

A FALSE SENSE OF SECURITY

A Study Into Children's Access to Cigarette Lighters and Their Use as a Fire Lighting Tool

by

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CHAPTER 1

INTRODUCTION

It is the purpose of this thesis to investigate the issues which contribute to young children accessing and using cigarette lighters and lighting what may be, potentially catastrophic fires resulting in property loss, serious injury and even death. This nexus between children and fire lighting has become one of the leading causes of death and serious injury to children under the age of five years (Baker, 1992: 887). Authors such as Wooden and Berkey (1984) believe that the problem is so great that they have described it as, *America's Middle Class Nightmare*.

Whilst regulatory authorities in the United States, Australia and other western countries have introduced initiatives to try and curb the ability of young children to operate cigarette lighters, in the form of child-resistance regulation, this thesis will question whether these moves have been sufficient to allay this so-called *nightmare* and posit further responses which governments, society and individuals can make.

The full extent of the problem of young children and cigarette lighters was initially uncovered after an epidemiological study was conducted by the Consumer Product Safety Commission (CPSC) in the United States between May 1986 and February 1987 (Harwood, 1988: 38). This study was prompted by a petition to the United States Government from a nurse, Diane Denton, working in a children's hospital in Louisville, Kentucky. So concerned was nurse Denton with the numbers of children being injured or killed as a result of their play with cigarette lighters that she requested that the US government produce a standard that would make these devices less easily operable by small children (Harwood, 1988: 38).

The figures produced by the petition and the subsequent investigation by the CPSC highlight the level of Denton's concern. In the same year of the petition (1985) United States fire services attended 11,000 fires which were started by cigarette lighters. Of these, 7,800 fires were directly attributable to child play (Thomas, 1988: 24). Those fires caused by children accounted for 180 deaths, 860 injuries and \$(US) 60.5 million in damage (Thomas, 1988: 24). As if to underline the dangers to the very young there were several fires reported which had been started by children under the age of two years with the median age for children starting fires with cigarette lighters being 4.2 years (Harwood, 1988: 40).

Of the cigarette lighters being used by these children the vast majority (96%) were disposable (Harwood, 1988: 41). The CPSC estimated that approximately 500 million of these lighters were sold in the United States each year (CPSC, 1993: 1).

The United States government was eventually moved to put in place a regulatory regime in line with Diane Denton's petition to make these disposable lighters less easily operable. On 12 July, 1994, the Chairman of

the CPSC announced a complete ban on the sale of those disposable cigarette lighters which did not meet the mandatory requirements for child resistance (CPSC, 1994). Later the CPSC chairman, in a statement to the US Congress, projected that this regulation would prevent up to 100 deaths per year, several hundred injuries and millions of dollars in property damage (Brown, 1997: 26).

In Australia concern about the prevalence of cigarette lighter related fatalities and injuries was also mounting. A report by the National Injury Surveillance Unit showed that 42 children under the age of five had been admitted to Australian hospitals with serious burns as a result of fires started by cigarette lighters (Kriesfeld, 1994: 3). Between 1994 and 1997 the deaths of nine children were directly attributed to disposable cigarette lighters (Ellison, 1997). Research also found that of those children who were being killed as a result of Australian house fires 75-80% were under the age of five (Juan, 1995: 29).

Pressure to introduce the same standards as the United States for child resistant cigarette lighters has been applied by those who were forced to deal with the tragic aftermath of these events. Australian fire services and State Coroners became increasingly vocal throughout the 1990s in an effort to introduce a regulatory regime (Bahr, 1997: 6, Bucholtz, 1996: 1, Hoban 1996). In New South Wales two notable coronial findings, including one fire which resulted in the deaths of 5 people (Hoban, 1996), eventually lead that State's Minister for Fair Trading, Mrs Faye Lo Po, to approach the National Ministerial Council on Consumer Affairs requesting action (Hoban, 1996).

Mandatory child resistance for disposable cigarette lighters became law in Australia on 1 October, 1997. Interestingly the regulations introduced by the Federal Government were an exact replica of those introduced several years earlier in the United States (Commonwealth of Australia, Statutory Rules 1997, No.1).

Introducing the new regulations the Federal Minister for Customs and Consumer Affairs, Hon, Christopher Ellison announced:

'The ban...has been taken to ensure the safety and welfare of Australian Children. ...The priority here is to eliminate the cause of some horrific injuries and death.'

(Ellison, 1997)

The New Zealand government has also come under pressure to introduce the same regulations following the loss of ten lives as a result of fires caused by cigarette lighters between July 1993 and December 1997 (Gillon, 1998: 1).

Even before the advent of this new child resistant environment there were those who warned that the regulations themselves should not be seen as the sole answer to this problem, nor should parents believe that they could relax their guard:

'...like most child-resistant products there will be those whose persistence and patience will eventually overcome even the most ingenious safety features.'

(Bahr, 1997: 7)

Tragically, since the introduction of these regulations in both Australia and the United States evidence of a reduction in the number of young children using disposable cigarette lighters to start fires has been less than encouraging.

Observations of fire setting behaviour conducted by the Juvenile Firesetter Program of the Portland (Washington, USA) Fire Bureau has concluded that; 'the advent of child-resistant lighters has had little impact on this [child firesetters] group.' (Porth, 1999c). Research conducted by the National Safe Kids Campaign in the United States shows that the number of child play fires has fallen by only 14 per cent since the advent of the regulations (National Safe Kids Campaign, 1998: 2). Australian newspapers continue to feature articles which open with lines such as; 'A two-year-old boy playing with a "child-proof" lighter caused a fire which gutted aunit yesterday.' (Merriman, 1998: 24).

The advent of child resistant regulation, whilst an important acknowledgment of the scope of the problem, is clearly not the total answer to the issue of young children and cigarette lighters. What then are the other factors which may contribute to this potentially lethal problem and provide the imprimatur for further initiatives aimed at its amelioration?

As stated at the outset this thesis will identify and explore these factors and provide some conclusions as to what might be further done by those within the legislative and fire prevention communities in order to enhance the effectiveness of the child resistance regulations. The one factor which is constant throughout the thesis is the parent. Not only is the parent the most significant contributor to the development of the child but just as importantly this thesis will demonstrate that the parent is the front line in child fire safety and prevention, requiring appropriate resources and education.

The next chapter discusses those issues which have been identified or suggested as contributing to the use of cigarette lighters by young children - arriving at a focus and hypothesis (in the form of research questions) - which will form the basis of the ensuing research and analysis. This focus is centred upon the role of the parent as a carer, model and supervisor for their children and the part that the parent plays in the development of fire setting behaviours.

The research itself, will commence with a review of the relevant literature which has been collected from a variety of sources and covers a broad range of the issues which impact upon child behaviour, development and subsequent interest in fire. This review will also discuss the limitations

which have been identified within the regulations covering child resistant cigarette lighters.

The primary research conducted as part of this thesis uses data collected from a case study of a group of child fire setters in South Australia. This will be augmented by the views, opinions and insights of those whose vocation it is to deal with child fire setters on a daily basis and which has been obtained from a series of open formatted interviews. These two sets of data combined provide a measure of the extent, prevalence and incidence of the earlier identified issues. The conclusion to this thesis provides the basis upon which more in-depth and detailed analysis of the identified issues can take place in the future and serve as a guide to those wanting to further the cause of child fire safety.

CHAPTER 2

THE PARENT, THE CIGARETTE LIGHTER, THE CHILD

This chapter continues the discussion, commenced within the Introduction, concerning young children and cigarette lighters, by focussing on the specific issues which are addressed throughout the following research. In particular this chapter develops a theme around the importance of the parent and the role that they may play in their child's fire play behaviour. This focus provides the rationale for the research questions pursued within this thesis and which are set out within the conclusion of this chapter.

As mentioned previously, there continue to be reports of young children lighting fires with cigarette lighters, viz:

'Nearly overcome by smoke, a young woman grabbed her two young children and fled from a blazing house at Salisbury North yesterday. Moments later flames engulfed the house causing damage estimated at \$60,000. Fire officers believe the two children were playing with a cigarette lighter in a bedroom and lit a fire in a rubbish bin filled with paper'

(The Advertiser, 10/7/99)

The above article neatly encapsulates many of the issues relevant to this thesis. Firstly, the children were young (five and three years of age). Secondly, they used a cigarette lighter as the ignition source. Thirdly, the fire was set in the home (thankfully, unlike many other like fires the injuries suffered were only minor). Finally, and most significant of all in the context of this discussion, although a parent was home at the time she was not able to intervene early enough to prevent the fire from occurring.

The fires which result from young children *playing* with cigarette lighters (as is the case with the above example) are usually considered to be accidental in so much as that children under the age of seven are considered

too young to understand the implications of their actions (National Fire Data Center, Undated: 23). Wooden and Berkey (1984: 45) also suggest that the fires which result from the *curious* child (a term which will be explored in greater detail in the forthcoming chapter) tend to be an *accidental* result of the fire play.

Kathleen Berger (1994: 220) suggests that the risk of accidents for children in general could be much lower than it is if parents understood the importance of their role in accident prevention. Indeed, figures emerging from the USA show that the rate of accidental death amongst children is falling. In the past six decades, the rate of death from unintentional injury in the USA has dropped by 65 per cent (Baker, 1992: 887). This figure does not translate to deaths from accidental house fires, however, where there has been no appreciable change in the rate from 1930 to 1988 (Baker, 1992: 887).

Among the list of factors contributing to child accident risk one of the most crucial is, 'caregiver forethought and supervision' (Berger, 1994: 220). *Australia's Parents* makes the claim that 76 per cent of all fires started by children are the result of oversight by parents (1998: 30). If this is indeed the case then it is by no means a small number. In New South Wales alone it is estimated that 47,000 fires were lit by children between 1987 and 1994 (Nicolopoulos, 1996: 3). These sorts of statistics highlight the role that a lack of parental forethought and supervision may play in establishing an environment conducive to fireplay.

