

Arson Update: A Review of the Literature on Firesetting

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Over the past several years, one of the few things that has risen about as sharply as inflation is the incidence of crime. The FBI's Crime Index Total for 1979¹ showed a 9% volume increase over 1978, while there was only a 1% increase in population. Statistics for the first half of 1980 revealed a 10% increase over the previous year.² Although overlooked in previous studies, as of 1979, arson became a newly established crime index.

Arson, "the willful or malicious burning or attempt to burn, with or without intent to defraud, a dwelling house, public building, motor vehicle or aircraft, personal property or another, etc.,"¹ has been a topic of study of law enforcement and fire prevention agencies, insurance companies, the business community and mental health professionals. A conservative estimate of property damage in 1979 due to arson is over half a billion dollars while data from 1975 reveal that arson resulted in a death toll of over 1,000, with 10,000 people injured and property damage over \$1.4 billion.³ These figures are conservative because they include only documented cases of arson. Most experts believe that at least 50% of all fires other than those actually labeled arson are also intentionally set.

Although arson is a significant problem, there continues to be difficulty in the detection, arrest and conviction of arsonists as well as in understanding the psychological makeup of those engaging in firesetting behavior. Considerably less is known about effective treatment strategies and the prognoses for these individuals. Part of the problem with the studies of firesetters is the result of intrinsic difficulties, such as inadequate design, biased sampling, unreliable subjects and misinterpretation of conclusions. In addition, up until 1979, there was no central gathering of information, resulting in skewed data bases depending on who was collecting the information and for what purposes. Previously, communities varied as to whether arson investigations were the responsibility of the police, fire department or insurance company.

This paper will attempt to review the significant literature on firesetting behavior in hopes of providing a greater understanding of the act of firesetting and its perpetrators. Although the first scientific papers on firesetting appeared in the 1800s, there subsequently appeared to be two basic trends in

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the literature on firesetting. As the psychoanalytic movement grew in the first half of the 20th Century, the focus of the psychiatric literature on firesetting was directed at the psychodynamic understanding of firesetters. This approach continued until 1951 when Lewis and Yarnell⁴ published their classic monograph on *Pathological Firesetting*, which remains the most extensive study in this field. In order to broaden their understanding of firesetters, later researchers turned from purely psychodynamic speculation to collecting demographic, psychosocial and biological data.

Historical Background

Prior to the scientific study of firesetting, fire stood as a multifaceted universal symbol representing the passions of love and hate and "the intangible force of life itself."⁴⁻⁵ Literature and religion make numerous references to fire symbols such as Sun gods, the burning bush, fire rituals, sacrifices and rites of purification.⁶ In addition to the hearth fire being the center of the home, fire has also been a symbol of destruction and evil ("burning in hell," "hot under the collar," etc.) as well as sexuality ("a burning desire," "hot lips," etc.).⁷⁻⁹

The Europeans were the first to study pyromania.¹⁰ In 1833, the Frenchman, Marc, stated pyromania "most likely occurred in sexually frustrated teenage country girls and also in older men where it was related to the achievement of sexual satisfaction." Isaac Ray, in 1871, concluded that pyromania usually involved "young persons living in the country who were badly developed, intellectually deficient, had a family history of insanity or epilepsy, anomalies in their character, habits and feelings, no delusions and no motive but the irresistible impulse to burn."⁴

The early psychoanalysts felt that fire had two meanings, a superficial hostility and an inner libidinal meaning.⁴ In the classic paper on *The Acquisition of Power Over Fire*, Freud analyzed the myth of Prometheus, who stole fire from the gods to give to mankind. In that work, he established the first psychodynamic formulation of firesetting, centering on the sexual derivatives which he felt had their roots in a fixation or regression to the phallic-urethral stage of libidinal development. Freud felt that "the warmth radiated by fire evokes the same kind of glow as the state of sexual satisfaction, and the form and motion of the flame suggest the phallus in action. . . . In order to possess himself of fire, it was necessary for man to renounce the homosexually tinged desire to extinguish it by a stream of urine."¹¹ Others, including Simmel,¹² Stekel,¹⁰ Fenichel¹³ and Schmideberg,¹⁴ were in agreement with Freud's hypotheses that firesetting behavior was closely related to urethral eroticism, while also noting important sadistic components to this behavior.

