

# Explaining Arson: A Cross-Border Theoretical Approach

*Lydia Dalhuisen*

## 1 Introduction

Firesetting is complicated behaviour that raises several questions. One question that is elaborated on in this chapter concerns the perpetrators of this offence. What is it that drives a person to commit arson and what is more: why do some people become arsonists and others do not? And why are some firesetters pure arsonists, in the sense that they do not commit other crimes, while other arsonists exhibit a range of criminal behaviours? Through the years attempts have been made to answer these and other questions. Various explanations from diverse theoretical perspectives have been presented, all attempting to increase knowledge on firesetting and firesetters. Incorporating these previous attempts, this chapter takes a cross-border<sup>1</sup> theoretical approach in explaining arson behaviour. From a multidisciplinary viewpoint, different existing theories and models that can be used to explain this phenomenon are discussed. In line with the research tradition of the Utrecht school, which is embedded in the Willem Pompe Institute, this cross-border discussion focuses specifically on the individual firesetter. The aim of this chapter is to answer the following research question: how can the act of arson be explained?

In answering the research question, a funnel-shaped structure can be seen, wide at the start and narrowing down to the specific individual. This chapter first tries to explain arson on a macro level and meso level, using plausible explanations from the field of criminology directed at the population of firesetters. Subsequently, on a micro level, single-factor and multiple-factor psychological explanations for arson are described to explain why individual firesetters act as they do. Finally, still on a micro level, arson is explained from a more specific psychopathological perspective, in order to offer insight into different mental disorders which might lead to arson as well as the role of pathological motives. It must be kept in mind that the different explanations on

---

<sup>1</sup> The term ‘cross-border’ in this respect refers to a multidisciplinary crossing of borders by using different explanations from different theoretical fields.

different levels provided in this chapter are complementary and not exhaustive. From the following it will become clear that there are several types of arsonists, who have different reasons to set fire.

## 2 A criminological approach: routine-activities theory

Starting on a macro level, I would like to look at explanations for arson from the field of criminology. Criminology is the study of crime, trying to explain its nature, causes and means of prevention on both an individual and a societal level. However, despite its significant societal impact, no specific criminological theories have been developed for arson. An explanation for this might be the fact that there is uncertainty regarding the precise nature of the offence. Nevertheless, more general criminological theories can be applied to the phenomenon of arson.

Before discussing a different criminological theory more elaborately, I would like to give a brief overview of cultural criminology. In line with the tradition of the Willem Pompe Institute, some mentioning of cultural criminology cannot fail. Cultural criminology tries to understand and explain crime within the domain of culture. Central to this perspective is the belief that crime is socially constructed and cannot be seen outside the cultural context.<sup>2</sup> This is an important framework because it places criminal behaviour, like arson, in a broader context and takes into account social and cultural aspects in explaining deviant behaviour. Regarding arson, one specific study explains the fascination (young) people have for fire from a cultural criminological perspective.<sup>3</sup> According to Presdee the duality fire holds (destruction versus creation; fear versus fascination) is profoundly embedded in the consciousness of our culture and results in an almost 'instinctive, innate and emotional cultural response to fire'.<sup>4</sup> Through the ages several important celebrations and rites have involved fire, and although knowledge on the meaning of fire in those ancient festivities was lost, the excitement, fear and fascination with fire has remained. Presdee believes that individuals set fire in reaction to forced rationalism causing a contemporary culture of loneliness and loss of certainty. As a person matures, he encounters unpleasant social facts, mainly social inequality. Setting fire is then an important instrument to rebel against this culture of 'constraints and constrictions' making the world ordered, 'but unbearable to those who live within it'.<sup>5</sup>

Apart from the work of Presdee in the field of cultural criminology, arson has not received much attention in mainstream criminology. One of the mainstream criminological theories that has been applied to firesetting behaviour is the

---

2 Lilly, Cullen & Ball, 2014.

3 Presdee, 2005

4 Ibid., p. 74.

5 Ibid., p. 82.

routine-activities theory (RAT) by Cohen and Felson.<sup>6</sup> Despite criticism on RAT, especially regarding the individual motivation of offenders (see below), this theory is discussed more elaborately here because it is one of the few criminological theories in which arson-specific research exists.

### 2.1 General information on routine-activities theory (RAT)

Although not the first to focus on daily routine activities in criminology,<sup>7</sup> a routine-activity approach with respect to crime rate trends was first used by Cohen and Felson in an article published in 1979. Instead of focusing on offender characteristics, they emphasized the circumstances in which criminal acts were carried out. Cohen and Felson focused on direct-contact predatory criminal acts, which they defined as those violations in which someone intentionally takes or damages the property of another or damages a person, and in which there is direct physical contact between at least one offender and at least one targeted person or object.<sup>8</sup> Since 1960, crime rates in America had increased dramatically, although the social and economic conditions improved. To explain this paradoxical crime rate trend, Cohen and Felson referred to changes in the routine activities of everyday life. Routine activities were defined as ‘any recurrent and prevalent activities which provide for basic population and individual needs, whatever their biological or cultural origins’.<sup>9</sup> For instance work, school and social interaction are included in this definition. So ‘routine’ in this respect does not imply recidivism. According to Cohen and Felson structural changes in routine activity patterns potentially influence crime rates, because they affect the convergence in space and time of three minimal elements of direct-contact predatory violations:<sup>10</sup>

1. motivated offenders,
2. suitable targets, and
3. the absence of capable guardians.

The offender must have a criminal propensity and the ability to carry out that propensity. Furthermore, a person or an object must be present providing the offender with a suitable target. Finally, capable guardians must be absent for the violation to take place. These guardians are most often ordinary citizens and not police officers, who are very unlikely to be present at the time of the offence.<sup>11</sup> In short Cohen and Felson believed that changes in routine activities, like the increase in women working and the growing number of

---

6 Cohen & Felson, 1979.

7 With respect to victimization, routine activities are believed to be associated with the risk of victimization, as described in Hindelang, Gottfredson & Garofalo, 1978.

8 Cohen & Felson, 1979.

9 Ibid., p. 593.

10 Ibid.

11 Felson, 2002.

single household families, resulted in increased target suitability and decreased guardianship, thus resulting in more violations. Based on crime rates in relation to several different population characteristics, this belief was substantiated.<sup>12</sup> In later work, Felson broadened the scope of RAT to include crimes other than direct-contact predatory crimes only, declaring this theory applicable to all types of lawbreaking.<sup>13</sup> Borrowing from Hirschi's control theory, Felson proposed a fourth element that applies to predatory violations and plays a role in other types of crime, namely the absence of an intimate handler like a parent to exert informal social control.<sup>14</sup> This fourth element however did not seem to hold in subsequent literature on RAT.

Cohen and Felson's model is developed on a macro-level scale; it is aimed at explaining crime rate changes in a certain population at large. However, a routine activity approach can also be applied to more specific populations (at a meso level). This was demonstrated by Sheley, who applied a similar model to the purchase of stolen merchandise by students and found interactivity among elements of the criminal act.<sup>15</sup>

RAT has received criticism, especially targeted at the simple representation of crime, consisting only of three major factors. Social aspects, biological indicators and other factors concerning human behaviour are not included in this model.<sup>16</sup> Jeffery stated that this theory is only a description of criminal events, and does not provide an explanation. Furthermore, a study examining the ability of a routine activities approach to explain property victimization at an individual level, did not find strong empirical support for it.<sup>17</sup> Regarding the element of motivated offender, RAT does not pay attention to hidden desires, emotions and personal motives that underlie criminal behaviour. Despite this criticism, RAT offers a comprehensible framework for understanding why certain types of crime occur more often in certain areas.

In conclusion, RAT stipulates that a minimum of three elements of a criminal act (motivated offender, suitable target, and absence of capable guardians) must converge in time and space in order for a violation to occur.<sup>18</sup> More recently, Felson described these three elements as 'almost-always' elements of criminal acts in general. What is more, he came up with three 'often-important' elements that supplement these 'almost-always' elements. These are the presence of props to help commit the crime including weapons or tools, the presence of any camouflage that helps the offender avoid unwanted notice, and the presence

---

12 Cohen & Felson, 1979.

13 Felson, 1987.

14 Felson, 1986, 1987.

15 Sheley, 1983.

16 Jeffery, 1993.

17 Massey, Krohn & Bonati, 1989.

18 Felson, 1986.

of any audience that the offender wants to impress or intimidate.<sup>19</sup> How these elements interact in time and space will influence the criminal outcome.

## 2.2 Applicability of RAT to arson

RAT originally applied to direct-contact predatory criminal acts only.<sup>20</sup> Arson can be considered as such an offence. The arsonist intentionally damages a person or property of another, in which some form of direct physical contact with the target is necessary, because the arsonist must, at some point, be present to ignite the fire. However, since the broadening of the scope of RAT, it is applicable to all crimes. Therefore, one way or another, RAT can be applied to arson.

On a crime rate level, the percentage of unemployment, poverty, being of a specific ethnic i.e. African descent, and youthfulness are believed to influence criminal motivation in the US population.<sup>21</sup> Most of these characteristics are applicable to arsonists. Arson is related to a youthful age and arsonists are generally younger than other types of offenders.<sup>22</sup> It is estimated that half of all arsons to property, and a third of car fires in England and Wales are started by people aged 18 or younger.<sup>23</sup> Furthermore, based on different research, arsonists are generally described as young, single, unemployed, white males.<sup>24</sup> Because of unemployment issues, arsonists often have a low socio-economic status. However, research shows that arsonists are primarily white and not of African descent.<sup>25</sup> RAT describes criminal motivation on a population level, in Sections 3 and 4 more attention will be paid to individual motivation.