A number of authors have acknowledged that parents have a pivotal role in motivating their children towards experimentation with fire. Adler & Nunn (1993: 17) have expressed the view that parents need to be reminded of the importance of responsible fire behaviour because, 'young children often copy their parents'. Porth (1999a: 1) warns parents that, 'it is the responsibility of those caring for children to keep them safe and set a proper example of safe fire use' and he adds that when children see their parents using matches or cigarette lighters they should see the parent treating it with, 'respect and caution'. Kolko and Kadzin (1994: 120) see that the lack of parental interest in their child's behaviour and, 'the absence of corrective consequences or disciplinary actions may increase the potential for continued firesetting and the likelihood of damage or injuries'.

Porth (1999b: 2), in a plea to parents, suggests that they should view cigarette lighters as a dangerous article;

'The use of matches and lighters should be similar to the use of other household tools. ... Can we reasonably expect our children to treat matches and lighters as a dangerous tool if we, as adults, do not treat them that way ourselves.'

Porth also suggests that the problem of child access to cigarette lighters is easy to solve and, 'under the complete control of the parent' (Porth 1999b: 1).

One reason which has been posited for the apparent failure of the child-resistant cigarette lighter regulation to affect the numbers of fires being set by

children, also relates to the role of the parent. Bahr (1998) has suggested that parents have confused the notion of *child-resistant* with *child-proof* and as such, have been lulled into a so-called *false sense of security*. This child proof myth finds itself re-iterated within the popular media. This false sense of security may be partly responsible for the ready availability of cigarette lighters that Kolko & Kadzin (1994: 120) see is a major environmental risk factor leading to children experimenting and playing with cigarette lighters:

'The availability of matches or lighters may influence under-stimulated or curious children to exhibit an interest in fire'.

Certainly the notion that cigarette lighters must be placed in a secure location well out of the reach of children is a recurrent theme within the home fire safety information produced by many safety authorities around the world (CPSC, 1999, FEMA, 1998b: 52 & Parenting SA, 1996). This is particularly important for children under seven years of age. Research into children within this age group has shown that the primary motivator for fire play and cigarette lighter experimentation is curiosity (Swain, 1998: 12).

Even though information regarding home fire safety has been produced it is quite apparent that parents are not receiving the level of education that they require in order to be properly informed of the dangers and the correct procedures to be adopted. Kafry (1980: 50) found that there were many deficiencies in the fire knowledge of parents and that many parents ignored the fire interest of their children. This finding is corroborated by the research conducted by the CPSC which led to the introduction of child resistant regulations. This research concludes that, 'the parents of these children [fire setters] did not realise or appreciate the danger' (Harwood, 1988: 44).

If the parent is to fulfil the role of primary carer effectively and ensure the safest possible environment for their children, then, as Kafry (1980: 51) points out, fire skills and education programs must be available to them. Even the CPSC research which recommended the introduction of child resistant cigarette lighters also suggests that, 'efforts to better inform parents of the hazard might reduce the number of fires, deaths and injuries that occur' (Harwood, 1988: 44).

Whilst there are other acknowledged factors which impact on a young child's *desire* to play with cigarette lighters and experiment with fire (which are discussed in the up-coming literature review) it is apparent, from the above discussion, that the parent has a major role to play. This role has two key aspects. The first is the parent as a role model and motivator for their children to imitate and copy. Secondly, the parent through forethought and supervision fulfils a duty in preventing access to cigarette lighters and educating their children in the dangers of fire play. Clearly both of these factors will be affected by misconceptions or confusion, such as the false sense of security alluded to earlier.

This thesis will focus then, on this dual role of the parent as a factor in the fire play and firesetting behaviours of young children.

Research Questions

The above discussion provides the basis for the two questions addressed within this thesis:

- How are children accessing cigarette lighters as a means of fire setting?
- What is the significance of the parent in the fire setting behaviour?

The first question directly addresses the issue of forethought and supervision of parents, - forethought in so much as, is any consideration being given to how cigarette lighters are stored and where they are left. As Kolko and Kadzin (1994: 120) suggest the ease of availability of these devices may itself be a motivator for fire play and experimentation. Other issues which arise within this first question concern why parents might leave cigarette lighters in easily accessible areas. Is there any currency, for instance, in the notion that there is a false sense of security?

The second question addresses the parent not only as a role model for their children to be copied and imitated but also as an educator. Arising from this is the issue of whether parents are themselves receiving the necessary information, education and training to enable them to provide a safe environment for their children.

The aim of this thesis then is to examine the relationship which exists between the behaviour of parents and the subsequent fire play exhibited by their young children. In the context of this thesis, the particular age group of children to be studied will be those seven years of age and younger.

Additionally, this thesis will:

- Investigate parental practices in regards to cigarette lighter access, storage and confinement prior to fire incidents .
- Assess the level of awareness of the parents of child firesetters to the dangers of cigarette lighters
- Assess the need for an education/information campaign to inform parents of fire safety issues.

Limitations of This Thesis

The (following) literature review highlights the fact that the problem of young children accessing and using cigarette lighters to set fires incorporates a range of complex issues beyond that of the role of the parent which is the focus of this thesis. This research should therefore not be considered as providing the sole solutions to ameliorating this problem. Like the introduction of child resistant cigarette lighters, the acknowledgement of the part played by the parent and the introduction of any initiatives to address the identified parental

issues should be viewed as only one of a range of steps which will need to be taken in order to fully minimise the potential dangers.

The methodology employed in this thesis itself does not provide the full answer to the issues raised within the research questions. But, it does identify those relevant issues in relation to parental practice and awareness which could form the basis for future in-depth research.

CHAPTER 3.

LITERATURE REVIEW

The following review of literature relevant to the research questions explored within this thesis has been gathered from a variety of sources. As well as the traditional avenues, such as published books and journals, more modern sources have also been utilised. Primary among these is the internet and world wide web. The advent of these vast resources allows for access to a range of literature which may have otherwise been unpublished or otherwise inaccessible. Documents such as press releases, governmental statements and educational material, have been amassed from around the world and, due to their real-time publication, provide up-to-date perspective on many of the issues raised.

It is acknowledged, however, that these modern information sources do not necessarily publish material with the same level of editorial or peer review which may accompany information printed within refereed journals or standard text. In view of this much care has been taken, when using literature sourced through the internet, to ensure only authoritative and reliable information has been used, or, where there has been any doubt as to the veracity of information obtained, corroboration has been sought from other sources.

Due to the limitations of this thesis this literature review should not be viewed as exhaustive. As will be seen a series of themes have been developed around which the relevant literature has been grouped. Central to these themes is the theoretical basis upon which, it is suggested, all children learn *values* and *behaviours*. It is this theoretical discussion which forms the starting point for the literature review. The conclusion to this chapter will bring together the common *threads* of these themes as they relate to the stated research questions.

The Development of the Child

How is it that a very young child, with little experience of the world, can possess the necessary knowledge and desire to want to *play* with a cigarette lighter? And, from where does a young child obtain the awareness of the motor skills required to actually physically operate such a small mechanical device? This part of the literature review will explore the theories related to the acquisition of knowledge and skills through *observational learning* or *modelling* and the development of a child's sense of right and wrong.

In the previous chapter mention was made of the capacity and ability of children to *copy* their parents (Adler & Nunn, 1993: 17) and that parents

should remember to treat cigarette lighters with *respect* when children are watching (Porth, 1999a: 1). What these authors are alluding to is the basis upon which most human behaviour is learned – modelling (Bandura: 1986: 47). Albert Bandura suggests that modelling has been, ‘acknowledged to be one of the most powerful means of transmitting values, attitudes, and patterns of thought and behaviour’(1986: 47). In defining modelling or *observational learning* Bandura (1986: 49) states:

‘Observers can acquire cognitive skills and new patterns of behaviour by observing the performance of others. The learning may take varied forms, including new behaviour patterns, judgemental standards, cognitive competencies and generative rules for creating behaviours.’

The importance of modelling in the development of children is highlighted by Perry and Bussey (1984: 116) who suggest that a child’s personality, competency and behaviour are all dramatically shaped by their observations of *influential social models*.

Elkind & Weiner (1978: 104) suggest that Jean Piaget has been one of the most significant and influential authors in this field of child psychology and education. In commenting on Piaget’s theories of child development Perry & Bussey have suggested that children go through a staged developmental process which begins at about 4 months of age where the child begins to mimic adult behaviour and culminates at around 16 to 18 months when the child begins to imitate, ‘increasingly complex sequences of actions patterns displayed by parents and so on’ (Perry & Bussey, 1984: 117).

Lawrence Kohlberg has further amplified and differentiated Piaget’s theory (Elkind & Weiner, 1978: 400) into the a theory of *self-socialisation*. He believes (as cited in Perry & Bussey) that children imitate in order to feel *competent*:

‘Young children (2 to 5 years) equate competence with superficial qualities of models – especially their size, strength and ownership of material goods. Thus young children are particularly likely to imitate their parents whom they revere as godlike, superior and virtuous.’

(Perry & Bussey, 1984: 118)

However, children do not automatically imitate every action of their parents or other model. Cloniger (1996) in also citing Kohlberg has suggested that the development of behaviours in young children will also be influenced by their sense of moral judgment (Cloniger, 1996: 364). In deciding between what is a right (good) action and what is a bad (wrong) action children will consider whether the action is likely to bring punishment or negative outcomes (Cloniger, 1996: 365).

In *The Developing Child*, Bee points out that the idea that the inevitability of punishment will influence a child's action is also found within the work of Piaget (Bee, 1981: 405). In citing Piaget, she posits that children will eventually develop a sense of *autonomous reality* where social rules will be seen as more changeable and arbitrary, however, prior to that stage the child's moral judgement will be more absolute with the rightness of an action largely based on perceived consequences. Of particular significance, within the context of the discussion to follow, Piaget suggests that dividing line between these two stages is around age seven (Bee, 1981: 405).

