluated by the relative absence of previous, manifest characteristics. Indications of the presence of these characteristics (syndrome) could also alert clinic, school, and community authorities to potential danger and the need for a thorough psychological evaluation of the individual in question.

Definition of Terms

Pertinent literature, which is included in the next chapter, was examined in order to ascertain characteristics of firesetters as related to the problem, subproblem, and hypotheses of the present study. The behavioral symptoms of impulsiveness, hyperactivity, enuresis, hostility, theft, destructiveness, hyperkinesis, and abnormal sexual practices were selected for differentiation of firesetters and nonfiresetters because of their observed incidence and prevalence among firesetters in previous empirical and actuarial research and because of their significance in constructing and treating various theoretical postulations and assumptions

concerning the psychodynamics of the firesetter. Since the study was psychological in orientation, characteristics were selected which also were amenable to analysis by psychological investigation.

The applied definitions of these characteristics are relegated to the "labeling" as used by psychologists and psychiatrists in their case reports; it must be pointed out that the "clinical meaning" of symptoms varies among individuals and disciplines, depending upon an individual's frame of reference.¹⁰ The definitions, stated below, are standard and can be found in the glossaries of Abnormal Psychology textbooks, such as Coleman,¹¹ or in most dictionaries.¹²

Impulsiveness. Tending to act without thinking.

Hyperactivity. Increased activity (beyond the ordinary or norm).

Enuresis. Bed-wetting; involuntary discharge of urine.

Hostility. Emotional reaction or drive toward the destruction or damage of an object interpreted as a source of frustration or threat.

¹⁰ See Chapter III, section, Source of Data, pp. 39-40, for method of control of this variable.

¹¹ James C. Coleman, Abnormal Psychology and Modern Life (Third Edition; Chicago; Scott, Foresman, & Co., 1964).

¹² Webster's Collegiate Dictionary (Fifth Edition; Springfield: G & C Merriam, 1946).

Theft. Act of stealing; specif., the felonious taking and removing of personal property, with intent to deprive the rightful owner of it; larceny.

Destructiveness. Causing destruction; ruinous. Designed or tending to destroy.

Hyperkinesis. Excessive or exaggerated muscular activity.

Abnormal Sexual Practice. Pathological deviation from the norm or usual (sexual behavior); (sexual) behavior that is detrimental to the individual and for the group.

II. THE REVIEW OF RELATED LITERATURE

II. THE REVIEW OF THE RELATED LITERATURE

The review of the related literature will be separated into three sections. The first section will explore the determination of characteristics of firesetters from a medico-legal, psychological, and psychiatric perspective. This section will be subdivided into Medico-Legal History; Empirical Studies Determining Psychological Characteristics of Firesetters; Psychiatric Classification of Firesetters; and Summary.

The second section will deal with theoretical interpretation of firesetting. Studies utilizing a Freudian psychosexual interpretation of firesetting will be extensively reviewed in order to provide justification for the selection of terms which were used in and for the theoretical position of the present study.

The third section will discuss methodological inadequacies of the above studies in an attempt to provide an explanation for the numerous controversies and misconceptions which abound in the psychological evaluation of firesetters. The forthcoming criticisms are not intended to devalue previous research but are an attempt to determine the most appropriate methods of investigating the problem of firesetting. By this undertaking, the methods of research which were used in the present study were selected.

Medico-Legal, Psychological, and Psychiatric Classification
and Characteristics of Firesetters

Medico-Legal History.¹ The early definition and classification of firesetters brought forth the question of responsibility of actions. Because the characterological symptoms which were attributed to firesetters implied insanity, a fire-setter could not legally be held responsible for his actions. Controversy arose concerning the establishment of a lack of motive as the sole criteria for judging insanity and concerning the justification for promoting pyromania as a clinical, psychological entity. The majority of pre-twentieth century literature was devoted to clarification of the terms, insanity and motivation, as they pertain to the firesetter.

M. Marc,² in 1833, was the first to classify firesetters as "monomaniacs." The term, 'monomania,' previously was introduced by Esquirol, a disciple of Pinel, who was associated with the French humanitarian movement. Being interested in classification and treatment of the insane, Esquirol described 'monomania' as a "partial lesion of the intelligence, emotions, or will, limited to a single object." 'Instinctive monomania,' which he introduced as a corollary concept, was characterized by "the expression of an involun-

¹Much of the following research in this section was translated from presently unavailable German texts and periodicals in Lewis and Yarnell, op. cit., pp. 3-27.

²M. Marc in Ibid., p. 9.

tary irresistible impulse." Using these concepts as a basis, Marc stated that all acts of firesetting, including those with apparent motives, indicated the presence of monomania and therefore the perpetrator was legally insane.

German psychiatrists, such as Platner, Henke, Meckel, and Jessen, during this same period, agreed that firesetting was a distinct mental disorder in which "the intelligence remained unaffected, but the feelings and conduct become disoriented." Henke³ stated that there were seven variables which were necessary for the detection of firesetters: (1) pubertal age equivalence, (2) irregular development, (3) disturbance in sexual organ functioning, (4) symptoms of circulatory distress, (5) nervous disorders, such as trembling, spasms, and convulsions, (6) sleep disturbances, and (7) mood fluctuations.

Kraft-Ebing⁴ observed that many firesetters were abused servant girls who were depressed, fearful, and suffered from pubertal disorders. He also stated that these girls had illusions and compulsive ideas which were characteristic of "childish, vain, dangerous, undisciplined individuals." Similarly Ray, in 1871, concluded:

...in the largest class of all, it [firesetting] occurs at the age of puberty and seems to^{be} felt chiefly by the nervous system which experiences almost every form of irritation, varying in severity from the slightest hysteric symptoms to tetanus, St. Vitus's Dance and epilepsy. When we bear in mind that general mania is

³Henke in Ibid., p. 12.

⁴Kraft-Ebing in Ibid., p. 12.

sometimes produced by the great physiological change it cannot be deemed an extraordinary fact that partial mania or murder should be one of its effects.⁵

In contrast to the above authors who believed that the firesetter is a distinct clinical entity and is not responsible for his actions, Casper, in 1846, stated:

It is a superstition and should be taken out of legal psychiatry. If firesetting is present in an individual, there is a normal need to make the personality felt. Those without a motive do so because of vanity and obstinacy.⁶

He, therefore, suggested that "all cases with or without a motive" be punished as criminals, unless clear evidence of mental disorder could be shown. Masius,⁷ in 1821, believed that all firesetters had a criminal motive except idiots and melancholics. Flemming, in 1830, reported:

...firesetting resulted from such normal motives as hatred and revenge or that it was merely the accidental outcome of a morbid condition in which case insanity would not be questioned.⁸

Montyel, in 1885, offered a compromise solution to the conflict over the motivational and definitional status of the firesetter. He proposed that the firesetter be judged on a continuum from sane to insane, depending upon the symptoms in evidence. Montyel considered

⁵Ray in Ibid., p. 12.

⁶Casper in Ibid., p. 10.

⁷Masius in Ibid., p. 10

⁸Flemming in Ibid., p. 10.

(1) the unconscious act of the idiot or dement; (2) the thoughtless act of the maniac; (3) the passive act of one hallucinated; (4) an act of logic with systematized delusions; (5) the perverse act of moral insanity; (6) the exuberant act of an emotional person⁹

to be non pathological in a legal sense. For Montyel, true pathological firesetting was 'a symptom of a degenerated psyche.'

Baker, in 1892, questioned whether the firesetter can be classified as an entity apart from inclusion of the phenomenon within a more general framework of mental disease:

No doubt is cast upon its existence, but a decided difference of opinion is expressed as to whether it exists alone without other symptoms of insanity...Pyromania... does not appear to be a form of mental disorder per se, but rather the outcome of primary moral insanity.¹⁰

He went on to describe the typical firesetter as epileptic and weak-minded, showing inferior cranial development, an inhibited moral feeling, and "an unscrupulous perseverance towards the gratification of their animal instincts." From these observations, Baker concluded that a firesetter is best characterized by: (1) youthfulness, (2) rural habitat, (3) abnormal development, (4) defective intelligence, (5) familial insanity or epilepsy, (6) disturbance of character, habit, and "feeling traits", (7) non-delusional orientation, (8) non-motivational crimes but possession of irresistible impulses to burn. He clarified his last characteristic:

⁹Montyel in Ibid., p. 10.

¹⁰Baker in Ibid., pp. 12-13.