If according to this theory, a person is motivated to set a fire, there must be a suitable target available and capable guardians must be absent. With respect to the suitable targets, research shows that fires are most often targeted at objects instead of directly aimed at persons.<sup>26</sup> However, these objects can have personal significance, for instance when the fire is set to the car of an adulterous ex-lover. When fires set to objects with a personal meaning are defined as person-targeted, about one third of fires are targeted at a person.<sup>27</sup> The objects which appear to be the most likely targets of arson are homes, vehicles, and to a smaller extent public buildings.<sup>28</sup> Arsonists often set fire to their own home or

---

19 Felson, 2002.

20 Cohen & Felson, 1979.

21 Stahura & Hollinger, 1988.

22 Anwar et al., 2011; Gannon & Pina, 2010; Rix, 1994; Schoenmakers, Hoekendijk & Van der Kruk, 2010.

23 Canter & Almond, 2002.

24 Barker, 1994; Dalhuisen & Koenraadt, 2012; Davis & Lauber, 1999; Dickens & Sugarman, 2012; Räsänen, Hakko & Väisänen, 1995; Rice & Harris, 1991; Ritchie & Huff, 1999; Rix, 1994; White, 1996.

25 Hollin et al., 2013; Veen et al., 2011.

26 Ritchie & Huff, 1999.

27 Dalhuisen & Koenraadt, 2014.

28 Ibid.; Ritchie & Huff, 1999; Rix, 1994.

to the home of a friend or relative, making it an easily accessible target. What is more, vehicles are generally also easy to get to, since cars are often parked outside. Setting fire to the own home is consistent with RAT. Besides the own residence, research shows that arsonists often set fire to other places where they perform routine activities, like their hometown, the workplace, residences of relatives and other places close to their home.<sup>29</sup> However, houses are normally occupied, people crowd the streets and public buildings are, as the term indicates, public. So with the possibility of people being present, the absence of capable guardians is not guaranteed. However, supposedly to counteract this, arsonists most often commit their crimes at night when most people are asleep and the risk of guardians being present is lowest.<sup>30</sup>

With respect to the three 'often-important' elements, props are frequently present and arsonists make use of the properties of a crime scene. Although arsonists in most cases bring matches or lighters, they often use them to set fire to flammable materials they find present at the scene, like wood, paper or pieces of cloth.<sup>31</sup> Furthermore, it can be argued that arsonists preferably act in the dark hours of night to use the darkness as a means of camouflage. In the dark they can move around unnoticed. This is consistent with the hidden nature of the offence. However, arsons committed by those under the influence of a psychosis or with other mental disturbances often take place in broad daylight,<sup>32</sup> indicating that in those instances a person is unable to make the rational choices that RAT implicitly assumes. The last 'often-important' element only plays a role in some types of arson. Although most arsons are committed by a single perpetrator,<sup>33</sup> vandalism arsons, politically driven and riot arsons are committed in groups in which peer pressure comes into play.<sup>34</sup>

Stahura and Hollinger evaluated RAT using 1980 arson rate data for 676 American suburbs. They operationalized the motivated offender element by looking at percentage of poor, percentage of black, percentage of unemployed and percentage of youth. The 'suitable targets' or opportunities for crime were operationalized as percentage of multiple housing structures, percentage of old housing and number of commercial/industrial structures. 'Guardianship' was measured by percentage of female labour force participation and – unlike Cohen and Felson – police expenditure per capita and police employment. Results showed that when all three preconditions for crime were present in a suburb at a particular time, arson rates were likely to be higher.<sup>35</sup>

---

29 Yesavage et al., 1983.

30 Schoenmakers, Van Wijk & Van Ham, 2012; Yesavage et al., 1983.

31 Ritchie & Huff, 1999; Santtila, Fritzon & Tamelander, 2004.

32 Yesavage et al., 1983.

33 Molnar, Keitner & Harwood, 1984; Santtila, Fritzon & Tamelander, 2004.

34 Moll, 1974.

35 Stahura & Hollinger, 1988.

### 2.3 Summary

Arson is a particular offence that does not fit well into existing subdivisions of crime. On an offence level, similarities are seen with both violent and property offences, depending on the type of arson committed. However, on an offender level, arsonists appear to be more similar to property offenders than to violent criminals. In criminological textbooks, arson is often grouped under the heading of property offences. Because no specific criminological theories explaining arson exist, more general theories are used to explain this behaviour.

From a cultural criminological perspective, fire has a cultural meaning resulting in strong instinctive and emotional responses to and beliefs regarding fire. In our contemporary culture that is strongly structured, a person can experience feelings of uncertainty and loneliness. Fire can then be used as a means of rebellion against this ordered world into which one does not fit well.<sup>36</sup> The Routine Activity Theory is more elaborately discussed, because for this theory arson-specific research exists, both on a macro level (all arsonists) and on a meso level (subgroups of the population). In general, an arsonist has a criminal inclination to set fire, finds a suitable target within his range of routine activities and commits his act secretly to avoid the presence of capable guardians. Specific studies like that by Stahura and Hollinger confirm this.<sup>37</sup>

RAT leaves one question largely unanswered, both in general and with respect to arson. This theory focuses primarily on the risk of victimization on a macro level, and does not address the question who is at risk of becoming an offender or why a certain individual is inclined to set fire. Osgood and colleagues describe this lack of attention for the nature of the motivation of the offender.<sup>38</sup> What is more, although many different studies have been conducted on RAT on different sociological levels, at different locations, with different crimes and for trends over time, the variables creating a 'motivated offender' have only minimally been studied.<sup>39</sup> Mostly, this motivated offender is treated as a given, but it remains unclear what distinguishes the arsonist from other persons who might be present at the scene and thus experience the same suitable target and absence of capable guardians. In later work, Felson changed the term 'motivated offender' to 'likely offender',<sup>40</sup> which reflects the rational choice concept that is embedded in RAT to fill the void regarding criminal motivation.<sup>41</sup> In order to look at individual motivation, in the next section, psychological theories are described which might explain why a certain individual develops an inclination to set fire. It will become clear that individual motivation often is non-rational

---

36 Presdee, 2005.

37 Stahura & Hollinger, 1988.

38 Osgood et al., 1996.

39 Sasse, 2005.

40 Felson, 1998.

41 Brunet, 2002.

in nature, e.g. when people set fire out of a sudden rage without rationally thinking about the consequences or possibilities of getting caught.

### 3 A psychological approach: single-factor explanations

To provide more insight into the individual motivation that is not properly addressed in RAT, in this and the following section psychological explanatory models are discussed. This section explicitly looks at single-factor explanations to answer the question why a person becomes an arsonist. The general single-factor models discussed here are chosen because of the consensus in arson literature about their validity.<sup>42</sup> In addition one other model that in my opinion gives an important explanation for arson which I have labelled the addiction model is elaborated on here.

#### 3.1 General single-factor models

Several models are often brought up when firesetting behaviour is explained theoretically. Gannon and Pina for instance discuss explanations from a psychoanalytical, social-learning and biological perspective.<sup>43</sup> Other writers also stress the importance of psychoanalysis, social learning and biology in explaining arson.<sup>44</sup>

An early influential explanation of arson was based on Freud's psychoanalysis. Freud believed that firesetting behaviour stemmed from unconscious sexual desires, in particular of homosexual origin.<sup>45</sup> Freud believed that extinguishing a fire by urinating on it represented a sexual act with another man, 'an enjoyment of masculine potency in homosexual competition',<sup>46</sup> as he called it. More in general, he stated: 'The warmth radiated by fire evokes the same kind of glow as accompanies the state of sexual excitation, and the form and motion of the flame suggests the phallus in action'.<sup>47</sup> Other writers elaborated upon this belief that arson had a sexual background. Grinstein for instance hypothesized that firesetting originated from libidinal impulses, stressing the fact that these libidinal impulses are pre-genital as well as urethral.<sup>48</sup> Influenced by psychoanalytic ideas, observational data and case studies, in early years arson was viewed as a sexual offence.<sup>49</sup> However, within the psychoanalytic community no consensus existed with respect to this sexual root of arson.<sup>50</sup>

---

42 Gannon & Pina, 2010.

43 Ibid.

44 Barnett & Spitzer, 1994; Glancy et al., 2003.

45 Freud, 1930 and 1932.

46 Freud, 1930, p. 48.

47 Freud, 1932, p. 10.

48 Grinstein, 1952.

49 Gold, 1962; Lewis & Yarnell, 1951; Lewis, 1965; Mavromatis & Lion, 1977.

50 Barnett & Spitzer, 1994.



Other psychoanalytical explanations for firesetting behaviour focused on fixation at the oral phase of development,<sup>51</sup> and unconscious aggression caused by the child accidentally witnessing parental intercourse.<sup>52</sup> A sexual explanation for firesetting was invalidated in other research and is currently generally rejected.<sup>53</sup>