Perry & Bussey's discussion of the work of Albert Bandura claims that there are three ways by which children can learn what outcomes may be likely for their actions (Perry & Bussey, 1984: 123). The first is via verbal instruction. Parents may warn their children about the consequences which may result from a particular action. Secondly, children can learn to expect a particular outcome from the reward or punishment they receive intrinsically from the action itself. For instance, a child may be consistently rewarded and receive some pleasure from a particular action and expect that reward to be applied each time. Finally, and (Bandura argues) most powerfully, children learn to anticipate the consequences of certain actions by observing the outcomes that others (including their parents) receive for their actions. As an example (and in the context of this thesis) they may notice that their parents derive some pleasure from smoking (Perry & Bussey, 1984: 123).

Armed with the stimulus provided by observing the behaviour of models and with the expectation of a particular outcome, Kohlberg argues that, by two years of age children begin to insist on the right to imitate actions that they have seen their parents perform (Perry & Bussey, 1984: 118). Cloninger also points out that Erik Erikson has suggested that at this age:

'the pre-school child attains a sense of autonomy, the confidence that he or she can be separate and act independently, and a sense of initiative, which permits making choices and decisions.'

(Cloninger: 1996: 369)

In summary then, several world renowned child researchers agree that one of the most important influences on the moral development of the child will be the actions of the significant models in that child's life. Foremost among these models, especially for the very young, will be the parent. Not only do the actions of the model serve as a pattern for imitation but the model's possession of physical objects also raises a desire within the child to also possess those objects in order to gain a perception of competency. The consequences of the model's actions also serve as a guide to the child as to the morality, or rightness or wrongness, of a particular action, with positive consequences more likely to stimulate a child to not only directly imitate but to also act with some initiative.

The forthcoming literature, dealing specifically with the motivation behind child fireplay and firesetting behaviours, demonstrates quite conclusively the practical application of this theoretical viewpoint.

Why Children Light Fires

In *The Psychology of Child Firesetting*, Gaynor and Hatcher (1987) (citing research by Fineman) directly attribute the previous theories of child development with child fireplay behaviour:

'Those environmental contingencies which encourage a child to play with fire are modeling, imitation and inconsistent negative reinforcement.'

(Gaynor & Hatcher, 1987: 48)

These same theories are to be found re-iterated in research by Porth and Hughes (2000), who (citing Brian Whitney) argue that the dynamics which have been identified as contributing to anti-social behaviours in youth are also applicable to child fireplay. The most significant of these dynamics are:

- *'Access (to weapons)*
- *Lack of (appropriate supervision)*
- *Few consequences for their actions*
- *Limited adult guidance (role modelling)'*

(Porth & Hughes, 2000: 2)

Gaynor & Hatcher, again citing Fineman, also suggest that there are two types of juvenile firesetters. The first, is the *curiosity* firesetter, 'a young normal child setting fire primarily for reasons of curiosity and environmental exploration'. The second, is the *pathological* or *recurrent* firesetter, 'motivated by strong emotional distress such as anger or revenge, overriding stress such as death in the family or divorce, and the reinforcing negative attention firesetting will bring from parents, peers and the community' (Gaynor & Hatcher, 1987: 48). This idea is supported by Kolko and Kadzin (1991) who have placed juvenile fire setters in the categories of *Curiosity* or *Anger* with several sub-categories based upon the levels of each of these factors which may be present (Kolko and Kadzin, 1991: 535).

The curiosity firesetter is of particular interest within the context of this study as there is a large body of research to show that this is the primary motivator for young children (seven years and younger). Paul Swain in a study of Victorian children found that curiosity or fascination with fire was the motivating factor behind 73% of the fires lit by children under the age of 8 years, whereas, it is of interest that this figure decreased for older age groups (Swain, 1998: 12). Kolko & Kadzin (1994) also found that the predominant primary motivators for child fire lighters in a study of 95 children were benign factors such as, *no reason, curiosity, fun-playing* with only 11.7% of children motivated by *anger* or *manipulation* (1994: 117).

Wooden & Berkey's study of child fire setters concluded that there are behavioural characteristics which, 'distinguish the younger children (4-8) from pre-teenagers(9-12) and from teenagers (13-17) (1984: 22). In commenting on the first group they found that:

'...the most common types of fires set by the very young children, [are] the 'playing with matches' fires. Curious and fascinated by the spark and the ignition of a match, these children are not bent on destruction when they play with fire'.

(Wooden & Berkey, 1984: 45)

The age distinctions made by these various authors are of interest within the context of the earlier (theoretical) discussion. Piaget, suggested that at around age seven children begin to act with what he called *autonomous reality*. It may well be that this autonomous reality manifests itself within the child as an awareness that their *curiosity* towards fireplay is a *wrong* behaviour without the need for external reinforcement of the consequences. This, of course does not fully explain why some of these young children engage in fireplay whilst others do not.

Gaynor, McLaughlin and Hatcher (1983) suggest that fire interest in children is universal and that most children are fascinated with fire as early as age three. They also suggest that, 'about 50 per cent of the children who are interested in fire actually participate in some sort of fireplay' (1983: 1.1). The reasons that not all children involve themselves in these behaviours highlights the limitations of this thesis (which were referred to in the conclusion of the second chapter).

Fineman (as cited in Gaynor and Hatcher) suggests that as well as the environmental contingencies (discussed previously) there are also personality variables which contribute to the advent of fireplay (Gaynor & Hatcher, 1987: 48).

One of the most often cited pieces of research into these personality variables is that conducted by Dista Kafry (1980). In a study of ninety-nine young boys she found that those children who engaged in fire play had, 'surprisingly consistent', personalities. She describes this personality as 'rascality'. She found that this was typified by a child who was more, 'mischievous, energetic, adventurous, exhibitionist, aggressive and impulsive than his peers' (Kafry, 1980: 52).

These traits have also been used to describe the behaviours of children diagnosed with Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD) (Hoad and Geers, 1997: 2 & Kauffman, 1985: 173) and it is not surprising to find that around 21% of children referred to juvenile fire counselling in Victoria have been diagnosed with these disorders (JFAIP, 1999: 7), although this figure is much higher (39.2%) for referrals in South Australia (Templer & Crossman, 1998: 2).

Kafry's use of an all male sample also reflects one of the other variables – gender. Literature reviewed during this study making specific

comment in regards to gender suggests that males predominate within fireplay statistics. Research by Porth (1998) of children referred to juvenile fire counselling, shows that over a period between 1990 and 1998 between 81.6% and 90.9% of referrals were male (Porth, 1998: 13). These figures are repeated in studies of similar programs in South Australia and Victoria (Templer & Grossman, 1998: 2, JFAIP, 1999: 3).

The predominance of males within referral statistics possibly corroborates the research by Kafry, in that those characteristics identified by her are those which tend to be identified with boys. In particular it has been identified that the prevalence of ADD and ADHD is 6 to 9 times greater in males than in females (Gearhart & Gearhart, 1989: 30).

Even though these personality and gender traits do not form a part of the focus for this thesis it is interesting to note that Kafry concludes her research by suggesting that in order for these *rascals* to become appropriately controlled the parents need to, 'invest time and trouble' and that parents have to, 'accept the task...to provide their children with skill, training and development' (Kafry, 1980: 56).

Within this group of literature the theory of the development of child morality has been directly related to the environmental contingencies which play a role in the development of fireplay behaviours. It has also been demonstrated that the vast majority of young children (those seven years and under) are primarily motivated by a sense of curiosity. Whilst this curiosity is not necessarily *benign*, in so much as there are personality and gender factors which are also involved, it is separate from the pathological and psychological dysfunctions which are manifest by the motivators of anger and revenge and which may be symptomatic of problems beyond the influence and control of parents. In contrast this curiosity is developed through environmental factors which are heavily influenced by the parent and personality traits which are within the domain of parental control and supervision.

Having established *why* some young children (may wish to) engage in fireplay the next group of literature will review the *how* and *where*.

How Children Light Fires

All of the literature reviewed during this study agrees with the general notion that matches and cigarette lighters are the predominant sources of ignition for the fires started by children. There is however, some dispute within the literature as to the exact extent of cigarette lighter usage.

In an analysis of referrals to the juvenile fire counselling program operated by the Portland Fire and Rescue Service in the United States, Porth has found that cigarette lighters accounted for between 95 out of 180 incidents in 1992-93 (52.7%) and 89 out of 199 incidents in 1996-97 (44.7%) with the intervening years providing figures within this range (Porth, 1998: 35). A study of a similar group by Kolko & Kadzin, (1994) however, placed the use of cigarette lighters at only 20% compared to 69.5% for matches (1994: 117). This latter data is supported by the (US) Federal Emergency Management Agency (FEMA) who in a study of child fires occurring in 1993 found that

22% of children used cigarette lighters compared to 58% who used matches (National Fire Data Center, 1993: 22).

Statistics from the South Australian Metropolitan Fire Service, however, suggest that around 45% of children referred to juvenile counselling in that State had used a cigarette lighter as their ignition source (Templer & Grossman, 1998: 3).

The reasons for such variation within the statistics may well be related to the particular age groups which predominate within each of the studies. Research by Porth and Hughes (2000) demonstrates that there are wide variations between age groups as to the preferred ignition source. By way of example their study found that of children in the age group of 1-5 years, 64.6% used cigarette lighters (20.8% used matches) whereas, in the 9-11 year group only 35.3% used cigarette lighters (54% used matches) (Porth and Hughes, 2000: 9). One reason which has been suggested for this age variation is that younger children find it easier to handle and use a cigarette lighter than a match (Foerger, 1999: 1).