When a motive exists with absence of mental derangement, the act should be regarded as criminal. The presence of mental aberration will indicate that the patient is suffering from the insanity of pubescence...and is therefore irresponsible.¹¹

Kanner¹² summarized the previous literature concerning the classification of firesetting. He reported that pyromania was first considered moral insanity and consisted of a selective "ethical deficit," meaning a loss of conscience with otherwise normal development. Kanner quoted Grokmann's 1819 'ethical degeneration' and Prichard's 1835 'morbid perversion of the feelings, affections, and active powers' as representative of the early medical position toward the psychological dynamics and classification of fire-setters.

Empirical Studies Determining Psychological Characteristics of Firesetters. The results of a recent pilot study,¹³ in 1967, suggested that firesetters can be distinguished from nonfiresetters in three age groupings, under seven, eight through eleven, and twelve through sixteen.

In the under seven age group, impulsiveness, hyperactivity, theft, and lack of guilt significantly ($p < .05$) distinguished firesetters from nonfiresetters while in the

¹¹Ibid.

¹²Leo Kanner, Child Psychiatry (Springfield: Charles C. Thomas, 1957), p. 676.

¹³Ira A. Smith, "Characteristics of Firesetters," an unpublished paper submitted to Mental Hygiene Services, Dept. Soc. Welfare, State of R. I. in partial fulfillment of requirements for a clinical internship in the Dept. of Psychology, University of Rhode Island.

eight through eleven group, hyperkinesis, lack of guilt, asthma, and truancy differentiated ($p < .05$) firesetters from nonfiresetters. Firesetters and nonfiresetters in the twelve through sixteen age group were distinguished ($p < .05$) by theft, hostility, truancy, and destructiveness.

Yarnell,¹⁴ in 1940, reviewed case histories from the Psychiatric Division of Bellevue Hospital of sixty fire-setting adolescents and children of normal to dull normal I. Q. The sixty cases were divided into two age groups, six through eight and eleven through fifteen. Findings suggested that the younger group was characterized by special educational disability, example reading, deprivation of love and security in home life, hyperkinesis, destructiveness, stealing, truancy, and running away from home. Summarizing her conclusions:

In our studies, we note that these children show the following characteristics:

1. They set fires, with associated fantasies to burn some member of the family who has either withheld love from the child or become too serious a rival for the love of the parents.

2. The fires are made in or around their own home, cause little damage and are usually put out by the child himself; significance is chiefly symbolic.

3. The children show other types of asocial behavior such as running away from home, truancy, stealing and general hyperkinesis and aggression.

4. Frequently, associated are learning disabilities or physical handicaps which further hamper the child in its social adjustment.

5. All children show acute anxiety and suffer from

¹⁴Yarnell, loc. cit.

terrifying dreams and fantasies, including vivid attacks by the devil, ghosts and skeletons.

6. All children have some sexual conflicts and many tell of active masturbation, sodomy, or fellatio; type of activity does not seem significant.

7. Eneresis was noted in only 9 cases and seemed part of the general picture rather than specifically associated with the fire motif. All of the boys with strong passive components suffered with enuresis.

8. A special group of children were orphans who had been placed in boarding homes but failed to make an emotional adjustment.

9. Though our study is incomplete on the adolescent group, we find quite different mechanisms and reactions in this group, namely, they tend to go in pairs with an active and passive member, and set fires for excitement. Expressions of guilt or a rich fantasy life have not been obtained.¹⁵

The adolescent group was found to lack guilt over their actions, express little anxiety, possess aggressive tendencies, have delinquent orientations, and be sexually maladjusted.

Lewis and Yarnell,¹⁶ in 1951, investigated the case histories of 238 juveniles who were under the age of sixteen. The records were obtained from the National Board of Fire Underwriters. In compiling their data they found that defective intelligence is not an important factor in any of the juvenile age periods and that borderline intelligence is not a factor until the ages of ten and eleven when "this type of child begins revenge fires against the school." The authors determined the pre-adolescent, eight through twelve years,

¹⁵ Ibid., p. 286.

¹⁶ Lewis and Yarnell, op. cit., pp. 27-46.

firesetters by the incidence and prevalence of symptoms in evidence. In general, this group of firesetters set fires at a time when feelings of guilt over sexual preoccupation was indicated. The majority of firesetters came from broken homes, manifested sexual delinquency (after the age of nine), were truant, frequently ran away, and committed theft. Enuresis, epilepsy, and encephalitis were found in very few cases. The incidence and prevalence of the above symptoms, especially stealing and sexual delinquency, increased as the data from the adolescent group, thirteen through sixteen years, was compiled.

Kaufman, Heims, and Reiser,¹⁷ in 1961, investigated psychological variables which are related to firesetting by the evaluation of case histories of thirty, late latency or early adolescent, boys which were obtained either from a child guidance clinic, a residential treatment center, or a children's unit of a state hospital. The research material included, if possible, social service interviews with the parents, psychiatric interviews, a standard psychological (Rorschach, Stanford-Binet, Wechsler, Draw-a-Person Test) battery and a specially designed series of psychological tests (Heims puppet test, Kaufman drawing response test, three wishes, first memory), observations by staff members, and reports from schools. The boys were classified in terms of age,

¹⁷Kaufman, Heims, and Reiser, loc. cit.

final clinical diagnosis, other delinquencies, enuresis, somatic symptoms, rage reactions, and school and social adjustment. The findings suggested that firesetters had a high prevalence of enuresis, difficulty in school and social adjustment, evidence of severe rage reactions, indications of chronic hyperactivity, difficulty in controlling instinctual drives, assaultive tendencies, and traumatic home experiences.

Psychiatric Classification of Firesetters. The American Psychiatric Association's Diagnostic and Statistical Manual-Mental Disorders with Special Supplement on Plans for Revision¹⁸ has classified the firesetter as "Obsessive Compulsive Reaction (40.4, 00-x05, 313); supplementary manifestations, Pyromania: setting fires (056)."

In present practice the firesetter is frequently diagnosed on a continuum from an obsessional-compulsive neurosis, to psychopathic personality, to a psychotic disturbance depending upon the symptoms which are manifest. The majority of firesetters have been classified¹⁹ as suffering from some form of psychopathic personality or character disorder with or without psychosis "depending upon the de-

¹⁸ Diagnostic and Statistical Manual, Mental Disorders, with Special Supplement on Plans for Revision, Special Printing, (Washington: American Psychiatric Association, Nov. 1965), p. 85, p. 121.

¹⁹ Louis P. Thorpe, Barney Katz, and Robert T. Lewis, The Psychology of Abnormal Behavior (New York: Ronald Press, 1961); Coleman, loc. cit.

gree of bizarre mental formulations elicited at the time of the examination."²⁰

Bleuler ²¹ classified firesetting as an impulsive disorder and agreed, for the most part, with the medico-legal model that only partial, predominantly affective, disruption of the personality is in evidence. He believed that various forms of fugues, neurasthenia, or compulsiveness may result from disordered logical and associational thinking which accompanies an unusual display of affect.

Lewis and Yarnell²² suggested that the repetitive aspects of firesetting indicate neurotic symptoms of an obsessive-compulsive variety and that the incendiary acts are a defense against "more feared and taboo acts." They, however, posed the question of whether the firesetter is neurotic or schizophrenic:

Where to draw the line between a severe and complicated psychoneurotic disturbance and early schizophrenia is always difficult. The same difficulty presents itself when the diagnosis for these so-called pyromaniacs is considered, and it is doubtful whether an exact differentiation can be made, except in the extreme instances. To some degree, all of these offenders manifest schizophrenic thinking. It requires a schizophrenic type of condensation and symbolization to utilize fire-

²⁰ Lewis and Yarnell, op. cit., p. 426.

²¹ Eugen Bleuler, Textbook of Psychiatry (New York: Macmillan, 1924), p. 528.

²² Lewis and Yarnell, op. cit., p. 426.

setting in the ritualistic fashion of theirs. They are cruel, greedy, and grandiose in their fantasies, while they feel that their real self is hopelessly weak and defenseless and they are unable to integrate these conflicting evaluations...In many instances there seems to be more than just a hysterical type of splitting in the personality, where the 'good' and 'bad' personalities function as alternate egos; rather it seems that the 'bad' personality becomes permeated throughout the 'good' with generalized impulsivity as a result.²³

Summary. The question of whether the firesetter is a clinical entity which can be identified by certain observable, psychological and environmental, behavioral characteristics has not been answered. French and German authors, such as Marc²⁴ and Henke,²⁵ were largely responsible for the establishment of insanity in court trials involving fire-setting. While the German law was repealed in 1851, the French law, declaring the firesetter as insane, has remained in force, stimulating voluminous literature until the 1920's.

Lombroso's²⁶ postulates of pathological heredity and moral degeneracy as the reasons for criminality instigated a continuation of the French views on firesetting. An Atavistic orientation and the concept of "criminal insane" led Lombroso to conclude that firesetting was the act of a mentally disordered individual who was either epileptic or a "born criminal" suffering from a psychotic process.

