

## Arson Trend Increasing—A Real Challenge to Psychiatry

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**ABSTRACT:** This research evaluated the arson trend in Finland since the 1960s by analyzing the Official Crime Statistics of Finland registered by the police and examined more detailed about arsonists ( $n = 98$ ), who had been in the forensic psychiatric pretrial examination by using homicide offenders ( $n = 55$ ) as control subjects. From 1965 to 1991 the percentage of arson in relation to all crimes increased fivefold and in the same timeframe the amount of arson increased nearly tenfold. According to the police in Finland there are committed over 700 arsons every year, of which 90% are committed by men. The percentage of women has however increased 0.2% yearly. Women today commit about 10% and juveniles 10 to 15% of all arsons. The arsonists differed from the homicide offenders regarding rural residence ( $P = 0.009$ ), poor education ( $P = 0.004$ ), absence of regular work at the time of the crime ( $P = 0.004$ ), suicidality ( $P = 0.001$ ), alcohol problems ( $P = 0.002$ ), psychiatric care ( $P = 0.000,02$ ) and arsonists more commonly found to be not responsible for the crime committed ( $P = 0.01$ ).

**KEYWORDS:** psychiatry, arson, firesetting, pyromania, crime, forensic psychiatry

The amount of arson has been increasing worldwide since the 1970s [1,2]. A typical arsonist is unemployed and alcohol-dependent man, who has a low social status, few personal relationships and suffers from mental disorders [3,4]. Over 50% of arsonists commit arson in their own neighborhood and this has significant emotional meaning to the firesetter [5].

From a psychiatric point of view, the act of committing arson is due to the arsonist's incapability of controlling his anguished and aggressive impulses or to poor impulse control [6,7]. Jackson with his colleagues (1987) [8] explained that committing arson is an aggressive attempt to change a person's psychosocial living conditions in cases in which other alternative and generally accepted behavior patterns have not been effective enough. According to various studies only a small part of arsonists, the lowest less than 1%, are pyromaniacs, who get erotic satisfaction by watching a fire [9].

In the 1960s the police registered in Finland on average 100 acts of arson every year. The corresponding number in the 1970s was 263 and in the 1980s 532 [10]. The amount of arson doubled from 1980 to 1989, from 368 cases to 748 [11]. In 1960 there were fewer arsons than homicides, whereas since the middle of

the 1970s the amount of arson registered by the police has been twice as large as that of homicide [10].

In recent years in the United States it has come to the attention that an increasing amount of arson is committed by juveniles. According to statistics of the F.B.I., in 1990 44% of all offenders who had committed arson, were juveniles under 18 years of age. The percentage of juveniles in other crime categories was not as high as in arson [12]. In Sweden, half of all arsons are nowadays committed by juveniles [13]. In Finland in the 1970s, about 10% of arsonists were young people aged between 15 and 20 and in the 1980s the corresponding number was 12% [10]. In 1991, 21% of persons who were accused of committed or attempted arson were young people under 21 years of age [14].

A reliable international comparison with the amount of arson, financial losses, and loss of human lives is difficult to carry out, because the crime statistics in different countries are defective and heterogenous. However, roughly estimated 25 to 30% of all fires are set on purpose and financial losses are of the same size and expense as those caused by accidental fires [15].

In addition to financial losses, arsons cause loss of human lives, about 100 people burn to death every year in Finland. According to the research by Alanne and Kulha (1988) [16] 14% of fires that caused deaths were arsons.

The purpose of this study is firstly to evaluate the arson trend in Finland since the 1960s in a timeframe of 25 years and secondly to examine more detailed about arsonists, who had been in the forensic psychiatric pretrial examination by using homicide offenders as control subjects.

### Material and Methods

Firstly in this study the Official Statistics of Finland (SVT XXIII A-series) from "Criminality Known to the Police" during the years 1965–91 were analyzed. The numbers of all known crimes, rapes, and homicides were sampled and the amount of those was compared with corresponding numbers of committed or attempted arsons at the same time.

The follow-up times on women, juveniles, and different crime categories vary because specific statistical data on arsonists has only been available from the Official Statistics of Finland since 1980; age-specific data has only been available since 1970.