In contrast to the level of their use, cigarette lighters do predominate within the studies into child fireplay injuries and deaths. FEMA (National Fire Data Center, 1993: 22) found that, 'over half (52%) of all children playing fires that resulted in an injury to a child was started with a lighter. In comparison, fires started with a match accounted for 32 per cent'. Hall (1995: 6) also argues that cigarette lighters are playing, 'an increasingly dominant role in fire deaths and injuries in child-playing fires'. The study which eventually led to the introduction of child resistant lighters also concluded that, 'the risk of death or injury per fire was higher for cigarette lighters than for matches' (Harwood, 1988: 39).

Kafry (1980: 50) provides a possible explanation for this higher risk with her observation that competence with fire increases with age. Therefore older children (who use lighters less frequently than their younger counterparts) may well have a better understanding of the potential dangers of fireplay and an awareness of how to react appropriately to a fire, whereas a younger child (who predominantly uses a lighter as the ignition source of choice) may lack both of these competencies and place themselves at far greater risk of both a fire occurring and adverse effects from any subsequent fire.

It is of particular interest to note that whilst the studies conducted by FEMA and Harwood were undertaken prior to the introduction of child resistant lighters (in the US) the comments by Hall were made more than twelve months after their commencement.

So whilst cigarette lighters are represented (at best) in less than 50% of the statistics for child fireplay and firesetting, this figure is much higher for younger children (the focus of this study) and represents by far the preferred ignition source. Alarming, this preferred ignition source also carries with it a much higher danger, in so much as the likelihood of injury or death, for the child concerned, is far greater from a fire ignited by a cigarette lighter than a match.

The issue of parental forethought and supervision has been raised by Porth & Hughes (2000: 7) in commenting on the availability and ease of access to cigarette lighters by young children. Studies by Kolko and Kadzin (1994) and Porth (1998) found that around 77% and 68% (respectively) of the children involved in their studies simply found their ignition source around the home, whereas, around, 22% actually sought it out (Kolko & Kadzin, 1994: 117, Porth, 1998: 38). As stated previously, Kolko and Kadzin have suggested that the availability of matches or lighters may influence curious children to exhibit an interest in fire (1994: 120).

There has also been the suggestion that the time of the day when fires are being lit highlights the importance of parental supervision. Porth and Hughes (2000) found that the median age for fires lit between 6:00 am and 10:00 am is 7.5 years whereas the median age for all other times is between 9.5 years and 12 years (Porth & Hughes, 2000: 8). One possible explanation for this is that this early morning period is often a time when children, who have awoken early, have a *free reign* prior to parents awaking.

There is evidence amongst the literature which supports the idea espoused in the earlier part of this chapter that children do show a level of *autonomy* and *initiative* when using these devices. The research by Harwood found that the young children studied, used a two handed grip in order to activate cigarette lighters. This is in contrast to the single handed grip which tends to be used by adults (Harwood, 1988: 42). This perhaps demonstrates that learning through modelling goes beyond simple imitation.

This factor may also be demonstrated through the research which has been conducted into the types of material which young children are igniting as part of their fireplay. It has been found that the majority of fires started by young children are ignited within a bedroom or sleeping area with bedding items being the material first ignited (FEMA, 1993: 7, Porth, 1998: 32 & Porth & Hughes, 2000: 8). Again, this would be in contrast to the areas where young children would be most likely to observe adult use of cigarette lighters (living areas, family rooms etc.) and the types of materials that they would be igniting (cigarettes, hotplates etc.).

The research which has been conducted then, into actual child fireplay behaviour does support the theoretical standpoint that there is a level of autonomy and initiative in this behaviour. There is also support (through the statistics cited on access to cigarette lighters, eg Kolko & Kadzin, 1994 & Porth, 1998) for the notion that the lack of parental forethought and supervision may be a contributing environmental factor leading to a child playing with fire.

The Parent

Whilst the issue of the parent as a role model has been discussed in some detail previously within this chapter, there has been further work done to identify specific behaviours which may promote a child's fireplay.

One of the obvious parental behaviours, where cigarette lighters will predominate, is that of smoking. The study by Porth and Hughes (2000) in the United States, found some evidence of a link between parental smoking and

child fire play. Their study found that just over half (53.9%) of fire setting children had parents who smoked. However, this level was significantly higher for the younger age groups. For those children between ages 1 and 5, 69.8% lived with a smoker and this level declined as the age increased. To place these figures in some context, it has been suggested that only 25% of American households have a smoker (Porth & Hughes, 2000: 6).

Similar figures have also been found in Australian studies. A study of referrals to juvenile fire counselling in South Australia during 1997 – 1998 found that 61.9% of the referred children had a smoker in the family (Templer & Grossman, 1998: 2). A similar study of referrals in Victoria found that 59% of those children referred to counselling had a smoker in the family (JFAIP, 1999: 3). Whilst statistics in relation to the numbers of households with smokers is not available for Australia, the results of the National Drug Strategy Household Survey (1998) do show that around 22% of adult Australians are regular smokers (Higgins, Cooper-Stanbury & Williams, 1998: 7). On an international basis Australia ranks below the United States in relation to per capita cigarette consumption (Higgins et al, 1998: 9).

Whilst none of these studies posit any direct link between parental smoking and child fire behaviour, the increased prevalence of smoking within the homes of child fire setters clearly suggests that such a link exists. Regardless of the actual smoking behaviour itself, there is clearly a link between the reasons that parents need or require a lighter and the subsequent issues of role modelling (as witnessed by children) and that of access to the lighters themselves.

There have also been those authors who have developed the themes of socio-economic and marital status as potential risk factors for child fireplay. In discussing the environmental characteristics which may lead to child fire play Nicolopoulos (1996) has included both; single parent home (usually with no father figure or a constant change of adult male) and, lower socio-economic profile as risk factors (Nicolopoulos, 1996: 3).

In relation to the first characteristic, Porth and Hughes(2000) have found that nearly 60% of children referred to intervention counselling came from single parent homes, whereas 26.6% came from homes where both parents were present (Porth & Hughes, 2000: 5). Intervention counsellors in South Australia and Victoria have reported figures for single parent families at 44% and 78% respectively (Templer & Crossman, 1998: 2, JFAIP, 1999: 3). Studies of actual child fire setters have confirmed the importance of marital status. Kafry's study (1980) found that children who engaged in fireplay were more likely to come from either single parent families or families where the father was absent (Kafry, 1980: 57). She also makes the following observations about this group:

‘Several mothers...were young single women who struggled for financial survival and for the enhancement of their own lives. They may lack child-rearing skills and are often helpless when they attempt to cope with the burdens of parenthood’

(Kafry, 1980: 57)

Gaynor, McLaughlin and Hatcher (1983) also concluded that many of the children involved in recurrent fireplay activities came from homes where the father was absent. They also support the sentiments of Kafry by suggesting that the single parent will often be preoccupied, especially providing financial support for the family (Gaynor, McLaughlin & Hatcher, 1983: 2.6).

The second of Nicolopoulos' characteristics (socio-economic status) has provided a far greater level of debate within the literature. Wooden & Berkey (1994) have described the problem of child fire setting as a *middle class* phenomenon whereas, others such as Hall (1995: 5) have suggested that poverty is a risk factor for child fireplay. This latter argument is supported by Gaynor and Hatcher (1987) who, in reviewing several studies on the subject, stated that there is, 'evidence showing strong representation of the lower income groups' (Gaynor and Hatcher, 1987: 56). Porth's study of children referred to intervention counselling over a six year period also found that the, 'firesetter population is predominantly at low income levels' (Porth, 1998: 20).

The other parenting issue which has been the subject of previous discussion is that of forethought and supervision. There is a range of authors whose comments have suggested that effective forethought can only come from proper education and motivation. Indeed research in the United States has suggested that one of three strongest variables related to fire risk is that of *under-education* (Nicolopoulos, 1997: 2).

It might not be surprising then that there is a large body of literature espousing the view that more needs to be done in the area of parental fire education. The research which led to the introduction of mandatory child resistant cigarette lighters actually made one further recommendation and that was that efforts need to be made to better inform parents of the hazard in order to reduce the numbers of fires, deaths and injuries (Harwood, 1988: 44). Research by Kafry (1980: 50) found that:

'Parents showed an acceptable level of fire knowledge and information, though many deficiencies were found especially in the area of prevention, preparation and skills (for example conducting home fire escape drills, instructing baby sitters about fire, leaving small children alone...)'

She concludes that those responsible for parental education should be encouraged to include fire information as an integral part of their work (Kafry: 1980: 51).

Gaynor and Hatcher (1987: 12)) also suggest that parents need to be, 'taught how to communicate appropriate skills so that [the child] will understand the dangers of fire'. Kolko & Kadzin (1994) have further posited that the education of parents needs to go beyond proactive practices but also needs to include skills related to the administration of swift, corrective consequences, integrating educational and skills training opportunities as part

of the parental reaction to fireplay or fire risk behaviour (Kolko & Kadzin, 1994: 120). This fits with the study by Kafry (1980) where it was found that a large percentage of parents do not deal with fire setting directly by giving constructive instructions and providing their children with fire skills and knowledge (Kafry 1980: 50).

Kolko and Kadzin (1994: 120) suggest that a lack of corrective measures following a fire setting incident may actually increase the likelihood for continued firesetting. However, authors caution that there needs to be a deal of care taken in the degree of corrective measures. For instance, Kafry argues that a total prohibition of the use of fire may not necessarily curb any firesetting behaviour (1980: 51) and Moore suggests (in relation to cautioning children in general) that too many warnings may in fact alienate a child against necessary and meaningful precautions (1972: 83).

A particular educational issue which has been highlighted is that of appropriate intervention. Gaynor and Hatcher (1987) suggest that many parents are hesitant to seek help for children with fire setting problems. They further suggest that this hesitancy is motivated by fear of serious consequences for the family. Dangerously, it would appear that, as a result of this, many parents play down the serious nature of firesetting and attempt to ignore it in the hope that it will go away (Gaynor & Hatcher, 1987: 10). Porth (1998), however, comments that the sooner action is taken in response to the first fire incident the more likely the behaviour will be confined (Porth, 1998: 39). This is confirmed in the study by Kolko and Kadzin (1994) which found that 61.7% of children would stop their firesetting behaviour if they received punishment or counselling (Kolko & Kadzin, 1994: 117).