Other single-factor explanations that are often mentioned perceive arson as a learned behaviour. From a social-learning perspective, firesetting is explained as originating from modelling, imitation and reinforcement.<sup>54</sup> In particular, firesetting is linked to modelling of aggression and inadequate social skills.<sup>55</sup> As Vreeland and Levin importantly point out, vicarious, observational learning of firesetting behaviour through modelling is supported by evidence suggesting that arsonists grow up in environments where fire is more prevalent (e.g. rural settings) and fathers of arsonists have occupations involving fire exposure (e.g. firemen).<sup>56</sup> Gannon and Pina describe additional evidence for this modelling process, suggesting that arsonists originate from families with a history of firesetting and are raised in environments where fire is used as a means of punishment.<sup>57</sup> From a social-learning viewpoint, Vreeland and Levin give two possible reasons why arsonists set fire. First, firesetting has immediate rewarding consequences for the arsonist. Fire holds sensory stimulating properties, and furthermore, it results in commotion through the fire fighting and a crowd of spectators, and if the person has or is believed to have participated in alarming or putting out the fire he or she receives praise and recognition from the community. Second, a person may set fire because they have learned to avoid direct interaction with other people because of prior aversive experiences in social contact. So, in case of an interpersonal problem, indirect aggressive behaviour such as firesetting is favoured over socially acceptable direct ways to respond, like talking about it and working through a conflict together.<sup>58</sup>

On a biological level, several factors are associated with the act of firesetting.<sup>59</sup> Regarding brain chemistry, evidence suggests a relationship with neurotransmitter anomalies.<sup>60</sup> Based on these findings, neurotransmitter abnormalities, and in particular low serotonin activity, can in part explain firesetting behaviour. With respect to metabolism processes, studies show a relationship between (recidivistic) firesetting and hypoglycaemic tendency (low

---

51 Kaufman, Heims & Reiser, 1961.

52 Arlow, 1978; Grinstein, 1952.

53 Barnett & Spitzer, 1994; Hurley & Monahan, 1969; Quinsey, Chaplin & Upfold, 1989.

54 Bandura, 1977.

55 Glancy et al., 2003.

56 Vreeland & Levin, 1980.

57 Gannon & Pina, 2010.

58 Vreeland & Levin, 1980.

59 See also Koenraadt, Dalhuisen & Nijman, 2012.

60 Virkkunen et al., 1987; Virkkunen et al., 1989; see also Koenraadt, Dalhuisen & Nijman, 2012.

glucose levels) suggesting a role of glucose in the aetiology and preservation of arson.<sup>61</sup> On the level of brain anatomy there is some case evidence linking arson and pyromania to (left) frontal lobe dysfunction,<sup>62</sup> and left internal capsule damage due to lacunar stroke.<sup>63</sup>

### 3.2 *The addiction model*

In line with the biological models, another model on a more neuropsychological level must be mentioned here. This model I will refer to as the addiction model. Early writers on pyromania already noted the link between firesetting and alcohol, with firesetters often being intoxicated at the time of the offence and having other alcohol-related problems.<sup>64</sup> This association is also found in recent literature, for both men and women.<sup>65</sup> Based on these and other findings, firesetting might simply be caused by alcohol abuse, but it is also possible that alcohol abuse and arson share common underlying factors. In this respect, I would like to devote attention to another possible underlying factor: addiction susceptibility.

Studies on impulse control disorders, like pyromania, pathological gambling and kleptomania, show similarities with addictive disorders. Holden therefore describes disorders in impulse control (including pyromania) as behavioural addictions. In pathological gambling for instance, tolerance, craving and highs are seen.<sup>66</sup> Similarities between pyromania and addictive disorders also exist, like the experience of craving and tolerance that builds up reducing the pauses between different acts of arson.<sup>67</sup> Grant and Potenza even argue that behavioural addictions and other addictions share the same core elements:

- a. repeatedly or obsessively being concerned with the behaviour despite adverse consequences,
- b. reduced control over the problematic behaviour,
- c. a state of craving prior to the exercise of the behaviour, and
- d. a hedonic state during its execution.<sup>68</sup>

Besides similarities on a phenomenological level, there are also multiple neurobiological and genetic parallels.<sup>69</sup> The neurotransmitter dopamine seems to play a role in the impulsivity of disorders like pyromania and addictive disorders. A parallel can be drawn with other impulse control disorders like

---

61 Virkkunen, 1984; Virkkunen et al. 1987; Virkkunen et al., 1989.

62 Calev, 1995; Grant, 2006; Kanehisa et al., 2012.

63 Bosshart & Capek, 2011.

64 See for instance Schmid, 1914.

65 Boden, Fergusson & Horwood, 2012; Hoertel et al., 2011; Vaughn et al., 2010.

66 Holden, 2001.

67 Grant, Brewer & Potenza, 2006; Grant & Kim, 2007.

68 Grant & Potenza, 2006.

69 Brewer & Potenza, 2008.

pathological gambling. There is strong evidence for a neurobiological link between pathological gambling and substance use disorders (biochemically, from neuro-imaging studies, genetic studies and treatment).<sup>70</sup> Furthermore, a case report of treatment with an opiate antagonist showed results in reducing the urge to set fire.<sup>71</sup>

Based on the foregoing, firesetting behaviour, in particular repetitive arson, shows strong resemblances with addictive disorders, especially alcohol use disorders. From an addiction model perspective, arson can be explained as a behavioural addiction.

### 3.3 Summary

There are several single-factor models that can be used in explaining arson. The single-factor explanations for arson described in this section are not exhaustive, but the most relevant models in current arson literature are discussed. General models that deserve attention are the psychoanalytic perspective describing firesetting as resulting from unconscious (sexual) desires, the social-learning paradigm which views arson as a learned behaviour and biological factors linked with firesetting behaviour. A more specific model is the addiction model of arson, drawing a parallel with addictive disorders and describing arson as a behavioural addiction. Although most single-factor explanations are empirically validated, no single explanation can completely account for the complexity of firesetting behaviour. Therefore, explanatory models of arson that take into account multiple factors will be discussed below.

## 4 A psychological approach: multi-factor explanations

In the previous section, explanations of arson based on single-factor models have been discussed. These explanations do not seek to be exhaustive and there is consensus that arson, like all behaviour, cannot be explained by a single factor. Instead, multiple factors must be taken into account in order to explain this behaviour more comprehensively. Multi-factorial theories have a comprehensive view on the development of arson. As the term indicates, multiple characteristics both of the individual and their (social) environment are taken into account. Within this comprehensive framework, multi-factorial psychological models can provide insight into the development, and in some cases maintenance, of an inclination to set fire in an individual.<sup>72</sup> So, from a psychological viewpoint, these models can provide an answer to the question how a person becomes a so-called 'motivated offender' and why that person

---

70 Grant & Potenza, 2006; Grant, Kim & Hartman, 2008.

71 Grant, 2006.

72 Doley, 2009.

persists in being one. Two major arson-specific multi-factorial models are discussed in the following subsections.

#### 4.1 *Functional analysis model*

One multi-factorial psychological model that broadens the understanding of the development and maintenance of an inclination to set fire is the functional analysis model of Jackson, Glass, and Hope.<sup>73</sup> For the basic characteristics of functional analysis theory, Jackson and colleagues refer to the work of Slade, and Owens and Ashcroft.<sup>74</sup> Owens and Ashcroft describe the applicability of functional analysis to clinical psychology.<sup>75</sup> In essence, functional analysis deals with the specific factors which contribute to and maintain problematic behaviour for a specific individual.<sup>76</sup> It is believed that all behaviour must serve a purpose to an individual on some level; otherwise it would not be exhibited. The behaviour is seen as adaptive to the environment and therefore meaningful relationships between the environment and the behaviour are of interest.<sup>77</sup> The behaviour is perceived as a function of preceding events, also called antecedent events, and consequences which serve as reinforcers and maintainers.<sup>78</sup> This means that reinforcers are consequences that strengthen the behaviour. They are called *positive* when they result in a certain consequence that is favourable to a person, whilst *negative* reinforcers involve the removal of an aversive situation and therefore also increase or maintain the behaviour. Within the functional analytic paradigm, Jackson and colleagues describe several antecedent events and consequences which they believe to interact in several complex ways to account for recidivistic arson. For their theory, they rely on clinical experience with firesetters, previous research on characteristics of arsonists and principles of learning theory.<sup>79</sup> Arson is believed to be preceded by the following antecedent events:

1. psychosocial disadvantage: arsonists often have an adverse social background as well as personal inadequacies, which mutually affect one another,
2. dissatisfaction with life and the self: research shows a high incidence of depression and self-esteem issues are present; furthermore, Jackson and colleagues describe their clinical experience with arsonists indulging in fantasies in which they are more heroic and important,
3. ineffective social interaction: arsonists in general experience social isolation and social rejection, and show poor social skills,

---

73 Jackson, Glass & Hope, 1987.

74 Owens & Ashcroft, 1982; Slade, 1982.

75 Owens & Ashcroft, 1982.

76 Orlemans, Eelen & Hermans, 2007.

77 Sturmey et al., 2007.

78 Jackson, Glass & Hope, 1987.

79 See also Gannon & Pina, 2010.

4. specific psychosocial stimuli: this antecedent deals with specific factors which direct arsonists to use fire, like previous experiences with fire and the inhibition of alternative behaviour,
5. triggering stimuli: the inclination to set fire must be triggered, internally by an emotionally significant event which causes conflict between a desire to change and the inability to do so and externally by the opportunity which arises.