The second study sample consisted of arsonists, who had been in a forensic psychiatric examination in the University hospital of Oulu between 1975–1993, involving 98 subjects. There were 86 males and 12 females. Their ages ranged from 16 to 63 years ( $M = 31.3$ ,  $s.d. = 10.5$ ). The control group consisted of 55 individuals, who had been under pretrial forensic psychiatric examination after a committed homicide. There were 42 males and 13 females aged 15 to 68 years ( $M = 29.2$ ,  $s.d. = 14.0$ ). There were not any statistically significant differences in age- and sex distribution between the arsonists and the control group.

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A SAS statistical program (SAS 1985) [17] was used for processing the data from the Official Statistics of Finland. The analyzing method used was linear regression analysis. The forensic psychiatric data was analyzed by microcomputer using the SPSS for Windows-program [21]. T-tests were used for equality of means. To test the statistical significance the Chi-Square test was used for the discontinued variables and the Student's T-test for the continued variables. The result was considered statistically significant, when the *P* value was < 0.05.

## Results

In Finland the proportion of arsons of all crimes against the Criminal Code has grown from 1965 to 1991, whereas the proportion of rapes and homicides has decreased (Fig. 1).

During this examination period the percentage of arsons to that of all crimes has increased fivefold. In Finland in 1965 the percentage of arsons to all crimes was 0.02%, when the corresponding number in 1991 was 0.10%, the average growth was 0.003% a year. The percentage of homicides to all crimes has slightly decreased. In 1965 0.03% of all crimes were homicides and in 1991 the corresponding number was 0.02%. The percentage of rapes compared to all crimes has decreased almost to half from 1965 to 1991. In 1965 the percentage of rapes was 0.09% and correspondingly in 1991 0.05%.

From 1965 to 1991 the number of arsons has increased almost tenfold. In 1965 the police registered 80 arsons and in 1991 772. During the examination period most arsons were committed in 1990 (796 cases).

Sex-specific statistical data of the numbers of arsonists has only been available from Official Statistics of Finland since 1980. From 1980 to 1990, 90% of arsons were committed by men (Fig. 2). The percentage of female arsonists has however increased 0.2% every year. In 1980 women committed 6.2% of arsons, when the corresponding number in 1990 was already 10.0%.

The proportion of juvenile arsons has also been increasing slowly during the 20 year examination period (1971–1990) in relation to other crimes allegedly committed by Finnish juveniles aged between 15 and 20. In 1971 the percentage of arsons of all crimes committed by juveniles was 0.03% and in 1990, 0.06% or twofold. Juveniles committed the most arsons in 1989, when the percentage

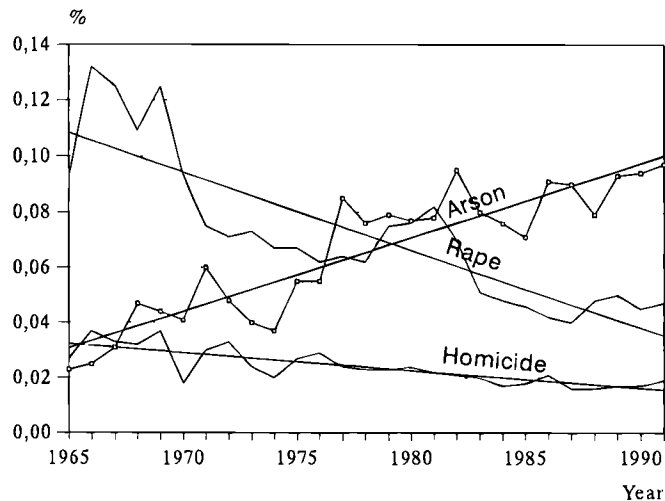


FIG. 1—The proportion of arsons, rapes, and homicides of all crimes against the Criminal Code in Finland between the years 1965 and 1991.