The literature then provides somewhat of a framework upon which a model may be able to be applied to identify parents/families where the children may be at particular risk of developing fireplay and firesetting behaviours. Particularly it can be argued just as Hall (1995: 5) does, that the following risk factors directly relate to the child's family situation:

- lack of education
- single parent
- parental smoking
- poverty
- low parenting skills

Interestingly, several of these factors bear a strong resemblance to the factors listed by Bowley (1975) as contributing to a child being at *risk* from violence, delinquency and deprivation of basic needs within the general community. Particularly, Bowley highlights the issues of:

- The Immaturity of Parents

Parents with social and emotional immaturity (usually young) who see the child as a burden and offer unsatisfactory or partial mothering. The mothers frequently separate from partners.

- **The Inadequate Parent**

Parents who have had restricted educational opportunities. Through no fault of their own these conditions may militate against good parenthood.

- **Maternal Stress**

Mothers left alone to cope with children, especially where there is also a need to provide for the family will be unable to provide their children with the necessary levels of support.

So the literature suggests that there may be parallels between the risk factors for fireplay and firesetting behaviours and the risk factors for violence and delinquency. It may not be surprising then to note that many child firesetters, who are not appropriately dealt with, develop other anti-social and deviant behaviours in adulthood (Gaynor, Huff & Karchmer, 1987: 36).

It does need to be pointed out however, that these factors should not be treated as exhaustive. Whilst there is general agreement about these risk factors (perhaps with the exception of socio-economic status) none of the individual factors have been demonstrated to be applicable to *all* cases.

There is a general consensus within the literature reviewed in this study that there needs to be emphasis placed on both; the provision of fire safety training and awareness among parents and the provision of parenting skills which allow parents to deliver the appropriate response to instances of child fireplay and firesetting. This latter issue may also require that parents be made aware of the services available to assist and that any fears (in terms of negative family consequences) of using these services need to be allayed. There is certainly an argument that if an appropriate response is not delivered then further, much more serious, deviancies may develop.

It is also apparent among much of the literature (and this has been alluded to previously) that parents also need to be educated in the dangers which remain inherent within disposable cigarette lighters despite the advent of mandatory child resistance.

Cigarette Lighters

One of the very basic precautions, which is consistently repeated within the literature being produced, aimed at educating parents, is that of the safe storage of cigarette lighters. There are a plethora of guides, checklists and published warnings advising parents of the need to keep cigarette lighters out of the reach of children (eg. Parenting SA, 1996. CPSC, 1999. FEMA, 1998b). Considering the issues which have been highlighted within this study so far (including; fatality rates, use of lighters by young children, access to lighters etc.) it is little wonder that these warnings have been published. However, the

proponents of mandatory child resistance clearly believe in and espouse the view that many of these issues would be overcome by the introduction of the relevant regulations.

As an example, when the regulations were first proposed in New Zealand one parliamentary member made the comment that:

'The standard introduced...means that at least two hand movements are needed to ignite a lighter. Research has shown the motor skills of children under five are not well enough developed to allow them to operate the new types of lighters either deliberately or by accident'
(Gillon, 1998)

There should be no doubt at all that the literature reviewed during this study suggests that comments such as these are unsupportable.

In Australia, the Ministerial Council on Consumer Affairs published a one-off poster in the July 1997 edition of the *Australian Women's Weekly* to coincide with the imminent introduction of mandatory child resistance. The poster points out the dangers of disposable cigarette lighters and children by listing a number of incidents of serious injury or death. However, whilst it urges parents to buy only child resistant lighters, no mention is made of any other proactive steps that parents should also take (eg. keeping lighters out of reach etc.). An inference could be drawn from the poster that the child resistant lighters themselves offer all of the necessary protections. Perhaps this provides some evidence of the origins of the so-called *false sense of security* which was discussed in the previous chapter.

The regulations governing mandatory child resistance do, however, require that a warning in the form of, '*Keep Away From Children*' or '*Keep Out of Reach of Children*' be printed on every lighter (Trade Practices (Consumer Product Safety Standard)(Disposable Cigarette Lighters) Regulations – Regulation 12). This warning however, appears along with five other warnings which the regulation also requires to be printed on every lighter. So, six separate warnings are required to be printed on the small surface area of the average disposable cigarette lighter. It could be argued that these warnings are in fact so small as to be practically unreadable or eye-catching.

The Regulations also offer some insight into just why the regulations themselves should never be viewed as the sole answer to the issue of young children and cigarette lighters. Regulation 14 sets out the criteria to be met before a lighter can be certified as child resistant. The criteria (which uses the American standard) requires that a lighter should, 'be resistant to successful operation by at least 85 per cent of the child-test panel' (a child is defined as a person under five years). The logical conclusion here is that the regulations allow that a lighter (certified as child resistant) may be able to be operated by up to 15% of children under the age of five. Previous warnings to parents have argued that, 'no parent could possibly know whether their child falls into the other 15% or not' (Bahr, 1998).

Whilst, the introduction of mandatory child resistance for cigarette lighters is undoubtedly a worthwhile measure, any inference that the introduction of the relevant regulations provides all of the necessary safety requirements, cannot be supported by any of the literature reviewed as part of this study. Regardless of any other evidence which has been highlighted during this review, the regulations themselves imply that a danger still exists for a certain number of children within the targeted age group (under five years).

Intervention Resources

There is reference previously, to the availability of services designed to assist parents in successfully intervening in their child's fireplay behaviours. It is important that some discussion of these services be included here, not just so that there is an awareness of their availability but also because the resources and personnel of these services formed an integral part of the research design, as outlined in the following chapter.

Many fire services around the world now operate programs designed to assist families with children who have displayed dangerous fireplay behaviours. Gaynor, McLaughlin and Hatcher (1983: 1.3) suggest that fire services are, 'the most knowledgeable and capable organisations available in the community to help work on the problem of children and firesetting'. They further suggest that this is due to a number of factors, including:

- The status of fire fighters as community heroes
- Fire fighters are often the first service to the scene of a fire
- Fire Departments are often called by parents asking for guidance

Training of Counsellors

The Federal Emergency Management Agency (FEMA) in the United States has established a training regime for fire fighters involved as counsellors (often referred to as *practitioners*) in these programs. This model has been utilised by many fire services around the world including here in Australia. The purpose of this training is to:

1. Teach fire service personnel to recognise problems in children that may lead to recurrent firesetting
2. Teach fire service personnel how to interview fire-setting children and their families.
3. Teach fire service personnel methods and strategies for educating curiosity firesetters and their families. Fire service professionals can counsel or educate some firesetting children and families.

4. Teach fire department personnel to select children and families for professional mental health assistance based on the severity of their problems.
5. Teach the fire service ways to refer children and families for appropriate mental health assistance.

(FEMA, 1988a: 4).

Intervention Methodology

The methodology of the intervention process utilised by many fire services also follows the FEMA model of *Interview, Categorise, Intervene* and *Refer* (FEMA, 1988). To summarise this process the parents and child are first *interviewed* (at this stage a Family Interview and Evaluation Form is used – this will be referred to in the following chapter). The information gathered during the interview phase is then used to *categorise* the child into one of three categories (Concern, Definite Concern, Extreme Concern). Depending upon the level of *concern* an *intervention* program is established where the child can either undertake educational counselling usually administered by the fire service personnel or be *referred* to professional therapy.

One of the issues raised within the FEMA guidelines again relates to the importance of the parent, this time in the intervention process. For instance the guidelines for the conduct of the educational counselling contain ongoing reference to requirements such as, ‘adults in the household *must* be responsible for prevention’ and ‘the child should always be supervised in a room in which a fireplace, candle, heater or other open flame is present’. Furthermore the educational counselling program is predicated on the idea that it is the parents, supported by the counsellor, who have the primary role in its delivery (FEMA, 1988a: 31).

Summary of the Literature

The essential, recurring theme within the literature, which has been reviewed as part of this study, is that the parent plays a critical role in providing the environmental conditions favourable to child fireplay and subsequent fire setting.

In particular parents play a significant role in providing a model for children to develop their behaviours. Children will not only imitate their parents but seek possession of material objects, unless the child perceives that punishment will be applied for such actions. Inconsistent punishment or inappropriate corrective measures may not provide a clear perception of the wrongness of the action especially where the visual stimulus (such as observation of the model’s smoking behaviour) suggests some positive outcomes. There is clear evidence, in relation to child fireplay, that many parents lack the necessary skills to appropriately intervene and correct dangerous behaviours of their children.

Parents also provide the front line defence in preventing child accident and injury through their forethought and supervision. Whilst, none of the literature suggests that any parent is capable of supervising a child for 24 hours a day, indeed common-sense dictates the impossibility of such a task, the application of forethought has the potential to seriously reduce the opportunities for child fireplay. Simple steps such as placing cigarette lighters in areas where they are not readily available to children may remove what many (including Kolk & Kadzin and Porth) see as a major environmental contributor to child fireplay – access.

There is also evidence in support of the view that the parent's status (socio-economic, marital and educational) also creates an environment more conducive to child fireplay. Whilst none of these factors have been demonstrated to be in any way conclusive, and are certainly not applicable to all cases, they have also been recognised as a contributor to children at general risk of deviancy, delinquency and violence. Whilst marital and socio-economic status are difficult to control there are numerous authors who have argued for an increase in the educational opportunities for parents regarding; fire safety, parenting skills (especially in areas of intervention and behaviour correction) and the availability of resources.

It is also clear that none of these environmental factors have been mitigated by the introduction of child-resistant cigarette lighters, despite the predictions of their proponents. There continues to be property damage, serious injury and death as a result of young children being able to operate these devices.