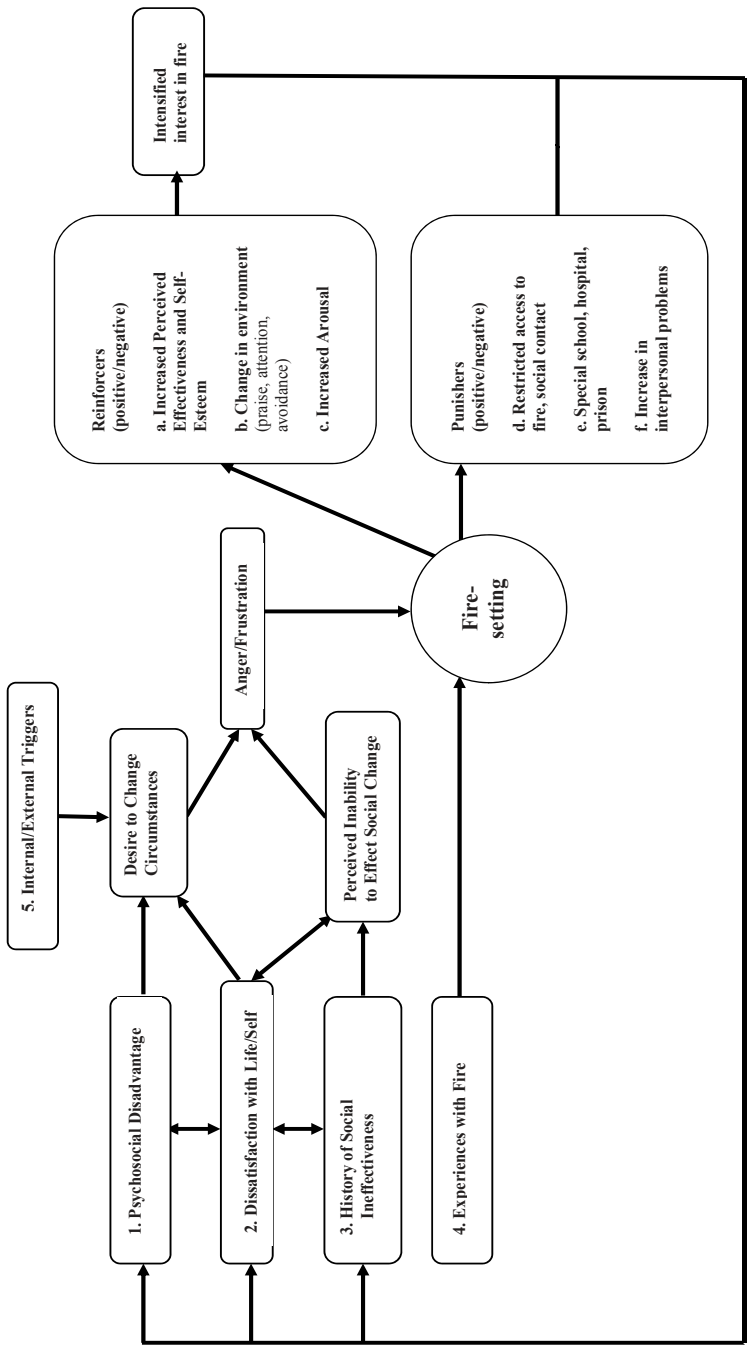
After the firesetting behaviour takes place, numerous consequences can arise which play a significant role in the persistence of arson. First, Jackson and colleagues hypothesize that fire play results in (a) increased social effectiveness; with the fire play, the child gains attention and recognition of distant and rejecting peers and parents, intensifying the parent-child relationship (positive reinforcement). Furthermore, the child may be labelled as emotionally disturbed, which label might serve as protection from stressful situations like bullying or family difficulties, resulting in (b) a changed environment (negative reinforcement). Furthermore, fire is intrinsically arousing for children (positive reinforcement). This arousal is (c) increased and maintained in adults because of the dramatic effects an arsonist generates by setting a fire and because once one is forced to avoid fire and firesetting materials, satiation to the arousing properties of fire cannot be achieved.

However, aside from reinforcers, punishers that might exaggerate the antecedent problems are also important. After the child is caught setting fire, caregivers often react punitively and (d) the use of fire is likely to be restricted (negative punishment). As a result, opportunities to learn how to deal with fire and fire materials in an appropriate way are diminished greatly. It is possible that the firesetter is (e) placed in a special institution, like a special school, prison or hospital (positive punishment). These factors might lead to (f) increased interpersonal problems, like feelings of rejection, low self-esteem and (perceived) absence of self-efficacy (positive punishment).<sup>80</sup> In Figure 1 the antecedents and behavioural consequences with their complex interactions are depicted.

---

80 Jackson, Glass & Hope, 1987.

Figure 1. The diagrammatic formulation of recidivistic arson by Jackson et al., 1987.



Many hypothesized interrelationships between antecedents, behaviour and consequences are supported empirically.<sup>81</sup> With respect to the psychosocial disadvantages, studies show that arsonists come from dysfunctional families often characterized by absent and/or abusing parents.<sup>82</sup> What is more, they have problems with interpersonal skills, are shy and unassertive.<sup>83</sup> Low self-esteem is often present, in which arson can be used as a means of exerting control over one's environment.<sup>84</sup> Nevertheless, the theory as a whole has not been the subject of thorough study, and is therefore not yet proven to be evidence-based.<sup>85</sup> However, the functional analysis theory of recidivistic arson provides a multi-faceted framework for a deeper understanding of arsonists and has proven its value in clinical practice.<sup>86</sup>

#### 4.2 *The multi-trajectory theory of adult firesetting*

A more recent multi-factorial psychological theory explaining the act of arson is the multi-trajectory theory of adult firesetting (M-TTAF) introduced by Gannon and colleagues.<sup>87</sup> The M-TTAF consists of two different levels, or tiers. The first tier concerns the overall theoretical framework of the theory; the second tier describes prototypical trajectories leading to firesetting. The first tier is not very dissimilar to the model of Jackson and colleagues.<sup>88</sup> Different factors and mechanisms on various levels and their interactions are described at this tier in order to explain firesetting behaviour (see Figure 2).

The first element is the distal *developmental context*. In this context a disadvantageous *caregiver environment* is a key aspect. This environment influences *learning*, like fire experiences but also attitudes and values and coping strategies. Furthermore, *cultural forces*, like attitudes towards fire, also influence social learning. The *biology and temperament* of a specific person is also of importance, cognitive impairments for instance can play a role in firesetting behaviour.

---

81 Gannon, 2010; Gannon et al., 2012.

82 O'Sullivan & Kelleher, 1987; Rix, 1994; Stewart, 1993.

83 Harris & Rice, 1996; Rice & Chaplin, 1979.

84 Vreeland & Levin, 1980.

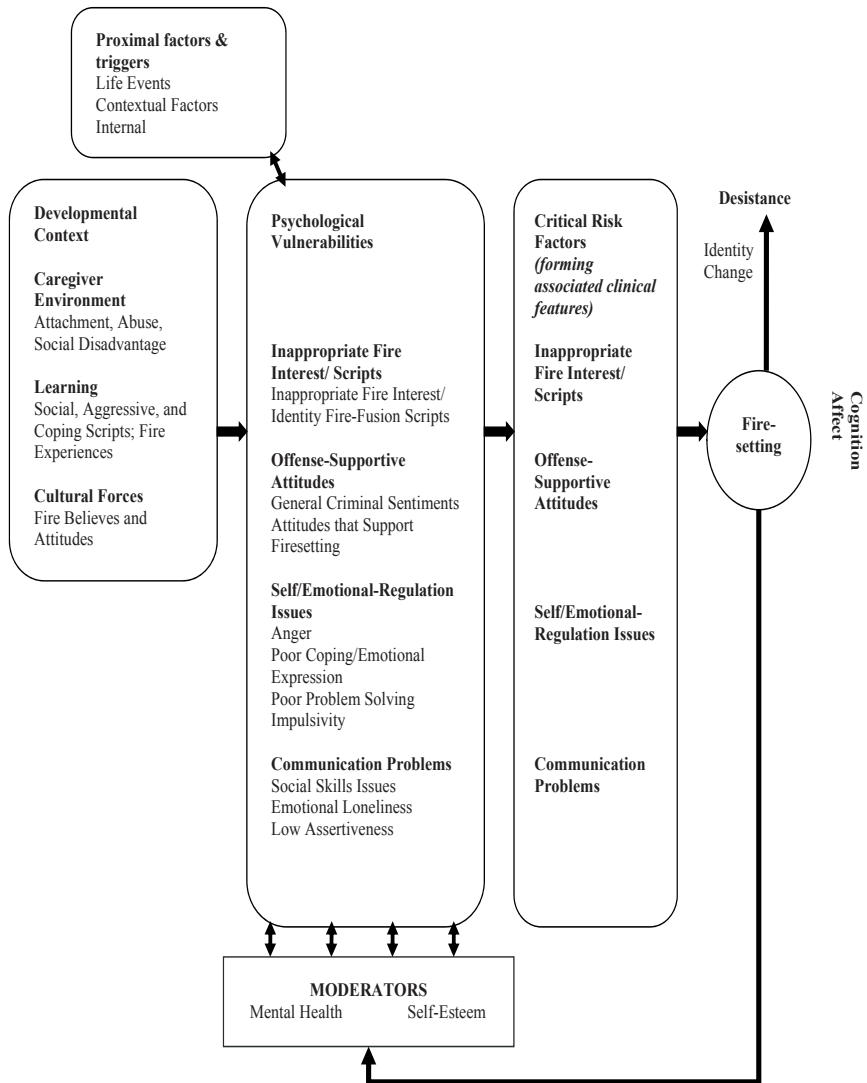
85 Gannon & Pina, 2010.