²³Ibid.; ²⁴M. Marc in Ibid.; ²⁵Henke in Ibid.

²⁶Cesare Lombroso, Crime, Its Causes and Remedies (Boston: Little, 1911).

Despite the failure to clearly psychologically classify the firesetter, attempts, Yarnell,²⁷ Kaufman et. al.,²⁸ and Lewis et. al.,²⁹ to determine characteristics of firesetters have continued. These more recent investigations, though, focussed upon the problem of relating psychological symptoms to theoretical constructs concerning the underlying psychic dynamics which are manifest in and the reasons for firesetting.

The results of these studies met a fate similar to those involving the medico-legal question of responsibility of individual actions. While Yarnell and Lewis et. al. did not find enuresis to be prevalent among firesetters, Kaufman reported the opposite. Smith³⁰ found that lack of guilt characterized firesetters up to the age of twelve but not older groups. In contrast, Lewis et. al. and Yarnell concluded that all levels of firesetters suffered from a lack of guilt.

In general, the four studies, Yarnell, Kaufman, Heims, and Reiser, Smith, and Lewis and Yarnell did report similar characteristics of firesetters from different populations but did not agree upon the age levels at which these

²⁷Yarnell, op. cit., pp. 272-287.

²⁸Kaufman, Heims, and Reiser, op. cit., pp. 123-136.

²⁹Lewis and Yarnell, op. cit., pp. 27-46

³⁰Smith, loc. cit.

symptoms occurred. Investigations of individual cases of firesetting, Goldwyn,³¹ in 1929, Karpman,³² in 1955, Siegel,³³ in 1957, and Warner,³⁴ in 1932, have contributed to the confusion over this issue.

As a result of the controversy concerning the relationship between observed symptoms which are associated with firesetting and personality dynamics, the formal, psychiatric classification of firesetters, as prescribed by the American Psychiatric Association, has not been applicable in clinical practice. Lewis and Yarnell stated:

Different examiners classified what appeared to be the same type of mental disturbance as schizophrenia, hysteria, compulsive neurosis, or psychopathic state with alcoholism. In the final analysis, the representative firesetter, who would formerly have been diagnosed as "pyromaniacs," does present a complicated personality structure which combines a mixture of the above trends, with possibly one trend being predominant, and is not adequately described by a single diagnosis.³⁵

Theoretical Interpretation of Firesetting

Formulation of theoretical hypotheses concerning the

³¹J. Goldwyn, "Impulses to Incendiarism and Theft, A Case Report," American Journal of Psychiatry, IX (1929), pp. 1093-1099.

³²Ben Karpman, "Dream Life in a Case of Pyromania," Psychoanalytic Review, XXXXII (1955), pp. 44-46.

³³Leonard Siegel, "Case Study of a Thirteen Year-Old Firesetter: A Catalyst in the Growing Pains of a Residential Treatment Clinic", American Journal of Orthopsychiatry, XXVII (1957), pp. 396-410.

³⁴G. L. Warner, "A Few Representative Cases of Pyromania," Psychiatric Quarterly, VI (1932), pp. 675-690.

³⁵Lewis and Yarnell, op., cit., pp. 423.

underlying psychodynamics of firesetting necessitate the coordination of known behavioral symptoms, which firesetters manifest, into a logical coherent construct. The resultant construct must then be integrated into a theory of personality which seems best suited to meaningfully interpret the collected data. Hall and Lindzey³⁶ related, "Personality is defined by the particular empirical concepts which are a part of the theory of personality employed by the observer."

This section will be divided into three subsections: General Interpretations; Freudian Phallic-Urethral Psychosexual Stage Interpretations; and Freudian Oral Psychosexual Stage Interpretations of Firesetting. The characteristics of firesetters which were reported in the previous section, Empirical Studies Determining Psychological Characteristics of Firesetters, will serve as the empirical definition upon which the theoretical assumptions relating to the psychodynamics of firesetting are based. Brown and Chiselli stated:

A hypothesis is not valid until there has been an opportunity to test the theorems [assumptions] against facts. It retains the characteristics of a guess until factual support is forthcoming.³⁷

Similarly, Hall and Lindzey explained the function of em-

³⁶ Calvin S. Hall and Gardner Lindzey, Theories of Personality (New York: John Wiley, 1957), p. 9.

³⁷ Clarence W. Brown and Edwin E. Chiselli, Scientific Method in Psychology (New York: McGraw-Hill, 1955), p. 67.

pirical definitions:

The empirical definitions...permit the...interaction of certain terms or concepts within the theory with empirical data. Thus, by means of these definitions the theory at certain prescribed places comes into contact with...observed data.³⁸

General Interpretations of Firesetting. Wulffen, in 1910, found:

...pyromania [is] present in children as a result of a sadistic motive, and a reaction to the attraction of light and warmth as erotic symbols. He pointed out they sing, and dance and receive a pleasant sensation from fires with a desire to repeat the experience. It is more often found in puberty associated with vague sexual impulses. Sadistic impulses are satisfied in destroying property. Of all criminals the firesetter has the least idea why he commits the act.³⁹

Gross⁴⁰ believed that there is an explosive release of tensions which can result either in impulsive firesetting or murder. He, therefore, concluded that individuals of this type require "motor-type" release of unbearable tensions.

Similarly, Reiss asserted that the firesetter:

...is unable to rid himself of the emotion that leads to tension, which is apt to unload in dangerous ways. The firesetter lacks personal courage, so firesetting is a happy discovery for him. 'Where every motive seems lacking we find an analogy to the sexual perversions.'

³⁸ Hall and Lindzey, op. cit., p. 12.

³⁹ Wulffen in Lewis and Yarnell, op. cit., p. 16.

⁴⁰ Hans Gross, Kriminal-Psychologie (Leipzig, 1905), Translated by Horace M. Kallen under the title, Criminal Psychology (Boston: Little, 1911).

There is always a connection with the instinctual life. ⁴¹

Többen⁴² found that alcoholic intoxication produced either a euphoric or a depressed mood in which latent longing desires to set fires are released and made conscious. These incidents are brought about by an increase in self esteem and courage with a consequent lowering of superego inhibiting mechanisms. Többen further suggested that youths should be vigorously taught moral ethics in order to insure against future generations of alcoholics.

Mönkemöller⁴³ hypothesized that firesetting enables a person to directly attack others by means of subterfuge. The act of firesetting is an attempt to gain recognition and is associated with delusions of grandeur which psychotics manifest. These acts occur most frequently at the end of childhood when a desire for self-esteem through hostility and sexual deeds is most urgent. Mönkemöller also noted that the epileptic experiences great stress, accompanied by a hostile, aggressive, and destructive attitude toward life; these feelings usually culminate in firesetting episodes.

Mönkemöller concluded that "all firesetters seek refuge in insanity." Firesetting was not observed with in-

⁴¹Reiss in Lewis and Yarnell, op. cit., p. 13.

⁴²Többen in Ibid.

⁴³X. Mönkemöller, "Zur Psychopathologie des Brandstifters," Hans Gross Archiv für Kriminal-Anthropologie und Kriminalistik, XLVIII (1912), pp. 193-312.

dividuals in manic excitement, but was prevalent among melancholics and depressives where infantile emotions emerge.

Steckel⁴⁴ emphasized a "sexual root" as the major underlying reason for firesetting. The "sexual root" is directed revenge against members of the immediate family. He noted that although it is common for children to play fireman and be interested in fire, this interest in fire is a sublimated need and, consequently, helps form the "life style" of the individual. As a result, Steckel concluded that impulsive firesetting represents an infantile regression; in this manner, children gain mastery over adults. His examples of case studies cite enuresis as a basis for the interest of children to become firemen and depict unresolved oedipus complexes as the "sexual root" in situations of familial disruption. Other "sexual roots" were associated with chronic masturbators who either masturbated during burning with destructive fantasies, used fires as a substitute for acts of masturbation, or used the fire as a means of inhibiting the habit of masturbation.

Aschaffenburg⁴⁵ concluded that epilepsy, arson, mysticism, cruelty, and sexual excitement are correlated in

⁴⁴Wilhelm Steckel, (Pyromania) Peculiarities of Behavior, (Boni-Liverwright, 1924) vol. 2, library edition, 1943.

⁴⁵Gustav Aschaffenburg, Crime and its Repression (Boston: Little, 1913).

some psychodynamic manner but did not elaborate further.

Bychowski, however, found similarities between schizophrenic motivation and firesetting in regards to "a discrepancy between real and psychic imagination."