Gaps in the Literature

The literature quite explicitly develops a nexus between the parent, the cigarette lighter and the child. What the literature fails to do, is to explain *why* this nexus, especially in relation to access, is allowed to exist in the first place. The literature pays very little attention to the underlying reasons why a parent would not take steps to prevent their child from accessing a cigarette lighter. Whilst the notion of a false sense of security has been posited previously, this idea remains untested.

A possible explanation, again highlighted within the literature, is that the parent may lack the necessary fire safety knowledge and awareness of the dangers of cigarette lighters. Why parents would lack this knowledge is again not fully explained within the literature. Reference has been made throughout the literature review to the numerous warnings and cautionary tales being continually presented through fire safety organisations, the media and even printed on the cigarette lighters themselves. Yet, it is apparent that parents (or at least those parents within the high risk group) are either not receiving or heeding these warnings.

It could be that this lack of awareness is somehow linked to these other environmental risk factors (eg marital, educational and socio-economic status), or there may be an element of denial (*it won't happen to me*). An

understanding of this may provide a model for the development and targeting of any future fire safety campaigns.

There has also been very little research conducted to test the *effectiveness* of the introduction of mandatory child resistant regulations. Whilst some small scale research has been conducted (referred to earlier) this has provided mixed results. These studies have based their conclusions upon the number of reported incidents, which may be influenced by a series of factors including; school fire safety campaigns, reductions in the smoking population and the increase in the number and scale of intervention programs. Although, effectiveness can be a difficult concept to operationalise there would appear to be a need for some effort to be made to look at the effect that the introduction of the regulations has had in isolation to these other factors.

The research questions addressed in this study indicate the need to fill the gaps in the current literature, viz:

- How are children accessing cigarette lighters as a means of fire setting?
- What is the significance of the parent in the fire setting behaviour?

The following chapters will explain the research process which was undertaken and the results and conclusions obtained.

CHAPTER 4.

RESEARCH METHODOLOGY

This chapter outlines the research carried out as part of this study, the results of which form the basis for the concluding chapters of this thesis.

An Introduction to Case Study Methodology

In order to address the research questions a qualitative, mixed method approach was utilised within a loose case study methodology. The notion of *looseness* is somewhat redundant as Punch suggests that the case study is more of a strategy than a method anyway (Punch, 1998: 150). There have been those authors who have suggested that because of this looseness the case study format is not a valid research method. This view is not supported by Sarantakos (1993: 260) who argues that case studies, 'are not second-rank research, nor a supplement to quantitative studies, but a research model that is equally significant and autonomous as is quantitative research'. Robert Yin also suggests that the case study is a, 'comprehensive research strategy' (Yin, 1994: 13).

A definition for the term case study is difficult to find. Bouma defines case studies in terms of their aim which, he suggests, is to describe, 'what is going on? Is there a relationship between x and y ' (Bouma, 1993: 89). In this

context, the case study format fits nicely with the research questions in this study, developed earlier. In order to achieve this aim Punch suggests that the basic idea of the case study is to study a small number of cases in detail, using whatever methods seem appropriate (Punch, 1998: 150).

In discussing the characteristics of a case study Punch (1998: 153) also suggests that multiple sources of data and data collection methods are likely to be used, a point also made by Yin (1994: 78) who suggests six possible sources of evidence:

- Documentation
- Archival Records
- Interviews
- Direct Observation
- Participant Observation
- Physical Artifacts

Yin views the use of multiple sources of data as a major strength of the case study method. He argues that their use allows for the development of, 'converging lines of inquiry', (or triangulation) providing a conclusion which is likely to be much more convincing and accurate (Yin, 1994: 92).

Two of the listed data collection methods are used in the completed study.

Research Design

1. Documentary Study

The first data collection method used in this study is a review of cases referred to the South Australian Metropolitan Fire Service's (SAMFS), Juvenile Fire Awareness and Intervention Program. In particular an analysis is made of the *Initial Interview Questionnaire* which is completed by the family of the referred juvenile as part of the initial information gathering exercise of the counsellor. This questionnaire is similar in design, format and purpose to the Family Interview and Evaluation Form referred to in the previous chapter (see page 40). A copy of the questionnaire utilised by the SAMFS is attached as Appendix 'A'.

These questionnaires provide some insight into the environmental factors highlighted in the Literature Review and the levels of awareness among the parents of these children toward fire safety and appropriate corrective measures.

The SAMFS permitted access to these documents under supervision and approval was received from the Faculty Ethics Committee (Division of Education, Arts and Social Sciences) of the University of South Australia to utilise these documents as part of this study. The SAMFS does have a policy that stipulates the destruction of these forms following the completion of the

counselling process and as a consequence only the documents for the period 1 July, 1999 to 1 March 2000 were available for analysis in this study.

Analysis of Documents

In all there were 31 children referred to the SAMFS intervention program during the period from 1 July, 1999 to 1 March, 2000 for which the Initial Interview Questionnaire had not been destroyed. In line with the particular focus of this study the documents were arranged into three groups from which the appropriate data was collected:

- Group 1.
Children who were at or under the age of seven years at the time that the intervention process took place. This group represents the particular target group and focus for this study.
It is also at around this age that Piaget suggests that a child's sense of morality moves from *absolute* to *autonomous* and other factors (such as peer pressure, anger and revenge) which are beyond the domain of the parent (as a model for fireplay behaviour) become dominant. This notion has been identified through the literature which shows a strong demarcation between the benign motivators, such as curiosity, and other more insidious motivators, such as anger and revenge, occurring at around this age.
Some particular interest was also taken in those children under the age of five years, this being the age group for whom the mandatory child resistant cigarette lighter regulations apply.
There were seven children in this group.
- Group 2.
Children who were over the age of seven years at the time that the intervention process took place but whose parents suggested that the child had lit their first fire when they were under the age of seven years (see question 24 – Appendix 'A'). Whilst this group was outside of the focus of this study the information available in relation to the initial incident(s) is applicable to the targeted group.
There were six children in this group.
- Group 3
This final group were those children who were over the age of seven years both at the time of their first fireplay incident and ergo at the time that the intervention process took place. These children provided very little in the way of information relative to the targeted age group.
There were 18 children in this group.

The actual analysis of the documents within each group was conducted along qualitative lines as cited by Sarantakos (1994: 207) where issues, main ideas, statements (and importantly) thoughts of the parents were collected and identified in respect of the major themes developed in the literature review.

However, whilst some simple analysis was undertaken in respect to frequencies the small sample size precludes any empirical conclusions.

2. Interviews

In order to provide an element of *triangulation* a series of interviews were also conducted to explore, in greater depth, the themes developed in both the Literature Review and Documentary Study.

Interview Subjects

Interviews were conducted with practitioners from the Juvenile Fire Awareness and Intervention Programs of the South Australian Metropolitan Fire Service, Metropolitan Fire and Emergency Services Board (Melbourne) and the Country Fire Authority (Victoria). Four of these practitioners were interviewed with a combined experience of 23 years as juvenile fire counsellors. In all these four practitioners had been involved with a total of around 1,000 children who had been referred to the respective fire service programs. A further interview was also conducted with a fire cause investigator with the South Australian Metropolitan Fire Service.

All three fire services agreed to take part in these interviews and again approval was sought (and granted) from the Faculty Ethics Committee prior to the interviews taking place. Prior to the interviews being conducted each subject was briefed on the purpose of the study and the interview itself. A formal *Consent Form* was handed to each of the participants which outlined the ethical issues in regards to the treatment of the interview data. Each participant read and signed the consent form prior to the interviews taking place. A copy Consent Form is attached as Appendix 'C'.

Conduct of the Interviews

The interviews were conducted using an *open ended* style and, in keeping with the case study format, the participants were asked not only to state the facts of the matter but also to provide opinions about events (Yin, 1994: 84). In keeping with the *unstructured* nature of the open-ended interview a formal interview schedule was not utilised but specific questions were allowed to emerge as the interviews unfolded (Punch, 1998: 176) The interview subjects also lent themselves to the case study format as they are (as part of their daily duties) focussed, 'directly on the case study topic' (Yin: 1994: 80).

All of the interviews were conducted in the offices of the respective participants and they were recorded via audio tape.

Analysis of the Interviews

The collected interviews were assembled and analysed in line with the four main steps of qualitative interview analysis proposed by Lamneck (cited in Sarantakos, 1994: 305).

- **Transcription**
The audio recordings were transcribed onto both hard copies and computer disk formats. The transcripts were reviewed and *cleaning* and *editing* undertaken.
- **Individual Analysis**
Each interview was analysed on its own and responses grouped into themes.
- **Generalisations**
Differences and similarities between the interviews were identified and a series of broad themes were developed into which responses could be grouped across interviews. Where possible the same themes were used as had been developed during the Literature Review and Documentary Study.
- **Control**
The information was verified by continual reference back to the original audio recordings and initial transcripts. There was an effort made to ensure that responses were not taken out of context and that those responses made *flippantly* or *tongue-in-cheek* were not presented as fact.

Methodologies in Previous Studies

The study conducted by Wooden and Berkey and published as *Children and Arson – America’s Middle Class Nightmare* (1984) has been cited extensively within the previous chapters of this thesis. Whilst the focus of their study was aimed at the exploration of the psychology of juvenile firesetters the methodology that they employed is very similar to that used in this study. Again they utilised an interview questionnaire based upon the *Family Interview and Evaluation Form* (a copy of their questionnaire is attached as Appendix ‘B’) essentially the same document used in the first data collection stage of this study (Wooden & Berkey, 1984: 215). They also interviewed, ‘public officials who investigate these cases as well as those who rehabilitate the young arsonist’ (Wooden & Berkey, 1984: 3).

A number of other studies cited throughout this thesis have also utilised the *Family Interview and Evaluation Form* as the basis for their research. These include (Porth, 1998., JFAIP, 1998., Porth & Hughes, 2000).