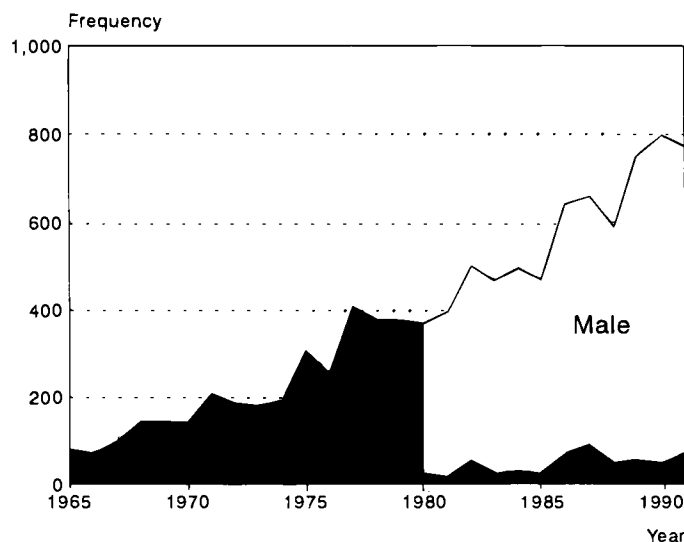


FIG. 2—The number of arsons in Finland between the years 1965 and 1991, sex separated since the year 1980.

of arsons was 0.10% of all crimes committed by juveniles. The percentage of juvenile arsons in relation to all committed arsons has remained relatively steady, from 1971 to 1991 which means that 11% of arsons were committed by juveniles on a yearly basis (Fig. 3). Years in exception, often juveniles committed arsons in 1972 (17.3%), 1980 (16.3%) and 1989 (16.3%) (Table 1).

The arsonists differed from the homicide offenders regarding rural residence, poor education, absence of regular work at the time of the crime, previous mental symptoms, suicidality, psychiatric care and arsonists more commonly found to be not responsible for the crime committed. A total of 84% of the arsonists and 62% of the homicide offenders had an alcohol problem. This difference was statistically significant (*P* value 0.002). On the basis of the forensic psychiatric data, the state of drunkenness at the time of the crime was reliably stated by 94 arsonists and 54 homicide offenders. 86% of those examined arsonists and 81% of the homicide offenders were under the influence of alcohol at the time of committing the crime.

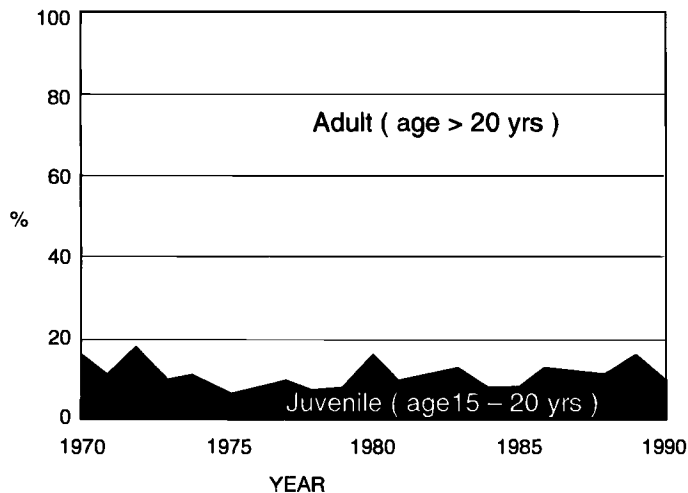


FIG. 3—The proportion of adult and juvenile arsonists in Finland between the years 1970 and 1990.

TABLE 1—Demographic, criminologic and clinical data for the Arson and Control Group at the time of the crime.

Variable	Arson (n = 98) Number (%)	Control (n = 55) Number (%)	Sign. P value
Urban residence	39 (40)	34 (62)	0.009
Marital status			NS
Unmarried	69 (70)	37 (67)	
Marriage/Cohabitation	11 (11)	11 (20)	
Divorced/Widowed	18 (18)	7 (13)	
Education not more than 9 years of Basic school	82 (84)	32 (63)	0.004
Occupation (n = 97/n = 52 of working age) employed	7 (7)	11 (21)	0.004
Previous psychiatric care	84 (86)	30 (55)	0.000,02
Psychiatric diagnosis	68 (69)	27 (49)	0.008
Suicidal thoughts	67 (80)	29 (54)	0.001
Suicide attempts	47 (56)	15 (28)	0.001
Criminal responsibility			0.01
Fully responsible	13 (13)	10 (18)	
Diminished responsible	53 (54)	39 (71)	
Not responsible	32 (33)	6 (11)	
Alcohol problem	82 (84)	34 (62)	0.002

## Discussion

In Finland the statistics kept on arsons are incomplete and real numbers of arsons are partly inaccurate, because the Central Statistical Office of Finland, the Rescue Department of the Ministry of the Interior of Finland, Insurance companies and the Fireprotection Union of Finland keep their own statistics on arsons. The statistical reliability is the most accurate in registers of the Police and that is the reason why those statistics were used in this study.