All have this drive for liberation and they use fire in an effort to solve an apparently insoluble situation; the autistic imagination comes forward and seeks a motive in the depths of the unconscious.⁴⁶

Schmid,⁴⁷ approached the problem of firesetters from a Jungian theoretical framework. From his observations, he concluded, first of all, that epilepsy, was not as prevalent among firesetters as was originally thought. Enuresis and the impulsive nature of the act of firesetting, because of the large unexplained incidence among the firesetting population, needed further study before adequate psychodynamic interpretation could be attempted.

Schmid believed that revenge was a causative factor, thereby accounting for the hostility and destruction accompanying the firesetting. He hypothesized, in a Freudian framework, an unconscious drive for fire and lust as the motivating force behind the act of firesetting. In normal development, this drive is sublimated, as are sexual desires, in the interest of society or psychically, the superego or "critical agency."

⁴⁶Bychowski in Lewis and Yarnell, op. cit., p. 19.

⁴⁷Hans Schmid, "Zur Psychologie der Brandstifter," Psychologische Abhandlungen, Bd. I. (1914), pp. 80-179.

Lack of satisfaction of the desire for fire and lust, interpreted in Jungian terms, would cause a backload of libidinal energy which would be forced into previously used outlets. If held in unfavorable channels for long periods of time, somatic symptoms, including infantile irritability, and general tension states may become manifest. Alcohol facilitates dissipation of disruptive libidinal energy by causing "psychological regression to more infantile positions."

Also, in accord with both Freudian and Jungian theory, Schmid interpreted fire as being symbolic of religious dreams and delusions. He noted that primitive man used fire as a mystical, sexual symbol. He cited Freud's⁴⁸ assumption that these primitive symbols were signs of instinctual id impulses, whereas Jung related them to unconscious archaic images. Schmid went on to state that these images may come into focus if aggressive, symbolic acts, firesetting, are the result of "damned up" libidinal energy being released in primitive channels.

Arieti⁴⁹ agreed that the firesetter suffers a "deficit within the superego." Karpman⁵⁰ suggested, along with Schmid,

⁴⁸ See Chapt. II, subsection, Oral Psychosexual Stage Interpretations of Firesetting, pp.33-37, for Freudian interpretation of the Greek Promethean fire myth.

⁴⁹ Silvano Arieti (ed.), American Handbook of Psychiatry I (New York: Basic Books, 1959).

⁵⁰ Ben Karpman, "A Case of Fulminating Pyromania," Journal of Nervous and Mental Disease, CXIX (1959), pp. 205-232.

that frustration due to a lack of attainment of a love object can redirect libidinal energy into the primitive manifestations of hostile, destructive deeds which are counterparts of archaic symbols of love. Karpman⁵¹ substantiated these views by reporting that firesetters frequently tend to report dreams of magic.

Rothstein⁵² analyzed the Rorschach Inkblot Test of eight pre-adolescent boys and concluded that these boys were "characterized by a minimal capacity for delay, fluid boundaries of self, and a fluctuating hold on reality" or had a "sudden breakdown of compulsive and expressive defense allowing for an acting out." He felt that firesetting represented "the projection of inner tensions to outside forces and the attempted incorporation of the vitality of fire to overcome feelings of inner emptiness."

Schachtel also investigated Rorschach responses of firesetters and noted that obsessive-compulsive signs were not in evidence.

[Firesetters]...are generally labile, impulsive, uninhibited, whereas in some others there is a pronounced dichotomy between a sphere of adaptive efforts, attempts to meet the demands made on them, submission to authority, and the sudden abandon of these efforts in an immersion into their affects...These 'immersions' into an affect seem to discharge destructive impulses

⁵¹Ben Karpman, "Dream Life in a Case of Pyromania," Psychoanalytic Review, XXXXII (1955), pp. 44-46.

⁵²Ralph Rothstein, "Exploration of Ego Structures of Firesetting Children", Archives of General Psychiatry, IX (1963), pp. 246-253.

as well as to satisfy grandiose ideas.⁵³

Warner⁵⁴ stated that the impulse to set fires occurs in distressing situations which are related to sexual cravings or affairs; in this manner an association between fire and passion is indicated.

Lewis and Yarnell summarized previous research and opinions concerning the psychodynamics of firesetting. They concluded that a variety of reasons and emotional states can be expressed symbolically in the act of firesetting. In general, though:

They [firesetters]...had allowed themselves to be pressured into a state of tension and hopeless despair by an accumulation of unhappy events, some of which might be fortuitous, and some the result of their own characteristic behavior...it almost seemed that just prior to the firesetting, there was a fear that if something drastic did not happen, their whole personality was going to explode and disintegrate...the firesetting usually came at a time of transition, when their feelings about themselves and about their external world were unclear. In such transitional periods, the usual defenses are weakened so that impulses, perhaps repressed...can come to the 'surface' and even force action.⁵⁵

Phallic-Urethral Psychosexual Stage Interpretations of Firesetting. Freud^{56,57} believed that the symbolic,

⁵³E. G. Schachtel, "Some Notes on Firesetters and Their Rorschach Tests," Journal of Criminal Psychopathology, V (1943), p. 347.

⁵⁴Warner, loc. cit.; ⁵⁵Lewis and Yarnell, op. cit., p. 397.

⁵⁶Sigmund Freud, "The Acquisition of Fire," Psychoanalytic Quarterly, I (1931), pp. 210-215.

⁵⁷Sigmund Freud, "The Acquisition of Power Over Fire,"

philosophical meaning of fire gives rise to a phallic-urethral, psychoanalytical interpretation of the "clinical" act of firesetting. The Greek Promethean fire myth involved the theft of fire in a hollow stalk from Zeus in order to enhance the culture of man. Psychoanalytical interpretation involves a reversal in man since he has the means of extinguishing fire by the penis. A homosexual desire to quench fire with urine must be overcome in order to control instinctive urges. The acquisition of fire was considered a crime in Greek myths and consequently power over fire by man indicates control or theft from the god or the id since fire is not extinguished by urine. The renunciation of instinctive desires bring feelings of hostile and aggressive impulses which in a later phase of psychic development turn into a sense of guilt. Freud concluded:

It is as if primitive man had had the impulse when he came into contact with fire, to gratify an infantile pleasure in respect of it and put it out with a stream of urine...Putting out fire by urinating...therefore represents a sexual act with a man, an enjoyment of masculine potency in homosexual rivalry. Whoever was the first to deny himself this pleasure and spare the fire was able to take it with him and break it in to his own service. By curbing the fire of his own sexual passion he was able to take fire as a force of nature...It is remarkable how regular analytic findings testify to the close connection between ideas of ambition, fire and urethral eroticism.⁵⁸

International Journal of Psychoanalysis, XIII (1932), pp. 405-410.

⁵⁸
Ibid., pp. 409-410.

Fenichel concurred with Freud, concluding that vindictive impulses are formed into "urethral fixation."

The defensive purpose of the pathological impulses does not exclude the possibility that they simultaneously bring a distorted instinctual satisfaction of a sexual or aggressive nature. The way in which the striving for security and the striving for instinctual gratification are condensed with each other in what characterizes the irresistible impulses...a characteristic irresistibility, which is different from that of normal instinctual drive and which is caused by the condensation of instinctual urge and defensive striving.⁵⁹

Similarly, Grenstein related that Freud's hypothesis, concerning control of fires, necessitates control of urethral impulses and subsequently relates to a primitive passion of love. He stated:

...the act is a direct expression of aggressive hostile impulses as well as libidinal ones. What is frequently involved and what brings such people to authorities is that their control of the fire once it was started, was not sufficiently adequate to cope with it. The ego of the fire-setter is not capable of dealing adequately with the reality situation...brought about by the discharge of his aggressive impulses in the act of fire-setting.⁶⁰

The above hypotheses and assumptions in this subsection describe instinctual problems concentrated on a phallic, psychosexual level of development. Disturbances of this sort imply personality functioning in a third order or advanced stage of psychic growth. The above stated post-

⁵⁹ Otto Fenichel, The Psychoanalytic Theory of Neurosis (New York: W. W. Norton, 1945), p. 367.

⁶⁰ Grenstein, op. cit., p. 418.

ulates, therefore, relate to psychoneurotic problems, such as obsessive-compulsive, hysteric, or phobic states. Sadler⁶¹ stated, "most firesetters are compulsive neurotics and have a habit of petty crime." Various researchers⁶² have taken the position which Lewis et. al. has succinctly summarized:

...[firesetters] fear the potential strength of their emotions and doubt their power to control them if they allow them free expression so a total inhibition is attempted. To maintain such inhibition is of course difficult and protective rituals are developed as further defenses.⁶³

Yarnell concluded from studying the fantasy material of firesetters that a mixture of aggression, destructiveness, anxiety, and self punishment is present. Interpreted psychoanalytically, Yarnell believed that these symptoms:

...[have] made it impossible for the child to adequately resolve his oedipus situation so that he carries over his sadistic impulses with their accompanying anxiety...Children who set fires have suffered even more severely than the average neurotic child and find it necessary to use the magical power of fire to assist themselves. Often when first admitted to the hospital they are in such a severe anxiety state that they might be called psychotic. It is during this period that they discuss their hatreds and aggressive fantasies...⁶⁴

Oral Psychosexual Stage Interpretations of Firesetting.