Grinstein,¹⁵ in a reexamination of Freud's hypothesis, felt that the firesetter evidenced a variety of earlier character difficulties. He believed that in order to conserve and confine fire, one not only had to control the urge to urinate, but had to learn to "retain" fire, a function of the anal stage.

He also felt that the act of "blowing" a fire out or making it stronger indicated an oral component to this behavior. Grinstein concluded that developmental difficulties relating to firesetting occurred at all levels of libidinal development.

Lewis and Yarnell's⁴ classic study on *Pathological Firesetting* still remains as the standard to which all others are compared. In addition to an in-depth review of the literature, they studied the case records of 1,145 adult male firesetters in addition to groups of juveniles, adolescents and women. Not only is this the largest study of firesetters to date, but it was the first to attempt a classification of firesetters.

These authors noted the highest incidence of firesetting at age 17, with other lesser peaks at ages 26, 40, 49 and 60. Their group consisted of 154 psychotics, 266 who had revenge as a motive, 174 who were angry at employers and 92 female subjects who cited jealousy and rage as primary motives. Racial incidences were equal and less than half of their subjects had family pathology; however, the younger pyromaniacs more frequently came from broken homes. Other contributing factors included physical deformities, overall lower intelligence and poor occupational and marital adjustments. Over age 20 there was an increased incidence of alcoholism and over half of their sample had other legal problems.

The group labeled as pyromaniacs were those who acted impulsively, with no thought of damage to others and no practical reason for firesetting. Frequently seen were those who set fires in order to help firemen, be heroes, watch destruction or who just felt unable to resist the impulse to set a fire. The usual pyromaniac, in contrast to the hypotheses of earlier literature, was not conscious of sexual urges and only in a few cases was sexual gratification obtained by firesetting. Frequently, there was a sadistic enjoyment from destruction with relief of rage from frustration and a desire for exhibitionism. On many occasions, firesetting was precipitated by frustration in attempted adult heterosexual relations. Where heterosexual difficulties were present, these individuals generally functioned in the mentally defective IQ range. Specific data from Lewis and Yarnell on firesetting in juveniles, adolescents and women will be presented later in this paper in comparison to other writers who studied those particular groups.

Recent Literature

Although the recent psychiatric literature on firesetting behavior will be reviewed shortly, one area that has been the focus of law enforcement and fire prevention agencies, but has received scant attention in the mental health field, is the arson investigation.¹⁶⁻¹⁸

From the onset, the arson investigation is fraught with difficulties. An investigation must first take place to determine if a crime has even been committed. Frequently, the fire itself destroys the evidence of its origin.

Although newer techniques have improved the detection of arson, after documenting that a fire is the result of arson, the next hurdle is apprehending

the suspect. Intentional fires are frequently set at night, secretly done and few suspects are ever caught. Compared to averages for all the index crimes where 21% were arrested, 6% convicted and 3% incarcerated, for fires classified as incendiary or suspicious, only 9% were arrested, 2% convicted and 0.7% incarcerated.

In an attempt to improve the detection of arson and the arrest and conviction of these firesetters, some cities have organized specialized arson squads. In Baltimore, for example, the Arson Strike Force,¹⁸ which has full-time staff from the police and fire departments and the State's Attorney's Office, increased the arrest rate from 20% in 1979 to 40-45% in 1980, while the national average was only 4.5%. They also claimed a conviction rate of 100%, with their only dismissal being one case that pled insanity, whereas, in 1979, they had a conviction rate of 79% with 11% dismissals. This compared to a national conviction rate of only 30%.¹⁹

Once the investigation suggests that an intentional fire (the *actus reus*) has actually taken place, the defendant's *mens rea* (or "guilty mind") must be proven. Although not always evident, the presence of a motive is helpful in proving criminal intent. It is in this area of the motivation of firesetting that the psychiatric literature has shed considerable light.

Following the lead of Lewis and Yarnell, investigators began looking at distinct groups of subjects in hopes of isolating significant variables in these populations. Many authors have attempted to look at the different conscious and unconscious motivations in groups of firesetters.^{3,5,7,20-25} The consensus is that revenge (including hatred and jealousy), which is frequently associated with alcohol use, is the most common primary motive, occurring in 50-70% of all firesetters.