Limitations of This Methodology

In expressing caution about the use of the *Family Interview and Evaluation Form* Wooden and Berkey (1984: 26) state:

‘In accepting the parents answers as pure fact, however, we recognise the fact that their responses may not be entirely indicative of their youngster’s actual behaviour’

These same words of caution are applicable to this study, (where essentially the same document has been used) however, there is a slightly different focus in this case, where it is responses of the parents themselves which are of interest not specifically the behaviour of the child.

There are, however, some limitations in the in-depth exploration of the themes revolving around the levels of awareness, knowledge etc. of the parents. Those counsellors and investigators who were interviewed do not provide a measure of the actual levels of knowledge of the parents but merely their opinions on such issues. In most cases these opinions were fairly generalised, although, some specific cases were cited. This study, then should not be viewed as providing the absolute answers to the research questions but it does indicate where further study needs to be made.

This study initially intended to conduct the research into the attitudes, behaviours and levels of awareness among parents on a more phenomenological basis. It was initially proposed that the interview phase would be directed at the parents themselves so that their perceptions could be directly studied.

In order to achieve this assistance was sought and granted from the counsellors of the South Australian Metropolitan Fire Service's, Juvenile Fire Awareness and Intervention Program, who acted as key informants. Their role was to approach the parents of young children (those under seven years) referred to the program with a view to informing them of the study and seeking their consent to participate. To assist in this process an Information Sheet was prepared outlining the purpose of the study and the strict confidentiality guidelines which would be followed. Again approval for this methodology was received from the Faculty Ethics Committee.

This process began upon receipt of the appropriate approvals and continued for six months. The SAMFS counsellors advised that they made approaches to around fifty parents (including several from past cases which were undergoing follow-up), however, not one single parent agreed to take part.

This perhaps highlights the issue of *fear of family consequences* which was cited earlier as a reason why parents are loathe to seek assistance. This will be further discussed later.

Summary of Methodology

The methodology described in this chapter was chosen so as to provide the best *available* data in seeking to address the research questions. Whilst, it is recognised that the documentary study and the interviews have their inherent limitations they remained the most readily available sources of data throughout the study's progress.

Despite the failure of the phenomenological methodology, the case study format which was used did provide the basis for substantial findings which are discussed in the final chapters of this thesis.

CHAPTER 5.

RESULTS

This chapter outlines the results obtained from both the analysis of the SAMFS documents and the interviews conducted with the fire service professionals.

Documentary Study

The responses to the Initial Interview Questionnaire have been grouped and discussed within a series of themes, developed within the previous chapters of this thesis. As discussed in the previous chapter, two groups of documents are of particular interest:

- *Group 1* are those children who were at or under the age of seven years at the time that they received fire play counselling.
- *Group 2* are those children over the age of seven years at the time that they received counselling but who have indicated that they lit their first fire when they were seven years or younger.

Age and Gender

Within the total group of children who were counselled by the SAMFS Juvenile Fire Awareness and Intervention Program between 1 July, 1999 and 1 March, 2000, 29 (of 31) were male (93.5%). Of those seven children included within *Group 1* all were male.

Whilst this study reviewed only a small number of cases, the ratio of males to females was not inconsistent with that which has been found in previous studies (ie Porth –1998, where males comprised between 81.6% and 90.9% of referrals). This thesis supports the view that males are *predominant* within child fireplay statistics.

In response to Question 24 of the Questionnaire, ‘*How old was your child when he/she first showed an interest in playing with matches or lighting fires*’ the parents of those children within both *Group 1* and *Group 2* indicated an age range as follows:

Age (Years)	1	2	3	4	5	6	7
No.	0	5	3	1	2	1	1

This represents an average age of 3.28 years for these two groups. In contrast, the average age at which the children from these groups were referred to counselling was 7.9 years. Within *Group 2* especially, there were some concerning gaps between the ages at which children first exhibited fireplay behaviour and the ages at which they were referred to

counselling. This included one child who first lit a fire at the age of two years but was not referred until age 11.

Again, these results support views raised in the relevant literature, especially that espoused by Gaynor and Hatcher (1987: 10) that parents are hesitant to seek help for their children – a hesitancy which arises from a fear of serious consequences for the family.

Motivation

The literature reviewed in this study shows that the overwhelming motivating factor for young children (those seven years and younger) to engage in fireplay activity is that of curiosity. Data related to motivation was available within the questionnaire responses. The parents of those children within *Group 1* (at or under the age of seven years) indicated that *curiosity* was the motivator for three, whilst there were two who indicated that *anger* was the prime motivator and two who responded as *don't know*.

Taken on their own, these figures do not represent the overwhelming majority found within the literature, however, Wooden and Berkley (1984: 45) posit that one of the tests for *curiosity* is whether or not the child is, 'bent on destruction when they play with fire'. In response to question 45 of the questionnaire, '*Do you think your child was deliberately trying to destroy property or injure someone by starting the fire?*', not one parent indicated *yes* (six answered *no* and one *don't know*).

It could be argued that the parents' responses suggesting that the fires were not lit for the purpose of damaging property or causing injury do indicate that *curiosity* was the prime motivating factor.

Method of Fire Lighting

Previous studies have shown that cigarette lighters are the predominant ignition source among young children, especially those within the age group of 1-5 years (Porth & Hughes, 2000: 9). Of those children in *Group 1* of this study, four of the seven used cigarette lighters as their ignition source. Of the remainder, two used matches and one used the stove. The four children who used cigarette lighters were all aged five years or younger.

Not only does this support the conclusions of previous studies but also reiterates the important questions about the efficacy of *child resistance* of disposable cigarette lighters as the relevant Regulations are targeted at children under five years of age.

The locations of fires set by the children in this group and the materials ignited also supports views expressed in the literature that young children tend to light fires in or around the home. Whilst previous research has shown that a majority of fires lit by young children were lit in bedrooms or sleeping areas, where bedding materials were ignited (EG FEMA, 1993: 7, Porth & Hughes, 2000: 8), there was a greater range of household areas indicated within this

study. Six of the children in *Group 1* lit their fires around the house with the specific locations including areas such as; backyard, bedroom, toilet and kitchen.

Access

Within the literature, the issue of access to ignition sources has been shown to be a major environmental factor contributing to young children experimenting with fire. In this study the parents of the children within *Group 1* indicated that six of the seven children had *found* (or innocently come across) their ignition source whilst one had gone *out of their way* to locate it. Some of the parents made specific reference to the types of locations where the ignition sources were *found*. These included; cigarette lighters being left on kitchen benches and in lounge rooms by the parents themselves and one case where a friend left matches in an accessible area.

In contrast to the above responses the same group of parents overwhelmingly answered question 31, '*Do you try to keep matches and/or cigarette lighters out of the reach of your child?*' , in the affirmative, with six out of seven responding *yes*.

These results indicate that young children do find their ignition sources in easily accessible locations. However, there is insufficient detail within the questionnaire to establish any link between ease of access and stimulation for children to exhibit an interest in fire as proposed by Kolko and Kadzin (1994: 120).

The apparent contradiction between the responses in regards to where the children accessed their ignition sources and the attempts by parents to keep these sources out of reach of their children is somewhat difficult to reconcile. What it may indicate is that parents are *aware* that these devices pose a risk but underestimate both, the inquisitiveness of their children and the precautions which need to be taken in regard to access.

The Child

The previous research indicated that there are *personality* variables which may contribute to the advent of fireplay. The study by Dista Kafry (1980: 52) described this personality as *rascality*. Kafry typified this by describing traits, some of which have a resemblance to those traits found within children diagnosed with Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD). Research from Victoria and South Australia showed that between 21% and 39.2% of those children referred to counselling, for fire fireplay behaviour, have been diagnosed with ADD or ADHD (JFAIP, 1999: 7 & Templer & Crossman, 1998: 2).

Within the children of *Group 1* only one had been diagnosed with ADD. However, the parents of four of the other six children indicated that their child had received some other form of behaviour counselling or therapy

(Question 66a). Four of the seven children also had problems with behaviour at school (Question 61a).

Within the children of *Group 2* two had been diagnosed with ADD or ADHD whilst two others had problems with behaviour at school. (It should be pointed out that this section of the questionnaire was not completed for one of the six children in this group).

Between the two groups then, three had been diagnosed with ADD or ADHD and a further five have behavioural problems at school. This represents around 66% of the children within the two groups who have some form of recognised behavioural problem.

Whilst the specifics of the behaviours are not alluded to, there is some support in this study for the notion that the *rascal* type behaviour (as described by Kafry) is prevalent among children involved in fireplay.

The Parent

The literature (including Kafry, 1980, Gaynor & Hatcher, 1987 & Kolko & Kadzin, 1994) describes the role of the parent as both a role model for their children and as an educator. One of the parental behaviours which has been identified as lending itself to modelling and subsequent fireplay by children is that of smoking (Porth & Hughes: 2000: 6).

The questionnaire responses indicated that of the 13 children who comprised *Groups 1* and 2, eight lived in households where there was a smoker present. The figure is, however, higher for *Group 1* (younger children) where five out of seven children lived with a smoker. For *Group 2* the figure was three out of six children. Whilst the samples are only small there is some support for the views of Porth and Hughes (2000: 6) who found that smoking is more prevalent in the homes of the younger child firesetters than older ones.

One of the critical issues identified for parents as educators, is that of providing appropriate response and corrective measures to fireplay behaviour. Particularly there was the view that parents should deal with these incidents by providing their children with constructive instruction (Kafry, 1980: 50).

In this study none of the parents in *Group 1* indicated that their reaction to the fire incident included any form of instructive explanation to the child (question 54a). All of the parents indicated that their reactions ranged from *Anger* to *Distress*. Of the older group of children (*Group 2*) only one parent indicated that an attempt was made to provide explanation to the child. Again, *anger* was the predominant response.