⁶¹William Sadler, Mental Mischief and Emotional Conflicts (St. Louis: C. V. Mosby, 1947), p. 330.

⁶²Tobben; Arieti; Schmid; Rothstein, op. cit.; also see Chapt. II, subsection, Psychiatric Classification of Firesetters, pp. 18-20.

⁶³Lewis and Yarnell, op. cit., p. 399.

⁶⁴Yarnell, op. cit., p. 283.

Yarnell, in the preceding subsection, while characterizing the firesetter on a phallic-urethral level, still found that psychotic or similar processes are manifest in the firesetter. Smith⁶⁵ concluded that since enuresis and abnormal sexual practices are believed to be evidence of disturbance on the more advanced phallic-urethral level of development and the significant distinguishing characteristics between fire-setters and nonfiresetters, found in his study, are believed to be related to the oral psychosexual development level, the firesetter functions on a very immature emotional level, indicating primitive ego development.

Spitz,⁶⁶ believed that the behavior patterns which characterize firesetters are related to infantile homeostatic coping mechanisms. Sensations of thirst, touch, temperature, hunger, etcetera give rise to tension states which must be alleviated if maturational progression is to be attained. Spitz reported that these same states can occur in children and adults when extreme pressure, anxiety, or stress produces psychic regression.

⁶⁵Smith, op. cit.

⁶⁶René A. Spitz, "The Primal Cavity: A Contribution to the Genesis of Perception and Its Role for Psychoanalytic Theory," The Psychoanalytic Study of the Child, X (1955), pp. 215-240.

Other authors⁶⁷ have insinuated that infantile regression with accompanying disequilibrium in sensations occurs among firesetters. Lewis and Yarnell stated:

Children believe in animism, i.e. they feel an 'aliveness' with the elemental forces, endow inanimate objects with a living soul and believe that through magic thinking they can communicate with and control such forces. They derive pleasure from watching the display of elemental phenomena such as rain, wind, or fire. In their earliest attempts to acquire knowledge they pass through an investigative period in which they experiment with water, dirt, patterns of motor activity, destruction and reassembling; all these directed toward testing their own power and to determine how they may derive satisfaction from the natural forces and learn to control them...Fire does indeed appear as a wonderful magic force to a small child, for it shows color, warmth, motion, appears from nowhere, is able to expand with amazing rapidity, and can still be extinguished by a breath.⁶⁸

Kaufman, Heims, and Reiser⁶⁹ postulated that the ego defenses and level of instinctual development of the fire-setter are not on as advanced a level of personality development as the phallic-urethral which is within the "realm of the neurosis;" rather ego defenses and instinctual level were on the primary oral psychosexual level which is within the character disorder-psychotic range of disturbance. Of the thirty boys in the study, eight were diagnosed as "primary conduct disorders," eleven borderline psychotic, and eleven

⁶⁷Wulffen; Mönkemöller; Steckel; Bychowski; to some extent, Schmid, loc. cit.

⁶⁸Lewis and Yarnell, op. cit., p. 283.

⁶⁹Kaufman, Heims, and Reiser, op. cit., pp. 123-136.

psychotic.

Kaufman et. al. related their psychodynamic constructs to three psychoanalytic areas of investigation: (1) level of instinctual development, (2) ego mechanisms, (3) object relationships. They found that "firesetters demonstrated anxiety related to their preoccupation with...sensations of the oral stage." They further stated:

They [firesetters] are unusually hyperactive. In interview and testing material the predominant themes revolve around bodily sensations of warmth and coldness, thirst and wetness, dryness or loss of balance. Their sensory percepts are fused with their description of the environment in terms of bodily sensations.⁷⁰

In terms of ego mechanisms, Kaufman et. al. reported that firesetters fear being destroyed by their inner stresses.

Initially, they attempt to cope with...fantasied danger by denial and flight. They may subsequently endeavor to deal with the destructive force of their anxiety by externalizing it when they set the fire which destroys. Thus they transform the experience of being helpless in the face of overwhelming danger to one of attempt at active mastery. The ego not only utilizes the above defenses of denial, flight, and transformation of passive to active position, but also uses the mechanism of identification with the aggressor.⁷¹

They subsequently related these dynamics to external object relations:

These children express the concept that they are in great danger of being destroyed by their inner tensions. They indicate that they have been deserted, and feel unable to cope with the potentially overwhelming force

⁷⁰Ibid., p. 129.

⁷¹Ibid., p. 132.

of their instinctual drives. They frequently express this tension in terms of burning up. The concepts about fire represent the condensation of these component parts: i.e., the dangers associated with the inner tensions arising from their unmet needs; externalization of the destructive force of these tensions which transforms this danger from one passively experienced to one actively mastered; and the wish for restitution of the lost parent who will meet these needs.⁷²

Firesetters feel that they have been deserted, an aggressive act against themselves, therefore they attempt by fire to reunite the separated familial ties and identify with the aggressor in a passive manner.

Critical Discussion of Previous Literature. To reiterate and elaborate upon previous statements,⁷³ the above cited studies and theoretical formulations in this chapter did, for the most part, adequately discuss and determine behavioral characteristics of firesetters but failed to coordinate the various findings into a meaningful, valid, reliable, dynamic, "clinical" description of a firesetter. Most studies did not allow for further investigation because their assumptions, constructs, and statements were ambiguous, unverified by empirical research, naturalistic in observation, or reported without specifying methodological procedures which were utilized in the analysis of the collected material.

The significance of these findings was also hindered by a failure to use control groups in order to determine if

⁷²Ibid., p. 135.

⁷³See Chapter I, pp. 1-3,

the behavioral symptoms which are characteristic of the fire-setter can also be attributed to other "normal" or clinic populations which do not set fires. Because there have not been firesetter and nonfiresetter comparisons, statistical analysis has not been applied beyond percentage of occurrence of symptoms among firesetters.

As a result of attempting to analyze the accumulated data relating to various aspects of the act of firesetting without an empirical, scientific, methodological framework, the theoretical issues, concerning firesetting as a clinical entity, the firesetter as legally sane, psychiatric classification of firesetters, and assumptions of the underlying psychodynamic functioning of firesetters, are still unresolved. Generalizations from the various studies give rise to questions because of the populations and number of subjects which were used. Selected samples, depending solely upon the availability of case records, for example from a guidance clinic in New York, or a single case, either seen in therapy or observed because of the sensationalism which the firesetting act produced, cannot validly and reliably be assumed to be characteristic of differing populations. As a consequence, many theoretical hypotheses have been generated from rather barren evidence.

III. RESEARCH PROCEDURE

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Source of Data

The source of the data was case referrals to both Mental Hygiene Services and Child Welfare Services, Department of Social Welfare, State of Rhode Island. These particular clinic populations afforded greater heterogeneity than other centers, such as community or regional treatment centers, in regards to types of referrals and to geographical selectiveness. At the same time, the professional staff which performed services at Child Welfare Services and Mental Hygiene Services were more homogeneous than at other agencies.

Because of the bureaucratic functioning and centralization of the mental health facilities in the Department of Social Welfare, the professional personnel, psychologists, psychiatrists, and social workers, have remained stable over a period of years; thereby providing an opportunity for greater correlation, coordination, and understanding of each other's functioning in a clinical setting. This multidiscipline approach to each diagnostic evaluation, which is provided at these centers, increased the reliability and validity of the present findings in terms of defining and reporting the incidence of the specific characteristics in evidence.

The research considered, where possible, social service reports, psychiatric interviews, psychological evaluations, court reports, and medical^C consultations. The criteria for inclusion of a specific case as data in the study

was a case history with at least: (1) a social service report, (2) a psychiatric diagnostic interview, (3) a psychological evaluation.

Method of Collecting Data

The experimental group, firesetters, was composed of referrals to an agency specifically for known firesetting. A control group, nonfiresetters, was used to evaluate the significance of difference between firesetters and nonfiresetters in regards to the presence of the behavioral characteristics, in question, at the various chronological, developmental age levels. Both samples, experimental and control, a total N of 128, were divided into three age groupings, five through seven, eight through eleven, twelve through sixteen, N of twenty-two, fifty, and fifty-six respectively, corresponding to pre-school, pre-pubertal, and pubertal developmental stages. A preliminary investigation by Smith,¹ in 1967, found that the differences in the data which were obtained from case histories in Mental Hygiene Services and Child Welfare Services populations for both control and experimental groups were not significant ($p > .05$); therefore the research material for control and experimental groups from both Child Welfare and Mental Hygiene Services populations were justifiably combined.