Although somewhat arbitrary, certain classifications of firesetters have evolved. These include: 1) nonpsychologically motivated firesetters; 2) juvenile and adolescent firesetters; 3) compulsive firesetters/pyromaniacs; 4) psychotic firesetters and 5) female firesetters.

Nonpsychologically Motivated Firesetters

Although the nonpsychologically motivated firesetter is probably responsible for a large percentage of fires, little is known about this individual. The motives of this group include: 1) firesetting for profit or fraud (3-19% of all arsons); 2) crime concealment (7-10%); 3) facilitating other crimes; 4) intimidation or extortion and 5) political or social protest.^{3,16} Levin²⁶ suggests that most arsonists have psychopathic personality disorders, their firesetting being just another form of antisocial behavior. Although opinion is varied, firesetters and other violent offenders share many of the same personality and predisposing background characteristics.^{17,27} In addition to having limited information on this group of firesetters, our knowledge becomes even less useful when one considers that it is based on those who have been unsuccessful at their task. We may know a little about inadequate criminals but next to nothing about the real professionals. Hence, the

personality structures, psychodynamics and backgrounds of these individuals is left purely to speculation.

Perr²⁸ and Walsh¹⁸ review arson for profit and fraud. The incidence of such fires "flow with demographic shifts, Federal and State policies, insurance availability, minority immigration, changing business conditions and accidents."²⁸ Since the risks of detection are minute and the profits high, inner city arson has become widespread.

Concealing another crime by destroying the evidence in a fire, or setting a fire to facilitate the success of another crime, is another nonpsychological form of firesetting; however, little is known of this type of behavior, perhaps due to its success. Intimidation and extortion using the threat of fire appears to be the province of organized crime and certain criminals. Again, little is known of this type of behavior.

The use of fire for social and political protest is well known. One has only to look at events in any part of the world experiencing political or social unrest to observe firesetting for such purposes. After noting that bombings serve many of the same purposes as political/social firesetting, MacDonald⁵ observed other similarities, such as motives, use by organized crime and revenge groups, the element of excitement and, in some, even sexual arousal. Although suicide by self-immolation may be the product of severe emotional difficulties, this form of protest, as seen for example during the Vietnam War and following the invasion of Czechoslovakia in 1968, has been used on occasion in the past.

Juvenile and Adolescent Firesetters

Firesetting behavior during childhood and adolescence has been one area that has received considerable attention in the literature. Prior to the study by Lewis and Yarnell, Yarnell²⁹ studied a group of 60 children who had set fires. Most of her subjects were of dull or average intelligence. Although about 50% of the six-eight year-old group had learning disabilities, these youngsters were generally referred for asocial trends other than firesetting. They became anxious when a fire started and were not interested in seeing the fire engines arrive or watching firemen extinguish the blaze. Fires were set with associated fantasies of burning a family member. These fires were set at home, caused little damage, but were symbolically significant. This is in marked contrast to adolescents (11-15 years old), who showed little anxiety or guilt, waited to see the fires and set them mainly in pairs composed of an active and passive partner.

Lewis and Yarnell's⁴ later study confirmed that decreased intelligence was not a factor in preadolescent firesetters and that fire held magical connotations and a potential for destruction. The adolescent males had the greatest incidence of firesetting which was associated with sexual conflicts and emotional stress. It was felt, however, that the prognosis as a whole was not bad.

Kaufman *et al.*³⁰ found no cases of neuroses, as implied by theories of an arrest at the phallic-urethral stage of development, in 30 firesetting boys. They did note diffuse personality difficulties suggesting problems of an oral nature. These firesetters tended to use the ego defenses of denial, flight, turning the passive to active and identification with the aggressor. They frequently felt or were in fact deserted, perceiving that as an aggressive act. Fire served to bring together the patient and the lost parent. Vandersall and Weiner³¹ viewed firesetting as a symptom resulting from ego deficits in children with problems centering around aggression and impulse control.

Macht and Mack³² studied four adolescent firesetters and concluded: 1) the act is complex and determined and was not just the result of impulse breaking through; 2) the act had multiple determinants in terms of the meaning of the act and specific associations with important relations in the past and present and 3) there was some guilt and anxiety with the act, but the firesetters did not consider it ego alien.