86 Swaffer, Haggett & Oxley, 2001; Taylor et al., 2002.

87 Gannon et al., 2012.

88 Jackson, Glass & Hope, 1987.

Figure 2. A summary of the first tier of the M-TTAF by Gannon et al., 2012



The second element consists of *psychological vulnerabilities*. Based on research literature, existing theoretical explanations and clinical experience, four main psychological vulnerabilities are included that are likely to be associated with firesetting: (1) inappropriate fire interest/scripts, based on the positive reinforcing elements fire can have for a person and inappropriate fire learning resulting in distorted scripts regarding fire (e.g. fire-coping scripts and aggression-fire fusion scripts); (2) offence-supportive attitudes, like believing



that fire is harmless or seeing oneself as authorized to set a fire; (3) self-emotional regulation issues, like impulsivity and poor coping skills; and (4) communication problems, demonstrated by insufficient social skills, isolation and unassertiveness.

How these psychological vulnerabilities result in so-called *critical risk factors* (the third element), facilitating firesetting, is explained by both *proximal factors and triggers* as well as *moderators*. Proximal factors and triggers can interact with the vulnerabilities and consist of life events, contextual factors, emotions or cognitions, but also biology and culture. This interaction is *moderated* by the mental health and self-esteem of a person. Gannon and colleagues conceptualize mental health and self-esteem as key moderators that dictate the intensity with which a proximal trigger reflects, and interacts with psychological vulnerabilities to create the critical risk factors.<sup>89</sup>

The M-TTAF also devotes attention to factors acting as *reinforcers* of the behaviour, hypothesizing that reinforcement is of critical importance in the maintenance of firesetting. Fire can result in positive consequences like sensory stimulation, acceptance by peers, and financial gain which all result in positive affect. But the negative consequences like rejection from society (punishment) can also result in upholding the behaviour, by worsening psychological vulnerabilities. Apart from factors maintaining the behaviour, Gannon and colleagues also incorporated elements with regard to desistance in their model. They hypothesize that increased feelings of personal control, hope, and strong social ties will positively influence desistance.

The second tier of the M-TTAF describes five prototypical trajectories associated with firesetting, based on literature and experience.<sup>90</sup> The aim of this second tier is to provide clinicians with helpful prototypes, increasing the utility of the theory for clinical practice. The following trajectories are described:

1. **Antisocial cognition:** for these firesetters antisocial cognition, scripts, and values are the most important critical risk factor. These cognitions and scripts are criminal in general and not specifically focused on fire. Therefore, fire interest and inappropriate fire scripts are unlikely, but they show other critical risk factors like poor self-control. These firesetters are usually young when they start their criminal career and are often diagnosed with Conduct or Antisocial Personality Disorder. Fire is usually set for instrumental reasons, like gaining financially.
2. **Grievance:** firesetters following this path are hypothesized to have problems with self-regulation, aggression, anger, and hostility. Communication problems are common as well as the linking of scripts involving aggression and fire. Fire is seen as an instrument and used as such, often out of revenge or retaliation temporarily improving self-esteem and self-efficacy.

---

89 Gannon et al., 2012.

90 See also Ó Ciardha & Gannon, 2012.

3. Fire interest: firesetters that follow this trajectory are hypothetically fascinated by fire. Fire may be used as a means of coping with adverse situations and emotions and firesetting is supported by cognitions and attitudes. Furthermore, impulsivity is believed to be present.
4. Emotionally expressive/need for recognition: for firesetters that follow this trajectory communication problems are the primary critical risk factor. In the emotionally expressive subtype, firesetters in addition have emotional regulation issues (poor problem solving skills, impulsivity). If the context becomes overwhelming, these persons feel unheard and hopeless, expressing their need by using fire as a message or as a cry for help. Firesetters who act out of the need for recognition are hypothesized to also use fire as a communication tool, but acknowledgement is sought more secretly with fires that are planned so one can remain undetected. Sometimes the firesetter gains positive attention by playing the part of hero (for instance by saving people).
5. Multi-faceted: The last trajectory concerns firesetters whose key criminal risk factors are offence-supportive attitudes (similar to the antisocial cognition trajectory) combined with fire interest. What is more, self-emotional regulation skills are believed to be poor and communication problems exist. It is hypothesized that firesetters following this trajectory experienced adverse conditions growing up. Because of the hypothesized antisocial sentiments and a long history of crime, firesetting is believed to be instrumental and repetitive, without regard for the consequences to others.

Although the first tier of the M-TTAF is quite similar to the multifactor models by Jackson and colleagues,<sup>91</sup> the model includes some differences. Gannon and colleagues note the following: first, their model tries to explain a broader variety of firesetting behaviours, like firesetting and self-harm; second, their model also includes factors regarding desistance; third, M-TTAF makes a distinction between distal and proximal variables;<sup>92</sup> and finally, the model provides prototypical firesetting trajectories (the second tier). What is more, this theory is specifically aimed at adult firesetting instead of firesetting by children or adolescents.<sup>93</sup> Because the M-TTAF is so recent, especially the five trajectories are provisional and empirical support for both the theory and the trajectories is required and prospective.

---

91 Jackson, Glass & Hope, 1987.

92 Distal factors involve early developmental experiences and genetic traits (e.g. parental attachment, childhood abuse), whilst proximal factors are more direct and can act as triggers (e.g. psychological states and situations).

93 Gannon et al., 2012.

### 4.3 Summary

Two multifactorial models that explain firesetting on an individual level have been discussed. The functional analysis theory by Jackson and colleagues perceives firesetting as a behaviour that serves a purpose for a person and pays attention to the rewarding and punishing properties of antecedents and consequences of that behaviour.<sup>94</sup> In line with this model, an integrative, 'theory knitting' model was recently introduced by Gannon and colleagues.<sup>95</sup> In short, the M-TTAF hypothesizes that a combination of developmental factors, biological factors/temperament, cultural factors, social-learning factors, and contextual factors result in the development of psychological vulnerabilities, which in turn influence critical risk factors. Because distinct different psychological vulnerabilities predominate for different types of firesetters, different trajectories that prompt an individual to set fires are discussed.<sup>96</sup> The models discussed here look at different factors that can explain why individuals set fire. In the next section, the focus will specifically be on disordered offenders only.

## 5 A psychopathological approach: disordered offenders

The aforementioned multifaceted psychological models explaining firesetting encompass multiple elements associated with mental problems in the person. For instance, the models look at psychosocial disadvantage, personality dysfunctions and lack of adequate coping skills. However, these psychological models are not tailored to disordered offenders in particular. Yet, arsonists often have a psychiatric history or current psychiatric diagnosis.<sup>97</sup> This mental disorder can play a part at the time of the offence, perhaps even induce it (see Section 5.2). That is why it is important to also look at the subpopulation of disordered offenders to gain deeper understanding in why some persons set fire.

Many studies on mental disorders in arsonists are biased in the sense that the populations are not representative, for instance in some studies only hospitalized firesetters are the subject of research. Furthermore, often a distinction is made between pathological or disordered and non-pathological or criminal firesetters, focussing specifically on the disordered population. This makes it difficult to establish the more general rate of mental illness in arsonists. However, criminal firesetters and disordered firesetters do not seem to differ very strongly with respect to mental illness. When offenders who set their fire(s) for financial reasons were excluded from a sample of imprisoned

---

94 Jackson, Glass & Hope, 1987.

95 Gannon et al., 2012.

96 See also Ó Ciardha & Gannon, 2012.

97 Puri, Baxter & Cordess, 1995; Ritchie & Huff, 1999; Rix, 1999.

firesetters, and the remaining criminal arsonists were compared with firesetters residing in a mental hospital, the criminal arsonists had many characteristics in common with the disordered arsonists and in general these two groups suffered from quite a few psychological disturbances.<sup>98</sup> Although it is difficult to gain any precise insight into the rate of mental illness amongst firesetters, in general it can be stated that mental disorders are common.<sup>99</sup>

### 5.1 *Mental disorders associated with arson*

A mental disorder directly associated with firesetting is pyromania. The DSM-5 classifies pyromania as an impulse control disorder. Given the very stringent diagnostic criteria, especially the exclusion criteria, a diagnosis of pyromania is rare. Although the media might give the impression that in cases of arson a pyromaniac is at work, arson is hardly ever committed by persons suffering from pyromania.<sup>100</sup> If a person is diagnosed with pyromania, this means that he (or she) has a fascination with fire and shows signs of arousal before the act, while setting the fire brings gratification and is repeated. Firesetting is the main characteristic of this disorder; hence the diagnostic criteria form the explanatory framework.

Although not directly including firesetting symptoms in its diagnostic criteria, schizophrenia has strong ties with firesetting. A study examining mental health records and/or prison files from 283 arsonists in the United States of America shows that 90% of arsonists had a psychiatric history, and schizophrenia was the major mental illness in 26% of the cases.<sup>101</sup> More recently, a Swedish study showed that individuals with schizophrenia and other types of psychoses have a significantly increased risk of a conviction for arson. This study, conducted by Anwar and colleagues compared all convicted arson offenders in Sweden (N = 1689) with a random control sample of the general population (N = 40 560). This comparison showed that convicted arsonists were more likely to be diagnosed with schizophrenia or other psychoses. This relationship may be explained by the direct influence that a psychotic state can have, inciting a person to set fire (see also Section 5.2).<sup>102</sup>

Another group of mental disorders more frequently associated with firesetting are personality disorders, and especially antisocial personality disorder.<sup>103</sup> In a study by Rix of 153 arsonists who were referred to him for pre-trial psychiatric assessment, he diagnosed 83 of them with a personality disorder, of which

---

98 O'Sullivan & Kelleher, 1987.

99 Barnett & Spitzer, 1994.

100 Koenraadt, Dalhuisen & Nijman, 2012; Plinsinga, Colon & De Jong, 1997; Ritchie & Huff, 1999.

101 Ritchie & Huff, 1999.

102 Anwar et al., 2011.

103 Barnett & Spitzer, 1994; Hoertel et al., 2011; Ritchie & Huff, 1999.

19 had an antisocial personality disorder.<sup>104</sup> A study of 72 arsonists that were forensically assessed in the pre-trial period in the Netherlands between 1950 and 2010, showed that more than half of the arsonists examined had a history of pathological personality traits. In addition, in 10% of the cases one or more personality disorders had been present in the past.<sup>105</sup> In line with the multi-factorial theories described in Section 4, personality disorders may contribute to firesetting in several ways. Several personality traits can predispose a person to firesetting, *inter alia* poor self-regulation, low self-esteem, and antisocial sentiments.