Equated grouping was utilized to control for sex,

¹Smith, loc. cit.

I. Q., socio-economic status, rural-urban residence, and race. The study was limited to Caucasian males from lower-middle to lower class urban environments. The sex and race statistics were compiled and directly reported in social service reports. Urban residence was determined by the Planning Division of the Rhode Island Development Council² while socio-economic status was compile from the U. S. Bureau of the Census.³ Lower-middle through lower class determinants were based upon familial income. Broom and Selanick stated:

The 'best' objective criteria are those which most accurately predict the greatest number of important correlates. Income and occupation in an industrial society are very good criteria because they determine so many other characteristics.⁴

Based upon the Census, families whose earnings were under \$4,000 were considered lower-middle to lower class.

Concerning urban residence, Goldstein and Mayer indicated:

Under the 1960 census definition, 36.4 percent of the state's population live in urban places...Although by census definition many areas of Rhode Island remain rural, the fact that the rural population is almost entirely non-

² Sidney Goldstein and Kurt B. Mayer, "The People of Rhode Island, 1960," Planning Division, Rhode Island Development Council, State Planning Section, publication no. 8, October, 1963, p. 2.

³ United States Bureau of the Census, U. S. Census of Population: 1960. General Social and Economic Characteristics, United States Summary. Final Report pc (1)-1c. (Washington: Government Printing Office, 1962), pp. XXXVIII-XXXIX.

⁴ Leonard Broom and Philip Selznick, Sociology (third edition; New York: Harper & Row, 1963), p. 197.

farm indicates that Rhode Island is in effect a city state in which both the large central cities and the smaller satellite cities merge into their surrounding suburbs, and the suburbs themselves become increasingly indistinguishable from the villages and the more rural hinterland.⁵

Considering these conclusions in 1963 and the increased population since these figures were derived, all case referrals to various agencies were considered urban residents.

I. Q.'s for the experimental group were tabulated and a mean and mean deviation, as seen in Table I, were derived for each age level, five through seven, eight through eleven, twelve through sixteen. Control cases were equated within the mean deviation range, above and below the mean I. Q. score, for each age group. Wert, Neidt, and Ahmann stated:

The mean deviation or average deviation of a distribution is the mean amount of the absolute deviation of all the individual values in a distribution from the mean...the direction of the deviation above or below the mean has been disregarded. If the purpose for computing this measure is only for describing the distribution, this disregarding of signs is of nonsignificance.⁶

Each specific behavioral characteristic, in question, was recorded if it was either: (1) stated as a verified incident, (2) diagnosed by psychological projective instruments, (3) named in reports of psychiatric interviews. Furthermore, a specific characteristic had to be:

⁵Goldstein and Mayer, loc. cit.

⁶James E. Wert, Charles O. Neidt, and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research (New York, 1954), pp. 53-54.

TABLE I
AGE-I. Q. MEAN AND MEAN DEVIATIONS

Age Level	5-7	8-11	12-16
No.	11	25	28
$\bar{X}$	6.55	9.89	14.46
$\bar{X}$ Age Deviation	1.30	1.16	1.02
$\bar{X}$ I. Q.	77.89 (66-88)	96.37 (85-107)	85.88 (77-93)
$\bar{X}$ I. Q. Deviation	11.00	11.19	8.36

(1) mentioned by name, thereby excluding inferences to certain behavior, (2) stated without contradiction from inter- or intra- disciplinary findings.

Statistical Procedure

A discriminant analysis model was used for the different age levels to ascertain appropriate weights for the characteristics yielding maximum separation of firesetters and nonfiresetters. Wert, Neidt, and Ahmann concluded:

In some instances, the problem is one of (1) classification alone, (2) selection alone, (3) classification followed by selection, or (4) selection when characteristics of classified groups need to be evaluated or controlled. Discriminant analysis is a powerful tool in analyzing any of the foregoing four types of problems.⁷

Differences between the predicted means relative to standard deviation of the experimental and control groups were tested for significance and the relative effectiveness of each characteristic or characteristics which made the greatest contribution to the separation of control and experimental populations was determined. An equation for the probability of being included in either a firesetter or nonfiresetter group for each chronological, developmental level and for the total, disregarding developmental levels, was established.

The statistical operation, Crout method,⁸ was used to

⁷Ibid., p. 364.

⁸Presented by Dr. Peter F. Merenda in his lectures for Psychology Course 310 at the University of Rhode Island in the Fall semester of 1966.

derive the discriminant function. A Frieden Calculator was used for all statistical manipulations which the study required.

IV. ANALYSIS OF DATA

IV. ANALYSIS OF DATA

Discriminant Functions and Difference in the Means (D)

The first procedure was to obtain the discriminant function from the eight variables, impulsiveness, hyperactivity, enuresis, hostility, theft, destructiveness, hyperkinesis, and abnormal sexual practices, for each chronological developmental level, five through seven, eight through eleven, twelve through sixteen, and the combined total of cases, irrespective of age, which were used in the study. These functions, along with the difference in the means (D) of the two groups, firesetters and nonfiresetters, are presented in Table II.

Analysis of Maximum Separation

The analysis of maximum separation is shown in Table III, page 48, for each of the four groups; the significance of the above results are reported in Table IV, page 49.

Table IV reveals that firesetters were not significantly ($p > .05$) distinguished from nonfiresetters when chronological, developmental, sequential analyses were employed. Without age level restrictions, however, firesetters, generally, in toto, were discriminated ($p < .05$) from nonfiresetters in this specific, clinic population.

The characteristics which made the greatest individual contribution to the maximum separation of firesetters and nonfiresetters are indicated in Table V, pages 50 and 51. Despite the fact that the chronological, developmental, experimental and control groups, five through seven, eight

TABLE II

DISCRIMINANT FUNCTIONS WITH MEAN DIFFERENCES (D)
BETWEEN FIRESETTER AND NONFIRESETTER GROUPS

Group	Discriminant Function	<u>D</u>
5-7	$v = .26618x_1 + .06287x_2 + .01465x_3$ $+ .01727x_4 + .12383x_5 + .02359x_6$ $+ .05813x_7 + .00252x_8$	.28770
8-11	$v = .02556x_1 + .00154x_2 + .00144x_3$ $+ .00076x_4 + .00086x_5 + .00092x_6$ $+ .00067x_7 + .00001x_8$	.00416
12-16	$v = .03479x_1 + .00297x_2 - .00102x_3$ $+ .00100x_4 + .00051x_5 + .00038x_6$ $- .00179x_7 + .00445x_8$	.00897
Total ($\leq$ 5-7, 8-11, 12-16)	$v = .02510x_1 + .00456x_2 + .00038x_3$ $+ .00134x_4 + .00222x_5 + .00208x_6$ $+ .00034x_7 + .00085x_8$	.00893

TABLE III
ANALYSIS OF MAXIMUM SEPARATION

Group	Source of Variation	Degrees of Freedom		Sum of Squares
5-7	Function	m	8	$\frac{k_1 k_2}{N} D^2$
	Within	N-m-1	13	D
	Total	N-1	21	$\frac{k_1 k_2}{N} D^2 + D$
8-11	Function	m	8	$\frac{k_1 k_2}{N} D^2$
	Within	N-m-1	41	D
	Total	N-1	49	$\frac{k_1 k_2}{N} D^2 + D$
12-16	Function	m	8	$\frac{k_1 k_2}{N} D^2$
	Within	N-m-1	47	D
	Total	N-1	55	$\frac{k_1 k_2}{N} D^2 + D$
Total	Function	m	8	$\frac{k_1 k_2}{N} D^2$
	Within	N-m-1	119	D
	Total	N-1	127	$\frac{k_1 k_2}{N} D^2 + D$

TABLE IV
SIGNIFICANCE OF DIFFERENCE BETWEEN FIRESETTERS
AND NONFIRESSETTERS

Group	$F_{m, N-m-1}$	Significance
5-7	$F_{8,13} = 2.56988$	$p > .05(2.77)$
8-11	$F_{8,41} = .26676$	$p > .05(2.18)$
12-16	$F_{8,47} = .73841$	$p > .05(2.14)$
Total	$F_{8,119} = 4.25211$	$p < .05(2.67)$