A number of authors point to the generally disturbed and unstable family background of firesetters.^{4-5,20,25-26,29-36} Frequently, at least one parent is missing from the home. Heath *et al.*³⁵ in particular found one consistent factor to be extreme social disorganization and parental pathology in the families of firesetters.

Fineman³⁴ noted that although childhood curiosity frequently leads to accidental firesetting, this group is easily distinguished from the pathologically firesetting child. He felt "Firesetting is a learned behavior, emergent in childhood and behaviorally cued." Although there are some studies dealing with the behavioral treatment of firesetting children,³⁷⁻³⁹ this certainly is an area where further research is needed.

Although various aspects of childhood firesetting have been addressed in the literature,^{33,40-45} a particular focus of attention has been the triad of enuresis, firesetting and cruelty to animals as predictive of adult violent behavior. Several authors^{35,46-48} have addressed this issue and have questioned whether there is any relationship between firesetting and the other triad components; however, there is no empirical support for such a contention.

Compulsive Firesetters/Pyromaniacs

Pyromania recently received official recognition after it was incorporated into the *Diagnostic and Statistical Manual of Mental Disorders-Third Edition (DSM III)*.⁴⁹ The diagnostic criteria summarize the findings in the psychiatric literature to date and include: 1) recurrent failure to resist impulses to set fires; 2) increasing sense of tension before setting the fire; 3) an experience of either intense pleasure, gratification or release at the time of committing the act; 4) lack of motivation, such as monetary gain or sociopolitical ideology for setting fires and 5) not due to another disorder.

The most frequently noted features associated with pyromania include alcoholism, history of a disturbed family environment, below normal intelli-

gence (except for children), history of prior delinquency and psychosexual problems. Others also note a higher incidence of physical abnormalities.^{4,25}

Estimates vary, based on the population studied, as to the proportion of firesetters who are pyromaniacs, ranging up to 40%.²¹ Several investigators^{5,21} believe that pyromania is currently extremely rare, especially pyromaniacs obtaining sexual gratification from the act. As noted previously, some authors feel pyromaniacs generally have psychopathic personalities.

Foust⁵⁰ reviewed firesetting behavior from a legal perspective. He noted historically that, since common law arson carried the death penalty, labeling someone as a pyromaniac was one way of absolving them of criminal responsibility. Firesetting, however, is rarely covered under McNaughten or the irresistible impulse rules. He suggested that although few firesetters are legally insane, the crucial issue is whether they are a future risk to society and if they are treatable. In addition to the previously mentioned features associated with pyromania, developmental crises (i.e., adolescence, marriage, parenthood, etc.) contribute to difficulties with impulse control. Thus, one might consider incarceration during such a crisis if it is believed that without such a stress the individual would no longer be dangerous.

Psychotic Firesetters

Psychotic firesetters reportedly account for only 10-15% of arsons.²¹ Although schizophrenia is most commonly reported, firesetting has been reported in other psychotic illnesses including organic brain syndromes, manic depressive illness and delirium of various etiologies. These individuals may be suicidal and set fires secondary to delusions or hallucinations; however, the motivation is frequently the same as in nonpsychotic firesetters⁵¹ and the presence of psychosis alone has not been predictive of firesetting behavior.²²

It is claimed that firesetting only rarely occurs in manic depressive illness;⁴⁻⁵ however, Gunderson's description of a case of firesetting during a manic state suggests that this form of acting out, although not necessarily reported, may be more common than has been previously acknowledged.⁵² Firesetting has also been noted as a form of patricide in a mother-son folie a deux.³⁶

Female Firesetters

Several authors have specifically looked at female firesetters.^{4-5,53-55} Lewis and Yarnell⁴ and later authors noted a decreased frequency of firesetting compared to males. Although the motives remained the same, Lewis and Yarnell found that these women usually viewed themselves as heroic victims and set fires in property that had emotional meaning. There was a greater incidence of psychosis than in males. Although it was anecdotally believed that firesetting in female adolescents was correlated with menses,

no such association was found.