A different disorder that deserves attention in this respect is alcohol abuse. Arsonists frequently show problems with alcohol.<sup>106</sup> A study using data from the national epidemiologic survey on alcohol and related conditions (NESARC) of non-institutionalized residents of the United States aged 18 years and older, compared 309 male firesetters with 17 672 male non-firesetters and 98 female firesetters with 23 880 female non-firesetters. Results showed that both male and female firesetters significantly showed more alcohol use disorders than non-firesetters.<sup>107</sup> And in the study by Ritchie and Huff alcohol dependence with 26% was the most frequent primary diagnosis given.<sup>108</sup> Intoxication with alcohol at the time of the offence is also common, with percentages ranging from 35% even up to 100%,<sup>109</sup> although the study in which all arsonists were intoxicated had a small sample size of 34.<sup>110</sup> Overall, alcohol problems are associated with the act of arson. This association can be indirect, i.e. alcohol dependence being a reflection of problems with the self and the environment in general, but also direct when alcohol acts as a trigger. Alcohol can have triggering effects; whilst intoxicated, arsonists might feel more confident and might lose control over their actions. The fear of being caught and the rational thought process no longer overrule the person, and long-held ideas about fire and arson might surface. Research on female arsonists shows that they have more psychiatric diagnoses than men.<sup>111</sup> They are more frequently diagnosed with depression and psychosis, and self-harm is also more common.<sup>112</sup> Studies of female arsonists in prison also show that they often suffer from behavioural disorders, have a high prevalence of personality disorders, and a history of self-harm and suicidal thoughts is frequent.<sup>113</sup>

---

104 Rix, 1994.

105 Dalhuisen & Koenraadt, 2012.

106 Labree et al., 2010; Lindberg et al., 2005; O'Sullivan & Kelleher, 1987; Puri, Baxter & Cordess, 1995; Räsänen, Hakko & Väisänen, 1995; Repo et al., 1997.

107 Hoertel et al., 2011.

108 Ritchie & Huff, 1999.

109 Jayaraman & Frazer, 2006; Lindberg et al., 2005; Ritchie & Huff, 1999; Rix, 1994.

110 Jayaraman & Frazer, 2006.

111 Dickens et al., 2007.

112 Rix, 1994.

113 Coid, Wilkins & Coid, 1999.

## 5.2 *Pathologically motivated arson*

From the above, it is clear that in arsonists mental disorders can be present and of influence at the time of the offence. In this section, the most direct form of influence a mental disorder can have on firesetting will be discussed. In some cases fires are set as a direct result of a mental disorder, because the inclination to set fire is caused by the mental disorder. These pathologically motivated arsons are caused by several mental illnesses. In his classification of arson by motive, Geller gives the following list of mental disorders associated with arson: disorders of thought or perception (delusions, hallucinations), disorders of mood (depression, mania), disorders of judgment (development disorders, dementia, psychoactive substance-induced), disorders of impulse control (intermittent explosive disorder, pyromania), and communicative arson.<sup>114</sup>

From Section 5.1 it follows that psychotic disorders have a link with arson. Several reviews conducted in the early 1990s even explain firesetting as a direct result of a disorder of thought or perception, or affective disturbances.<sup>115</sup> Psychosis-induced arson is the most notable pathologically motivated type of arson. Schizophrenia and other psychotic disorders can cause hallucinations and delusions that can directly incite a person to set fire. For instance, a person can continuously be harassed by persuasive voices telling him or her to set fire to a particular object (command hallucinations). To silence these often unpleasant and irritating voices, the command can be followed. Another possible way in which psychosis induces arson is by certain delusions or faulty beliefs. One man for instance believed that Muslims lived in the walls of his apartment. Startled by that delusion, he tried to smoke them out, setting fire to his apartment in the process.

Affective disorders can also directly influence the act of arson. Most often this influence is seen in cases where arson is used as a means of suicide. For instance, a person sets fire to their own home, perhaps by turning on the stove, wanting to end their life in the blaze. This pathological motive of suicide appears to be more common amongst women. Parasuicide is significantly more often seen in women than in men, as is shown by a study on 167 adult arsonists in the United Kingdom.<sup>116</sup> Apart from depression resulting in suicide or parasuicide, a person might set fire whilst in a manic state, losing rational thought and control over their actions or heaving unrealistic beliefs about fire. According to Geller, the progressively decreasing rates of arson in the United States might be explained by better treatments for psychosis, depression and mania, which have been introduced in the past 20 years.<sup>117</sup>

---

114 Geller, 2008.

115 Barker, 1994; Barnett & Spitzer, 1994; Geller, 1992; Prins, 1994.

116 Dickens et al., 2007.

117 Geller, 2008.

Geller also lists disorders of judgment and disorders of impulse control as mental illnesses associated with arson.<sup>118</sup> However, this link appears to be less straightforward and more indirect.<sup>119</sup> Finally, he describes communicative arson. Communicative arson is not a disorder in itself, but rather a descriptive term. It refers to the use of firesetting as a communicative tool, to express the desire for some change (e.g. a change in residence) in those persons who are unable to express their needs and wishes in a normal way because of a lack of social skills.<sup>120</sup> For instance, a person with a mental disorder, low assertiveness and a lack of adequate social abilities does not like the hospital they are placed in. Instead of expressing this to the staff, this person sets fire to their room to get attention for their problems and to force a transfer to a different ward. Although it is not a separate disorder, communicative arson can explain certain 'cry for help' arsons in which communication problems directly lead to the offence.

### 5.3 Summary

In short, arsonists can face mental disorders, either currently or diagnosed in the past. Disorders in particular associated with arson are schizophrenia and other psychotic disorders, personality disorders, alcohol abuse disorders and affective disorders. These disorders can explain arson directly and indirectly. Sometimes disorders directly influence the inclination to set fire, for instance in case of psychosis-induced arson. However, disorders can also exert influence on a person more indirectly. A person suffering from a mental illness experiences difficulties on various levels, like communication deficits, low self-esteem and poor self-efficacy. These difficulties can result in firesetting through several chains of interactions in line with the multi-factorial theories of arson discussed in Section 4 and can result in a 'motivated offender' that sets fire when they see an opportunity.

## 6 Conclusions

The aim of this chapter was to answer the question how arson can be explained theoretically based on theories from different disciplines. From a criminological perspective, the act of arson can be explained using the routine activities theory. Following this theory, arson can occur when three conditions are met. There must be a motivated arsonist, a suitable target must be present, and capable guardians that can prevent the arson from occurring must be absent. This broad theory is applicable to arson, both on a macro level and a meso level. However, what this criminological theory does not answer is the subsequent question how one becomes a motivated offender and often persists in being one. It also fails

---

118 Ibid.

119 See also Geller, 1992.

120 Geller, 1992, 2008.

to provide insight into the non-rational behaviour that some arsonists exhibit, e.g. setting fire in broad daylight.

The question of motivation is answered using single-factor and multi-factorial psychological models that are more specifically tailored at the individual, micro level. Explanations focusing on one factor discussed here are the psychoanalytic model, the social-learning theory, a biological perspective and the addiction model. This list is not exhaustive, but what the single-factor explanations have in common is that they provide only partial insight into the question why someone becomes an arsonist. Because the behaviour is very complex, explanations focusing on one factor only are too limited. In order to counteract this, explanatory models that take into account multiple factors are discussed. The functional analysis model by Jackson, Glass, and Hope explains arson as a behaviour that serves a purpose for the arsonist and is sustained because the positive consequences outweigh the negative effects.<sup>121</sup> More recently, Gannon and colleagues introduced the multi-trajectory theory of adult firesetting. This model consists of two tiers; the first is comparable to the earlier models, the second tier describes different developmental paths that direct the individual arsonist.<sup>122</sup> These models explain arson using different factors that interact.

Finally, more erratic forms of arson behaviour are explained by looking at the disordered subpopulation of arsonists. Several mental illnesses are associated with arson and can account for it, either directly or indirectly.

To conclude, from the explanatory models discussed it follows that arson is a complex behaviour that cannot be explained using single-factor theories only. Different explanations from different disciplines show that various characteristics of a person and their environment, both in the past and in the present, must be taken into account. Furthermore, there is no such thing as 'the' arsonist. Different paths lead to arson, distinguishing more general antisocial behaviour from pure arson behaviour and differentiating the group of arsonists into different types.

I will conclude this theoretical discourse with one possible answer to the question why people set fire. First there must be an opportunity for this behaviour. This opportunity can occur when a person feels unguarded and finds an object he or she wants to set fire to. This 'wanting' is another important element, motivation is personal but can be explained by the different characteristics of a person that interact with our contemporary culture of rationality and order making life difficult, for instance social disadvantage or a psychiatric disorder. Fire can then be used as a means to experience 'fun, meaning and resistance'.<sup>123</sup> This is only one explanation for a complex phenomenon. Arsonists are a heterogeneous group and attention for the specific individual offender is of

---

121 Jackson, Glass & Hope, 1987.

122 Gannon et al., 2012.

123 Presdee, 2005, p. 82.



importance for proper detection, but also – and more importantly – for adequate management and treatment of these unique offenders.