TABLE V

PERCENT CONTRIBUTION OF EACH INDIVIDUAL CHARACTERISTIC
TO THE MAXIMUM SEPARATION OF FIRESETTERS
AND NONFIRESETTERS

Group	Characteristic	d	Δ	Δd	Percent Contributed
5-7	Impulsiveness	.64	.26618	.17036	59
	Hyperactivity	.45	.06287	.02829	10
	Enuresis	.28	.01465	.00410	1
	Hostility	.27	.01727	.00466	2
	Theft	.54	.12283	.06633	23
	Destructiveness	.37	.02359	.00873	3
	Hyperkinesis	.09	.05813	.00523	2
	Abnormal Sex	---			
				.28770	
8-11	Impulsiveness	.12	.02556	.00307	74
	Hyperactivity	.16	.00154	.00025	6
	Enuresis	.12	.00144	.00017	4
	Hostility	.08	.00076	.00006	1
	Theft	.20	.00086	.00017	4
	Destructiveness	.28	.00092	.00026	6
	Hyperkinesis	.28	.00067	.00019	5
	Abnormal Sex	---			
				.00416	

TABLE V (continued)

Group	Characteristic	d	Λ	Λd	Percent Contributed
12-16	Impulsiveness	.21	.03479	.00731	79
	Hyperactivity	.12	.00297	.00036	3
	Enuresis	-.04	-.00102	.00004	0 (-)
	Hostility	.30	.00100	.00030	2
	Theft	.32	.00051	.00016	1
	Destructiveness	.29	.00038	.00011	1
	Hyperkinesis	-.04	-.00172	.00007	8 (-)
	Abnormal Sex	.14	.00445	.00062	6
				.00897	
Total	Impulsiveness	.25	.02510	.00623	68
	Hyperactivity	.21	.00456	.00096	10
	Enuresis	.09	.00038	.00003	0
	Hostility	.20	.00134	.00027	3
	Theft	.31	.00222	.00069	7
	Destructiveness	.30	.00208	.00062	6
	Hyperkinesis	.10	.00034	.00003	0
	Abnormal Sex	.06	.00085	.00005	6
				.00893	

through eleven, and twelve through sixteen, were not significantly different, the characteristics in these groups which provided maximum separation of firesetters and nonfiresetters were for the most part, the same as those in the significant, total group. Impulsiveness, in the total group, contributed 68 percent of the attributed difference between experimental and control populations while in the five through seven, eight through eleven, twelve through sixteen groups, impulsiveness accounted respectively for 59, 74, and 79 percent of the difference.

In the total group, hyperactivity appeared to influence (10 percent), somewhat, the variance between the experimental and control samples but theft (7 percent), destructiveness (6 percent), abnormal sexual practices (6 percent), and hostility (3 percent) did not individually or in combination (32 percent) heavily contribute to the differentiation. Enuresis and hyperkinesis did not contribute at all to the variance in this and very little (4 percent) in the developmental groups. Similarly, hostility, destructiveness, and abnormal sexual practices contributed, at best, 6 percent in respective groups. Theft, also, contributed lightly except in the five through seven year group where it contributed 23 percent of the difference. Hyperactivity, in concert with the above statement, consistently accounted for 6-12 percent of the variance in all except the twelve through sixteen age group.

The five through seven age group is of interest because it was the only chronological, developmental group which even approximated significance ($p \leq .05$). A full discussion of the results, as they pertain to the hypotheses which were stated on pages 4 and 5, will be presented in Chapter V.

V. DISCUSSION AND IMPLICATIONS

V. DISCUSSION AND IMPLICATIONS

The results of the present study suggested that fire-setters can significantly be distinguished from nonfiresetters but the applicability of these findings for clinical practice is open to question. Since the attempt to discriminate fire-setters and nonfiresetters in regards to chronological, developmental, age sequence was unsuccessful, a Freudian, psycho-sexual, developmental interpretation of these findings could not be satisfactorily formulated. Firesetters, in toto, dis-regarding age levels, were capable of being characterized by the single symptom of impulsiveness; this alone seemed to be sufficient to distinguish firesetters from nonfiresetters and consequently brought forth reservations about the justification of using one variable for discriminatory purposes.

The inherent danger of relying upon one characteristic for "clinical discrimination" is threefold. Individual bias among clinicians in terms of interpreting projective materials, both in regards to rating and scaling impulsiveness, reduces the reliability and validity of discriminatory power. This would especially occur in facilities where a "team approach" is not utilized or where it is not applied efficiently.

While impulsiveness was found to significantly discriminate firesetters from nonfiresetters in the total population, for example a school, the base rate must be considered before the incidence of impulsiveness can be deduced to be greater than chance. Also, populations, both

fire and nonfire, vary in regards to the opportunity to observe instances of impulsiveness, pertaining to who defines an act as impulsive.

While impulsiveness implied firesetting in a general manner, it cannot directly be utilized to characterize a specific age group because the discriminant function was insignificant for the developmental groups. The present findings, therefore, cannot be used for prediction within the age groups, five through seven, eight through eleven, twelve through sixteen, without hesitation; as a result, the findings of the total group probably should be reserved for theoretical considerations.

In regards to Freudian, psychosexual, developmental levels, the present empirical research did not support either oral or phallic-urethral interpretations of firesetting. Characteristics, such as enuresis and abnormal sexual practices, which have, in the past, been attributed to both psychosexual levels by various researchers,¹ were not found to be symptomatic of either level of psychosexual development. The analysis of the five through seven developmental group did suggest, however, that, under different circumstances, for example samples, I. Q., sex, etcetera, firesetters might significantly differ from nonfiresetters, thereby lending some credence to an oral interpretation. When the other

¹Yarnell; Smith; Kaufman, Helms, and Reiser,
loc. cit.

levels were inspected, though, there was only a slight difference among the groups; this not only implied that there was no difference on a phallic-urethral level but also that the difference between firesetters and nonfiresetters did not increase with age as it should if the firesetter was fixated on an oral level of development. This further suggested either that fixation was age specific and nonlasting or that the occurrence was incidental to this particular population. The possible "hypertrophy of differentiation" in the five through seven age group could be due to the small N, twenty-two, which was available for use in the study. As a consequence, the reader is cautioned to interpret the results of this research with reservation; because of the small N, only suggestive trends were in evidence and the interpretation should be qualified by the population which was used in the study, namely a public referral agency.

As there were eight variables which were used for the discriminant function, many of which did not contribute greatly to the distinction between firesetters and nonfiresetters, studies in the future, utilizing a discriminant analysis model, would further the present findings by eliminating characteristics which do not contribute to the analysis. Wert, Neidt, and Ahmann² stated, "Normally it is difficult to

²Wert, Neidt, and Ahmann, op. cit. p. 369.

justify a test score in a battery which does not significantly enhance forecasting effectiveness." In this manner, characteristics, such as impulsiveness, theft, and hyperactivity in the five through seven group, impulsiveness, hyperactivity, and destructiveness in the eight through eleven group, and impulsiveness and abnormal sexual practices in the twelve through sixteen group would, without the inclusion of the other variables, perhaps maximize the power of separation of firesetters and nonfiresetters by a discriminant function. The findings then might lend support to Freudian or other theoretical hypotheses, for example a social mold or learning interpretation.

The characteristics, enuresis, hyperactivity, and abnormal sexual practices, were included in the present analysis, despite their relative nonexistence or negative results, favoring the incidence in nonfiresetters, on the various developmental levels, because they have been frequently observed and quoted in theoretical hypotheses concerning the psychodynamic structure of the firesetter. In the present population, however, the characteristics had to be qualified by the age of the firesetter since not all of the behavioral indicators would appear with the same frequency at all age levels. For example, sexual maladjustment would hardly be likely to be a precipitating, dynamic mechanism underlying firesetting of a five year old.

The negative results of the present study implied the need for further evidence in order to establish a sat-

isfactory empirical basis upon which to expound a theoretical postulate; otherwise, there will be a continuation of erroneous hypothesizing concerning the psychological "make-up" of the firesetter. Lewis and Yarnell agreed:

As far as we can determine, beyond the recognized fact that any chronic violator is one who remains immature with fixed reaction patterns, there is no single factor which predisposes to chronic repetition of the... [firesetting]. Where we were able to obtain information, we found no uniform reaction pattern.³

Baker,⁴ in 1891, also could not find symptoms which could characterize firesetters apart from a general inclusion in the realm of "mental disease."

The categorical question, "what is a firesetter?" psychologically remains unanswered and appears to be a meaningless question. In a clinic setting the predictive validity and reliability of detecting a firesetter from the behavioral characteristics, which have been attributed to firesetters over the past two centuries, appear to be low, as is the psychodynamic, interpretive meaning of the act of firesetting. The present findings showed that there is much overlap in possession of characteristics in both firesetter and nonfiresetter groups; consequently, if determination of firesetters is made on the basis of these behavioral symptoms, there will be many cases of false positives and false

³Lewis and Yarnell, op. cit., p. 433.