Henjanic *et al.*⁵⁴ found that female criminals were less likely to be referred for psychiatric evaluation and more frequently given a diagnosis of affective disorder; however, female arsonists were referred more frequently than other female criminals.

Tennent *et al.*⁵⁵ confirmed Lewis and Yarnell's findings for women, as did Awad and Harrison.⁵³ As with males, female firesetting is seen to be another form of antisocial behavior without any verified predictors of this behavior.

Follow-Up

As noted earlier, pitifully few studies have dealt with the long-term prognosis and treatment of firesetters. To my knowledge, only Soothill and Pope's⁵⁶ 20-year cohort study of arsonists provides any data on recidivism in firesetters. Of 67 men convicted of arson in 1951, only three became arson recidivists during the next 20 years. Of those three, one was reconvicted of arson within one year, while one suffering from schizophrenia was reconvicted 13 years later and one diagnosed with pyromania was reconvicted 15 years later. Soothill concluded that long-term follow-up of arsonists is essential, since this behavior may recur in the distant future; however, one also must note the vast overprediction of arson recidivism in view of Soothill's findings.

Discussion

It appears that a number of conclusions about firesetting and firesetters can be made based on a review of the significant literature over the past 150 years. It is clear that the incidence of firesetting behavior, along with other criminal activity, has continued to rise and has drawn the attention of law enforcement and fire protection agencies, the insurance industry, business community and mental health fields. Although arson is a difficult crime to prove, the advent of the specialized "arson squad" with more sophisticated technology and a coordination of resources has led to more effective detection and prosecution of firesetters than in the past.

In contrast to the earlier predominantly psychoanalytic literature on firesetting, which enhanced the psychodynamic understanding of these individuals, the more recent studies, beginning with Lewis and Yarnell, focus on a classification of various groups of firesetters. In addition to the accidental firesetters, this author identifies five relatively distinct groups of firesetters that exist, including: 1) nonpsychologically motivated firesetters; 2) juvenile and adolescent firesetters; 3) compulsive firesetters/pyromaniacs; 4) psychotic firesetters and 5) female firesetters. Although these groups may have similar motivations, each has its own, specific features. There are also several general features associated with firesetters. These include a history of delinquency, psychosexual problems, a disturbed family environment, alcohol abuse and below normal intelligence in adults.

Although this classification does provide a useful framework for understanding the firesetter, the clinical evaluation of such individuals continues to have many difficulties. For example, especially at the pre-trial stage, how does one categorize the alleged offender who clearly denies setting the fire? Unfortunately, my limited clinical experience to date suggests that the "innocent" arsonist is in the vast majority. Long-term study of convicted firesetters may lead to an admission of the act and a better psychological understanding of the firesetter; however, even such exhaustive efforts may not be fruitful.

Another problem with the present classification of firesetters is that there is a small group of individuals who just do not clearly fit into one of the five suggested categories. These arsonists may have characteristics of several of the firesetting groups. A more comprehensive evaluation and follow-up may reveal that these offenders do fit into the proposed classification system; however, as with most psychiatric diagnoses, a sixth group of "atypical" firesetters may have to exist at least until our present sophistication in this area is improved.

A major difficulty in the literature on firesetting is the inadequate design of most studies. Along with this problem is the difficulty in comparing studies to each other due to differences in subject population and methodological approach. Although the Rorschach and Wechsler (WISC and WAIS) have been used,^{45,57} there has been no standardized psychometric approach to the study of firesetting allowing an adequate cross-comparison of results. In addition to the internal difficulties of most studies, the literature contains few studies on the treatment and prognosis of such offenders. Soothill's 20-year follow up study of firesetters highlights our vast overprediction of arson recidivism. Although this is in keeping with psychiatry's inability to reliably predict future violent behavior, future research in this area seems clearly indicated.

In reviewing the literature on arson, this author is left with the conclusion that, at present, our knowledge of firesetters, their behavior, treatment and prognosis is limited. This costly and dangerous crime represents an ever increasing problem for our society and should be a challenge to forensic psychiatry. In the future, I plan to look further into the epidemiology of arson and the identification and classification of these offenders. An approach which recognizes that the act of firesetting is quite complex and takes into account the firesetter's biopsychosocial environment is essential in order to truly understand this individual and his behavior.

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