## References

- Anwar, S., N. Långström, M. Grann & S. Fazel, 'Is arson the crime most strongly associated with psychosis? – A national case-control study of arson risk in schizophrenia and other psychoses', *Schizophrenia Bulletin* 2011, vol. 37, no. 3, p. 580-586.
- Arlow, J.A., 'Pyromania and the primal scene: A psychoanalytic comment on the work of Yukio Mishima', *The Psychoanalytic Quarterly* 1978, vol. 47, p. 24-51.
- Bandura, A., *Social Learning Theory*, New York: General Learning Press 1977.
- Barker, A.F., *Arson: A Review of the Psychiatric Literature*, Oxford: University Press Oxford 1994.
- Barnett, W. & M. Spitzer, 'Pathological fire-setting 1951-1991: A review', *Medicine, Science, and the Law* 1994, no. 34, p. 4-20.
- Boden, J.M., D.M. Fergusson & L.J. Horwood, 'Alcohol misuse and violent behavior: Findings from a 30-year longitudinal study', *Drug and Alcohol Dependence* 2010, vol. 122, no. 1-2, p. 135-141.
- Bosshart, H. & S. Capek, 'An unusual case of random fire-setting behavior associated with lacunar stroke', *Forensic Science International* 2011, vol. 209 p. e8-e10.
- Brewer, J. A. & M.N. Potenza, 'The neurobiology and genetics of impulse control disorders: Relationships to drug addictions', *Biochemical Pharmacology* 2008, vol. 75, no. 1, p. 63-75.
- Brunet, J.R., 'Discouragement of crime through civil remedies: An application of a reformulated routine activities theory', *Western Criminology Review* 2002, no. 4, p. 68-79.
- Caley, A., 'Pyromania and executive/frontal dysfunction', *Behavioural Neurology* 1995, no. 8, p. 163-167.
- Canter, D.V. & L. Almond, *The Burning Issue: Research and Strategies for Reducing Arson*, London: Office for the Deputy Prime Minister 2002.
- Cohen, L.E. & M. Felson, 'Social change and crime rate trends: A routine activity approach', *American Sociological Review* 1979, vol. 44, p. 588-608.
- Coid, J., J. Wilkins & B. Coid, 'Fire-setting, pyromania and self-mutilation in female remanded prisoners', *The Journal of Forensic Psychiatry* 199, no. 10, p. 119-130.
- Dalhuisen, L. & F. Koenraadt, 'Zes decennia brandstichters in Nederland: Van 1950 tot heden', in: F. de Jong & R. Kool (eds.), *Relaties van gezag en verantwoordelijkheid: strafrechtelijke ontwikkelingen*, The Hague: Boom Juridische uitgevers 2012, p. 91-116.
- Dalhuisen, L. & F. Koenraadt, *Brandstichters onder vuur: Een empirisch onderzoek naar zaken van brandstichting en hun daders*, Apeldoorn: Politie & Wetenschap 2014.

- Davis, J.A. & K.M. Lauber, 'Criminal behavioral assessment of arsonists, pyromaniacs, and multiple firesetters. The burning question', *Journal of Contemporary Criminal Justice* 1999, vol. 15, p. 273-290.
- Dickens, G. & P. Sugarman, 'Adult firesetters: Prevalence, characteristics and psychopathology', in: G.L. Dickens, P.A. Sugarman & T.A. Gannon (eds.), *Firesetting and mental health: Theory, research and practice*, London: RCPsych Publications 2012, p. 3-27.
- Dickens, G., P. Sugarman, F. Ahmad, S. Edgar, K. Hofberg & S. Tewari, 'Gender differences amongst adult arsonists at psychiatric assessment', *Medicine, Science and the Law* 2007, vol. 47, p. 233-238.
- Doley, R., *Theoretical Approaches to Explaining Deliberate Firesetting Behaviour*, Unpublished manuscript 2009.
- Felson, M., 'Linking criminal choices, routine activities, informal control, and criminal outcomes', in: D.B. Cornish & R.V. Clarke (eds.), *The Reasoning Criminal*, New York: Springer-Verlag 1986, p. 119-128.
- Felson, M., 'Routine activities and crime prevention in the developing metropolis', *Criminology* 1987, vol. 25, p. 911-932.
- Felson, M., *Crime and Everyday Life*, Thousand Oaks: Pine Forge Press 1998.
- Felson, M., *Crime and Everyday Life*, Thousand Oaks: Sage Publications 2002.
- Freud, S., *Das Unbehagen in der Kultur*, Wien: Internationaler Psychoanalytischer Verlag 1930, p. 47-48.
- Freud, S., 'Zur Gewinnung des Feuers', *Imago, Zeitschrift Für Anwendung Der Psychoanalyse Auf Die Natur- Und Geisteswissenschaften* 1932, vol. 18, p. 8-13.
- Gannon, T.A., C. Ó Ciardha, R. Doley & E.K.A. Alleyne, 'The multi-trajectory theory of adult firesetting (M-TTAF)', *Aggression and Violent Behavior* 2012, vol. 17, no. 2, p. 107-121.
- Gannon, T.A. & A. Pina, 'Firesetting: Psychopathology, theory and treatment', *Aggression and Violent Behavior* 2010, vol. 15, p. 224-238.
- Gannon, T.A., 'Female arsonists: Key features, psychopathologies, and treatment needs', *Psychiatry: Interpersonal and Biological Processes* 2010, vol. 73, p. 173-189.
- Gaynor, J., 'Firesetting', in: M. Lewis (ed.), *Child and Adolescent Psychiatry: A Comprehensive Textbook*, Baltimore: Williams & Wilkins 1996, p. 601-611.
- Geller, J.L., 'Pathological firesetting in adults', *International Journal of Law and Psychiatry* 1992, vol. 15, p. 283-302.
- Geller, J.L., 'Firesetting', in: R.N. Kocsis (ed.), *Serial Murder and the Psychology of Violent Crimes*, Totowa, NJ: Humana Press 2008, p. 141-177.
- Glancy, G.D., E.M. Spiers, S.E. Pitt & J.A. Dvoskin, 'Commentary: Models and correlates of firesetting behavior', *Journal of the American Academy of Psychiatry and the Law* 2003, vol. 31, p. 53-57.
- Gold, L.H., 'Psychiatric profile of the firesetter', *Journal of Forensic Sciences* 1962, vol. 7, no. 4, p. 404-417.
- Grant, J.E. & M.N. Potenza, 'Pathological gambling and other behavioral addictions', in: R.J. Francese, S.I. Miller & A.H. Mack (eds.), *Clinical textbook of addictive disorders*, New York: Guilford Press 2006, p. 303-320.

- Grant, J.E., SPECT imaging and treatment of pyromania, *The Journal of Clinical Psychiatry* 2006, vol. 67, p. 998.
- Grant, J.E., J.A. Brewer & M.N. Potenza, 'The neurobiology of substance and behavioral addictions', *CNS Spectr* 2006, vol. 11, no. 12, p. 924-930.
- Grant, J.E. & S.W. Kim, 'Clinical characteristics and psychiatric comorbidity of pyromania', *The Journal of Clinical Psychiatry* 2007, vol. 68, p. 1717-1722.
- Grant, J.E., S.W. Kim & B.K. Hartman, 'A double-blind, placebo-controlled study of the opiate antagonist naltrexone in the treatment of pathological gambling urges', *Journal of Clinical Psychiatry* 2008, vol. 69, p. 783-789.
- Grinstein, A., 'Stages in the development of control over fire', *International Journal of Psycho-Analysis* 1952, vol. 33, p. 416-420.
- Harris, G.T. & M.E. Rice, 'A typology of mentally disordered firesetters', *Journal of Interpersonal Violence* 1996, vol. 11, p. 351-363.
- Hindelang, M.J., M.R. Gottfredson & J. Garofalo, *Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization*, Cambridge, MA: Ballinger, 1978.
- Hoertel, N., Y. Le Strat, J. Schuster & F. Limosin, 'Gender differences in firesetting: Results from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)', *Psychiatry Research* 2011, 190, p. 352-358.
- Holden, C., "'Behavioral" addictions: Do they exist?' *Science* 2001, 294, p. 980-982.
- Hollin, C.R., S. Davies, C. Duggan, N. Huband, L. McCarthy & M. Clarke, 'Patients with a history of arson admitted to medium security: Characteristics on admission and follow-up postdischarge', *Medicine, Science and the Law* 2013, vol. 53, p. 154-160.
- Hurley, W. & T. Monahan, 'Arson: The criminal and the crime', *British Journal of Criminology* 1969, no. 9, p. 4-21.
- Jackson, H.F., C. Glass & S. Hope, 'A functional analysis of recidivistic arson', *British Journal of Clinical Psychology* 1987, vol. 26, p. 175-185.
- Jayaraman, A. & J. Frazer, 'Arson: A growing inferno', *Medicine, Science and the Law* 2006, vol. 46, p. 295-300.
- Jeffery, C.R., 'Obstacles to the development of research in crime and delinquency', *Journal of Research in Crime and Delinquency* 1993, vol. 30, p. 491-497.
- Kanehisa, M., K. Morinaga, H. Kohno, Y. Maruyama, T. Ninomiya, Y. Ishitobi & T. Yoshikawa, 'An uncommon case of random fire-setting behavior associated with todd paralysis: A case report', *BMC Psychiatry* 2012, no. 12, p. 132.
- Kaufman, I., L.W. Heims & D.E. Reiser, 'A re-evaluation of the psychodynamics of firesetting', *American Journal of Orthopsychiatry* 1961, vol. 31, p. 123-136.
- Koenraadt, F., L. Dalhuisen & H. Nijman, 'Pyromanie', in: I.H.A. Franken, P. Muris & D. Denys (eds.), *Basisboek psychopathologie*, Utrecht: De Tijdstroom 2012, p. 695-708.
- Labree, W., H. Nijman, H. van Marle & E. Rassin, 'Backgrounds and characteristics of arsonists', *International Journal of Law and Psychiatry* 2010, vol. 33, p. 149-153.