A few arsons can also remain unknown, because Finnish Law obliges the police to investigate more detailed the cause of fire only if the fire is suspected to being an arson. However, in this paper all the cases were clear arsons. During the last decades the investigation methods of causes of fires have improved, which may have increased the number of arsons that became known to the police and to Official Statistics of Finland [15], and this partly influences the increasing arson trend, but it can not explain all about the increasing arson trend.

In international studies the percentage of arsons committed by females has been about 15% [18]. According to this research in Finland 10% of arsonists are female. The result corresponds to previous Finnish crime reports [19]. However, the female arson trend in Finland has been slowly increasing in the 1980s.

During the last 20 years the percentage of juvenile arsons has remained stable at about 10 to 15%. An interesting fact is that remarkably large numbers of juvenile arsons and increasing crime trend reported from the United States and Sweden [12,13] differ clearly from the situation in Finland. The differences between various countries are only partly due to differences in the crime statistics, and there must be also other explaining factors in culture and for instance, in social politics. Those factors explain the different juvenile suicide rate in Finland, too.

In Finland there are about 250 forensic psychiatric examinations each year and these are mainly carried out in six different hospitals. In the University Hospital of Oulu the forensic psychiatric team makes about 7 to 9% of all examinations in Finland. In this study the 98 arsonists receiving a forensic psychiatric examination in the years 1975–93 represent 16 to 21% of all Finnish arson offenders referred by the courts for a mental examination during that period.

For example in the year 1987, 68 arsonists were examined in Finland and 11 of them were examined in Oulu. The corresponding numbers in year 1993 were 19 in Finland and 4 in Oulu.

The court decides if a mental examination of an offender is necessary and the National Board of Medicine indicates where it will take place. The scheme of the examination in each center is equally the same. This makes the representativeness of this study data sufficient enough. In Finland there is still the problem that forensic psychiatric examinations are very expensive and forensic psychiatrists have been educated only about 10 years in one place (since 1983 in University of Kuopio).

Our idea of what fraction of arson offenders passing through the courts are referred for a mental examination is the suspicion of an arsonist's psychiatric or somatic disease, mental deficiency, dementia, substance abuse, suicidality and heaviness of the crime. Then there is a possibility that the most healthy arsonists never existed in psychiatric data.

According to our research results arsonists mainly are male, poorly educated and unemployed, who greatly suffer from mental problems. The most important psychiatric symptoms of arsonists were found to be suicidality in its different forms and also the heavy usage of alcohol. In previous studies 20% of female arsonists suffered from alcoholism [3].

In our opinion, arson often in the beginning serves as a way of suicide. When the act proceeds the situation changes and the subject escapes the personal suicide. The result is only a "social suicide"—the crime of arson. Previously Tuovinen [22] found that most of the criminal acts serve as this kind of defensive ego functions. In this study over one third of the arsonists used fire-setting for a suicidal attempt. The difference of the arsonists in relation to that of the control group regarding variables indicating suicidality was statistically significant.

In comparison with the homicide offenders, arsonists were found to have more commonly diagnosed psychiatric diseases. The incidence of psychoses was fourfold, chronic or severe depression about threefold and mental retardation twofold when compared to the homicide offenders. It is noteworthy, that only a small part of the arsonists, in this study 4%, fills the DSM-III-R criteria for a diagnosis of pyromania.

In summary, according to this research it can be stated that the increasing arson trend in Finland since the middle of the 1960s is analogous to international examinations from different countries [1,2,15]. Because of the increasing arson trend there should be paid more attention to acts of arson in different branches of science. Psychiatric examination and mental treatment of arsonists are especially challenging because the firesetters are found to have more mental disorders than other criminal offenders [20].

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