⁴Baker in Ibid.

negatives.

Psychodynamic interpretation seems to remain on an idiographic level, depending upon the individual in question. The single case studies of Goldwyn,⁵ Karpman,⁶ Siegel,⁷ and Warner⁸ appeared to be as valid an interpretation of the psychodynamics of firesetting as the present methods of investigating the "clinical problem of firesetting" allow.

Limitations of Investigating the Problem of Firesetting

The major problems associated with investigations in applied areas are: (1) size and composition of the available population from which to draw representative samples, (2) accumulation of verifiable data, (3) determination, rating, and scaling of the behavior, in this instance firesetting, under investigation.

Firesetting has to be either witnessed or confessed to be a confirmed fact, thereby posing a problem of gathering enough cases for a representative sample of firesetters. If a confession is offered as evidence of firesetting, there is always the possibility of exaggeration, falsification, etcetera of information which is difficult, if not impossible to control.

⁵Goldwyn, loc. cit.

⁶Karpman, loc. cit.

⁷Siegel, loc. cit.

⁸Warner, loc. cit.

Whether an individual has committed one, two, etcetera acts of firesetting could possibly facilitate psychological understanding and interpretation of the firesetter, depending upon the prevalence rate. This variable is also extremely difficult to determine or control since a firesetter might be apprehended for starting one fire yet ignite other fires without being detected. As nonfiresetters were not significantly different from firesetters in the clinic populations which were utilized in the present study, it is possible that "nonfiresetters" could have started fires but were not detected. Along the same line, the severity of the fire, as indicative of specific, psychological characterological structure, is another unexplained, difficult to determine, aspect of the "psychology of the firesetter."

Conclusions

The results of the present study partially supported the hypothesis that firesetters can be differentiated from nonfiresetters by the behavioral characteristics of impulsiveness, hyperactivity, enuresis, hostility, theft, destructiveness, hyperkinesis, and abnormal sexual practices. Of the four populations, age groups five through seven, eight through eleven, twelve through sixteen, and total (a combination of the other populations), only the total yielded significant differentiation of firesetters and nonfiresetters.

As a result of not being able to significantly discriminate firesetters and nonfiresetters in chronological, developmental sequence, the firesetter did not seem to be

fixated at the early oral psychosexual stage of development; hypotheses 2 and 3, as stated in page 5, were therefore rejected. Since the ability to distinguish firesetters from nonfiresetters decreased with chronological development, both firesetters and nonfiresetters appeared to essentially progress in accord with Freud's psychosexual developmental sequence; this finding seemed to reduce the credibility of characterizing the firesetter as fixated on a phallic-urethral psychosexual level as well. The emotional maturity, ego development, of the clinic population, as indicated by behavioral characteristics which were used in this particular study, was basically the same for both firesetters and nonfiresetters in the various age groups.

The characteristic, impulsiveness, in the total, significant group, alone seemed to be able to discriminate firesetters from nonfiresetters but the meaningful application of this finding for clinical practice is questionable. Relying upon only one characteristic for discrimination is unreliable and invalid because of: (1) individual bias among clinicians in terms of interpretation of projective materials, especially in combination with absence of psychodiagnostic "team approach" in various agencies, (2) a failure to establish base rates of impulsiveness in the population which is under investigation, (3) a failure to obtain significant results in various age groups; the application of a total group finding, therefore, appears to be relegated to theo-

retical investigation.

Although the present research did not find the categorical question, "what is a firesetter?" to be psychologically meaningful for clinical application or for present attempts to formulate psychodynamic interpretations of the act of firesetting, studies, in the future, could further the present results by eliminating noncontributing variables from the discriminant function; in this manner, future results might improve the discriminatory power of separating firesetters and nonfiresetters by behavioral characteristics and subsequently might help construct viable theoretical hypotheses which are based upon empirical findings. Also, future research could reduce a majority of false negatives and positives, which hinder effective prediction and identification of firesetters, if larger samples and stricter experimental controls and procedures are utilized. Because of the "applied" type of problem in evidence, methods of investigation are limited by: (1) size and composition of the available population from which to draw samples, (2) accumulations of verifiable data, (3) determination, rating, and scaling of the act of firesetting under investigation. At present, psychodynamic interpretation appears to be limited to an idiographic level.

Summary

One hundred and twenty eight case referrals to public agencies, Mental Hygiene Services and Child Welfare

Services, were used to differentiate firesetters from non-firesetters by the psychological characteristics of impulsiveness, hyperactivity, enuresis, hostility, theft, destructiveness, hyperkinesis, and abnormal sexual practices at different chronological, developmental stages of growth, five through seven, eight through eleven, and twelve through sixteen years. These groups were then combined for a total evaluation of all cases. The firesetters were referred specifically for firesetting and the nonfiresetters were equated on the basis of sex, I. Q., socio-economic status, rural-urban residence, and race. A preliminary study determined that Child Welfare and Mental Hygiene Services groups could justifiably be combined. A discriminant analysis with subsequent analysis of maximum separation and percentage of contribution of specific characteristics yielded: (1) nonsignificant results in all but the total, combined group, (2) impulsiveness in the total group as the only characteristic which contributed heavily, 68 percent, to the firesetter-nonfiresetter discrimination, the other characteristics providing little, if any, discriminatory power.

From these results, the author concluded that a Freudian, psychosexual, developmental level interpretation of the psychodynamics underlying the act of firesetting could not be supported at the present time. The firesetter did not seem to be fixated at either an oral or phallic-

urethral psychosexual level and appeared to progress, emotionally, similar to nonfiresetters. The categorical question, "what is a firesetter?" was reported to be psychologically meaningless in regards to clinical application of separating firesetters and nonfiresetters and to formulating viable theoretical hypotheses concerning the psychodynamic interpretation of the act of firesetting. Various studies and the literature were reviewed and an explanation of the seemingly contradictory findings was attempted. As a result, the author concluded that psychodynamic postulations are relegated to an idiographic level because of methodological difficulties, of which some are inherent, in research for "applied" areas. A guideline for future research in this field was proposed.

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APPENDIX

APPENDIX

RAW DATA FOR DISCRIMINANT ANALYSES

Group	Characteristic	Firesetters	k	Nonfiresetters	k	Total	N
5-7	(x ₁) Impulsiveness	≤ X ₁	10	3		13	22
	(x ₂) Hyperactivity	≤ X ₂	8	3		11	
	(x ₃) Enuresis	≤ X ₃	6	3		9	
	(x ₄) Hostility	≤ X ₄	8	5	11	13	
	(x ₅) Theft	≤ X ₅	7	1		8	
	(x ₆) Destructiveness	≤ X ₆	6	2		8	
	(x ₇) Hyperkinesis	≤ X ₇	4	3		7	
	(x ₈) Abnormal Sex	≤ X ₈	0	0		0	
8-11	(x ₁) Impulsiveness	≤ X ₁	18	15		33	50
	(x ₂) Hyperactivity	≤ X ₂	14	10		24	
	(x ₃) Enuresis	≤ X ₃	12	9		21	
	(x ₄) Hostility	≤ X ₄	18	16	25	34	
	(x ₅) Theft	≤ X ₅	12	7		19	
	(x ₆) Destructiveness	≤ X ₆	10	3		13	
	(x ₇) Hyperkinesis	≤ X ₇	11	4		15	
	(x ₈) Abnormal Sex	≤ X ₈	3	3		6	

RAW DATA (continued)

Group	Characteristic	Firesetters	k	Nonfiresetters	k	Total	N
12-16	(x_1) Impulsiveness	$\leq X_1$	20	14		34	56
	(x_2) Hyperactivity	$\leq X_2$	13	9		22	
	(x_3) Anuresis	$\leq X_3$	6	7		13	
	(x_4) Hostility	$\leq X_4$	21	13	28	34	
	(x_5) Theft	$\leq X_5$	17	8	28	25	
	(x_6) Destructiveness	$\leq X_6$	12	4		16	
	(x_7) Hyperkinesis	$\leq X_7$	4	5		9	
	(x_8) Abnormal Sex	$\leq X_8$	5	1		6	
Total	(x_1) Impulsiveness	$\leq X_1$	48	32		80	128
	(x_2) Hyperactivity	$\leq X_2$	35	22		57	
	(x_3) Enuresis	$\leq X_3$	24	19		43	
	(x_4) Hostility	$\leq X_4$	47	34	64	81	
	(x_5) Theft	$\leq X_5$	36	16	64	52	
	(x_6) Destructiveness	$\leq X_6$	28	9		37	
	(x_7) Hyperkinesis	$\leq X_7$	19	12		31	
	(x_8) Abnormal Sex	$\leq X_8$	8	4		12	