- Lewis, N.D.C., 'Pathological firesetting and sexual motivation', in: R. Slovenko (ed.), *Sexual Behavior and the Law*, Springfield, Illinois: C.C. Thomas 1965, p. 627-642.
- Lewis, N.D.C. & H. Yarnell, *Pathological Firesetting (Pyromania)* (Nervous and mental disease monograph, Vol. 82 ed.), Nicholasville KY: Coolidge Foundation 1951.
- Lilly, J.R., F.T. Cullen & R.A. Ball, *Criminological Theory: Context and Consequences*, Thousand Oaks, Calif: SAGE publications 2014.
- Lindberg, N., M.M. Holi, P. Tani & M. Virkkunen, 'Looking for pyromania: Characteristics of a consecutive sample of finnish male criminals with histories of recidivist fire-setting between 1973 and 1993', *BMC Psychiatry* 2005, no. 5, p. 1-5.
- Massey, J.L., M.D. Krohn & L.M. Bonati, 'Property crime and the routine activities of individuals', *Journal of Research in Crime and Delinquency* 1989, vol. 26, p. 378-400.
- Mavromatis, M. & J.R. Lion, 'A primer on pyromania', *Diseases of the Nervous System* 1977, vol. 38, p. 954-955.
- Moll, K.D., *Arson, Vandalism, and Violence: Law Enforcement Problems Affecting Fire Departments*, Washington D.C.: US Department of Justice, Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice 1974.
- Molnar, G., L. Keitner & B.T. Harwood, 'A comparison of partner and solo arsonists', *Journal of Forensic Sciences* 1984, vol. 29, p. 574-583.
- Ó Ciardha, C. & T.A. Gannon, 'The implicit theories of firesetters: A preliminary conceptualization', *Aggression and Violent Behavior* 2012, vol. 17, p. 122-128.
- Orlemans, J.W.G., P. Eelen & D. Hermans, *Inleiding tot de gedragstherapie*, Houten: Bohn Stafleu van Loghum 2007.
- Osgood, D.W., J.K. Wilson, P.M. O'Malley, J.G. Bachman & L.D. Johnston, 'Routine activities and individual deviant behavior', *American Sociological Review* 1996, vol. 61, p. 635-655.
- O'Sullivan, G. H. & Kelleher, M. J., 'A study of firesetters in the south-west of Ireland', *The British Journal of Psychiatry* 1987, vol. 151, p. 818-823.
- Owens, R.G. & J.B. Ashcroft, 'Functional analysis in applied psychology', *British Journal of Clinical Psychology* 1982, vol. 21, p. 181-189.
- Plinsinga, A., E. Colon & S. de Jong, 'Brandstichting is meestal geen pyromanie', *Nederlands Tijdschrift Voor Geneeskunde* 1997, vol. 141, p. 129-131.
- Presdee, M., 'Burning issues: Fire, carnival and crime', in: M. Peelo & K. Soothill (eds.), *Questioning Crime and Criminology*, London: Willan Publishing 2005, p. 69-82.
- Prins, H., *Fire-Raising: Its Motivation and Management*, London: Routledge 1994.
- Puri, B., R. Baxter & C. Cordess, 'Characteristics of fire-setters. A study and proposed multi-axial psychiatric classification', *The British Journal of Psychiatry* 1995, vol. 166, p. 393-396.
- Quinsey, V.L., T.C. Chaplin & D. Upfold, 'Arsonists and sexual arousal to fire setting: Correlation unsupported', *Journal of Behavior Therapy and Experimental Psychiatry* 1989, vol. 20, p. 203-209.

- Räsänen, P., H. Hakko & E. Väisänen, 'The mental state of arsonists as determined by forensic psychiatric examinations', *Journal of the American Academy of Psychiatry and the Law Online* 1995, vol. 23, p. 547-553.
- Repo, E., M. Virkkunen, R. Rawlings & M. Linnoila, 'Criminal and psychiatric histories of Finnish arsonists', *Acta Psychiatrica Scandinavica* 1997, vol. 95, p. 318-323.
- Rice, M.E. & T.C. Chaplin, 'Social skills training for hospitalized male arsonists', *Journal of Behavior Therapy and Experimental Psychiatry* 1979, no. 10., p. 105-108.
- Rice, M.E. & G.T. Harris, 'Firesetters admitted to a maximum security psychiatric institution offenders and offenses', *Journal of Interpersonal Violence* 1991, no. 6, p. 461-475.
- Ritchie, E. & T. Huff, 'Psychiatric aspects of arsonists', *Journal of Forensic Sciences* 1999, vol. 44, p. 733-740.
- Rix, K.J., 'A psychiatric study of adult arsonists', *Medicine, Science, and the Law* 1994, vol. 34, p. 21-34.
- Santtila, P., K. Fritzon & A.L. Tamelander, 'Linking arson incidents on the basis of crime scene behaviour', *Journal of Police and Criminal Psychology* 2004, vol. 19, p. 1-16.
- Sasse, S., "'Motivation" and routine activities theory', *Deviant Behavior* 2005, vol. 26, p. 547-570.
- Schmid, H., 'Zur Psychologie der Brandstifter', in: C.G. Jung (ed.), *Psychologische Abhandlungen* (1st ed), Leipzig & Wien: F. Deuticke 2014, p. 80-179.
- Schoenmakers, Y., J. Hoekendijk & R. van der Kruk, *Het vuur aan de schenen. Seriematige brandstichting in de opsporing*, Apeldoorn: Politieacademie 2010.
- Schoenmakers, Y., A. van Wijk & T. van Ham, *Seriebrandstichters. Een verkennend onderzoek naar daderkenmerken en delictpatronen*, Apeldoorn: Politie & Wetenschap 2012.
- Sheley, J.F., 'Critical elements of criminal behavior explanation', *The Sociological Quarterly* 1983, vol. 24, p. 509-525.
- Slade, P.D., 'Towards a functional analysis of anorexia nervosa and bulimia nervosa', *Journal of Experimental Psychology* 1982, vol. 38, p. 179.
- Stahura, J.M. & R.C. Hollinger, 'A routine activities approach to suburban arson rates', *Sociological Spectrum* 1988, vol. 8, p. 349-369.
- Stewart, L.A., 'Profile of female firesetters. implications for treatment', *The British Journal of Psychiatry* 1993, vol. 163, p. 248-256.
- Sturmey, P., J. Ward-Horner, M. Marroquin & E. Doran, 'Structural and functional approaches to psychopathology and case formulation', in: P. Sturmey (ed.), *Functional Analysis in Clinical Treatment*, Burlington, MA: Elsevier academic press 2007, p. 1-21.
- Swaffer, T., M. Haggatt & T. Oxley, 'Mentally disordered firesetters: A structured intervention programme', *Clinical Psychology & Psychotherapy* 2001, vol. 8, p. 468-475.
- Taylor, J.L., I. Thorne, A. Robertson & G. Avery, 'Evaluation of a group intervention for convicted arsonists with mild and borderline intellectual disabilities', *Criminal Behaviour and Mental Health* 2002, vol. 12, p. 282-293.

- Vaughn, M.G., Q. Fu, M. DeLisi, J.P. Wright, K.M. Beaver, B.E. Perron & M.O. Howard, 'Prevalence and correlates of fire-setting in the United States: Results from the national epidemiological survey on alcohol and related conditions', *Comprehensive Psychiatry* 2010, vol. 51, p. 217-223.
- Veen, V.C., G. Stevens, T. Doreleijers & W. Vollebergh, 'Moroccan adolescent suspect offenders in the Netherlands: Ethnic differences in offender profiles', *Psychology, Crime & Law* 2011, vol. 17, p. 545-561.
- Virkkunen, M., 'Reactive hypoglycemic tendency among arsonists', *Acta Psychiatrica Scandinavica* 1984, vol. 69, p. 445-452.
- Virkkunen, M., J. de Jong, J. Bartko, F.K. Goodwin & M. Linnoila, 'Relationship of psychobiological variables to recidivism in violent offenders and impulsive fire setters: A follow-up study', *Archives of General Psychiatry* 1989, vol. 46, p. 600.
- Virkkunen, M., A. Nuutila, F.K. Goodwin & M. Linnoila, 'Cerebrospinal fluid monoamine metabolite levels in male arsonists', *Archives of General Psychiatry* 1987, vol. 44, p. 241.
- Vreeland, R.G. & B.M. Levin, 'Psychological aspects of firesetting', in: D. Canter (ed.), *Fires and Human Behavior*, New York, John Wiley & Sons 1980, p. 123-136.
- White, E.E., 'Profiling arsonists and their motives: An update', *Fire Engineering* 1996, vol. 149, p. 80-88.
- Yesavage, J.A., M. Benezech, P. Ceccaldi, M. Bourgeois & M. Addad, 'Arson in mentally ill and criminal populations', *Journal of Clinical Psychiatry* 1982, vol. 44, p. 128-130.