The range of punishments meted out by the parents (see question 54b) also suggests a lack of constructive instruction. Only one parent within the two groups indicated that any form of explanation was given to the child as to the dangers of fireplay, whereas, the other punishments ranged from *grounding*, *loss of privileges* (especially *no TV*) to physical punishment (*smacking*).

There is support for the previously expressed view (Kafry 1980: 50 & Kolko & Kadzin, 1994: 120) that some parents are deficient in the parenting skills required to successfully intervene in their child's fireplay behaviour.

Previous studies have also linked the parent's socio-economic and marital status to child fireplay risk (Nicolopoulos, 1996: 3). Whilst, socio-economic status could not be measured there was some data available as to marital status. In contrast to the findings of Porth and Hughes (2000: 5) where 60% of child firesetters came from single parent families this study found that only four of the thirteen children comprising groups 1 and 2 came from single parent households.

This thesis is unable to support the notion that marital status is as significant a risk factor for the development of child fireplay behaviours as has been espoused in previous research.

Summary of Documentary Study

Whilst the sample involved in the documentary study is small there is broad agreement between it and the themes developed throughout the relevant literature. In particular, and focussing on the parent, the importance of issues such as; *parental forethought* in regard to access to ignition sources, *parenting skills* in relation to appropriate intervention and correction of child fireplay behaviours and *parental fear* of not involving professional assistance until much later, have received support within this study. There is less support for other environmental contributors such as parental marital status, as a risk factor, within this study.

The study also agrees with the notion that males predominate within child fireplay statistics and that the males involved are more likely to have behaviours described as *rascality* and typified by such medical diagnoses as ADD and ADHD.

The study also provides evidence that for children within the targeted age group, the regulations designed to introduce an element of child resistance to disposable cigarette lighters are ineffective, as these young children are able to and do continue to light fires using these devices.

These issues were further explored in the interviews conducted with the fire counselling and fire investigation professionals.

Interviews

The interviews conducted with the five fire service professionals produced a range of themes which are analogous with those developed within the literature and the documentary study.

The Child

The four counsellors interviewed all proffered the view that children under the age of seven years represent a large proportion of the children who are referred to the intervention services. On a percentage basis the counsellors suggested that this proportion was between 40% (at the lowest end) and 60-70% (at its highest). This view (especially the higher figures) does not concur with the figures from the documentary study where only 13 children out of a total 31, fell into either *Group 1* or *Group 2*. This may indicate that these younger children are (for whatever reason) making a far greater impression upon the fire service counsellors.

Only one of the participants made any direct reference to the personality factors which have been discussed in the literature and documentary study. In this case reference was made to the link between ADD and early morning fires. This particular participant suggested that a child with ADD tends to waken much earlier than their parents and can spend several hours in the house totally unsupervised.

Motivation

All of the interview participants agreed with the previous findings that the primary motivator for young children (those under seven years of age) is curiosity, and several different terms, such as *inquisitiveness*, and *opportunity* were used by the participants to describe this behaviour. The one fire investigator who was interviewed was unable to recall any fire that he had attended, involving a young child, where there was anything *malicious* in regards to the behaviour.

Method of Fire Lighting

In particular regard to those children under the age of seven years, the participants all agreed that cigarette lighters were the predominant ignition source. One of the participants believed that cigarette lighters accounted for, up to, 90% of all fires lit by children within this age group. There was also agreement with the notion that these younger children find matches much harder to use and prefer cigarette lighters.

All of the participants have been serving in their respective roles prior to and since the introduction of the child resistant regulations in 1997. None had noticed any decrease in the numbers of children (under the age of five years) being referred to the intervention programs (and who had used cigarette lighters) since the introduction of these regulations.

In relation to the cigarette lighters themselves several of the participants passed comment on how they may be made somewhat safer. These comments included:

- Lighters not being so colourful
- Warning label needs to be bigger

- Should be banned from sale to children – just like cigarettes

There was also broad agreement with the literature within the responses to questions concerning the areas where these children were lighting their fires. Again, the house features as a central zone of activity with particular reference made to bedrooms and the garden.

The participants were asked why, they thought, cigarette lighters featured so highly within the figures. Their responses mirrored the themes developed previously, especially the themes of access and availability and smoking.

Access

The issue of access was one which created a great deal of discussion among all of the participants. Several of the participants recounted stories where young children had to go to some extraordinary lengths in order to access these devices (including a set of twins, where one balanced on the other's shoulders to reach a lighter which had been placed at a very high position). In the main, however, all agreed that lighters appear to be quite readily accessible to children and that very few needed to go to the sorts of lengths described above.

One of the alarming issues to arise from these discussions was the number of parents who appear to have little regard for the numbers of cigarette lighters within the home and who fail to keep track of their locations. Part of the counselling process which was described during the interviews was a *game* played in the child's home, where children would be asked to go off and find as many cigarette lighters as they could in order to receive a reward. It appears as though there is universal disbelief among the parents when the child returns with a *hoard* of lighters. One particular case which was recounted highlights this alarm:

'I have seen kids hoard cigarette lighters and matches and one kid astounded me one day and found thirty-two cigarette lighters around the house that mum didn't know were there.'

(In this particular case the lighters were being collected by an older sibling).

A further issue which is also cause for some alarm was the experiences of one of the counsellors who had found that several of these children (under seven years) had actually been able to purchase lighters from retail outlets themselves.

The Parent

The notion that parents have developed a *false sense of security* in relation to child resistant cigarette lighters received considerable support from the participants. All made comments such as:

‘They [parents] thought that they were safe and that they could be left out for the children to play with or for the children to have access to. Because they had a safety catch on them they were very surprised that the children could actually circumvent that’.

‘I can remember three cases, I have spoken to, where the parents were actually shocked. They thought that their lighter was safe with the children and that was the predominant reason why they didn’t go to any extra lengths to hide them or make them less accessible.’

The discussions with all of the participants invariably linked access with smoking:

‘[the cigarette lighter is] just left sitting on top of mum’s cigarette packet or mum’s spare lighter is always in the drawer in the kitchen or something like that.’

Parental smoking was raised as the second most important environmental risk factor (after access) for child fireplay. Most of the participants agreed that a majority of the parents of children (especially those children under seven years of age) involved in fireplay were smokers. This view is in general agreement with both the literature and the documentary study and highlights smoking as a risk factor for child fireplay. This is confirmed by the vast discrepancies which exist between the numbers of smokers in the community (22% for Australia) and the incidence of smoking in the homes of young children involved in fireplay (up to 69.8% - Porth & Hughes, 2000: 6)

The issue of the level of parenting skill, especially in relation to appropriate correction and intervention, was raised as an issue by several of the participants who suggested that their experiences were that some parents become frustrated if the child does not comply with verbal commands such as, ‘don’t do that’ whilst they expended very little time or energy in providing practical instruction or explanation. There was also a feeling that some parents considered that the intervention programs were solely for the benefit of the child and that they had no part in the process, whereas, the counsellors are at pains to point out that it is an education program for the whole family.

On the subject of education, the participants were unanimous in their views that more needs to be done to educate parents, including in regards to cigarette lighters.

‘What I think would be very valuable would be a more targeted

public awareness campaign about... the dangers of devices in the house, not just matches and cigarette lighters but raising public awareness about the dangers of smoking, cigarette lighters, how fires start. I believe and I'm still a bit surprised by people's lack of awareness of how fires start within the home.'

There was also a suggestion that the *targets* of any program should include, lower socio-economic and Asian groups. It was indicated that this latter group was of particular concern due to an increasing rate of smoking and the cultural use of fire. It was interesting to note that only one of the participants referred to socio economic status as an environmental factor, in an unqualified sense. (The only other reference was made by a participant whose area of responsibility is a predominantly low socio-economic area).

Summary Of Interviews

The interviews provide the first real evidence that the notion of a *false sense of security* is affecting the judgement of some parents in regards to cigarette lighter; use, storage and access. Like the previous documentary study and the review of literature there is agreement that the issue of access to cigarette lighters is a critical factor contributing to young children's fireplay behaviour.

There is also evidence (again in support of the previous research) that some of the parents being encountered by the fire service professionals do lack the necessary knowledge and parental skills required to ensure the safest possible environment for their children and to provide an appropriate response to any subsequent fireplay behaviour. Again, education is seen as a means of improving the level of knowledge.

Evidence was also forthcoming in regards to one possible measurement of the *effectiveness* of child resistant cigarette lighters. Anecdotal evidence provided by the participants strongly suggests that there has not been any noticeable decrease in the instances of young children using disposable cigarette lighters to light fires since the introduction of the relevant regulations. Indeed, specific references have been made to children as young as three years being able to use these devices.

There were also suggestions put forward concerning how cigarette lighters may be made safer and how any parental education program should be targeted. These suggestions have been considered within the concluding comments of this thesis which follow.

CHAPTER 6

CONCLUSION

This thesis set out to address two specific research questions:

- How are children accessing cigarette lighters as a means of fire setting?
- What is the significance of the parent in the fire setting behaviour?

These questions have been explored through a review of the relevant literature and qualitative, case study research using documentary and interview methods. From within this collection of information and data, it is now possible to posit potential answers.

The issue of access has been recognised as a major environmental risk factor which may promote children to experiment with fire. It has been previously suggested that children have been able to access cigarette lighters as a fire lighting tool due to a *false sense of security*, within the parents and other carers, as to the dangers of these devices. This false sense of security manifests itself by the parent not taking the appropriate steps to ensure that cigarette lighters (and indeed other devices) are stored in areas which are *out of reach* of children.

This study does provide support for the above notion. Furthermore, there is also evidence that this false sense of security may actually arise from the *misinformation* which is being provided via the media and indeed public authorities as to the true dangers of these devices. There have been a number of examples cited throughout this study where the term *child proof* has been used to describe the safety features of *child resistant* cigarette lighters. There should be no doubt that children (including those specifically targeted by the relevant regulations – under five years) are still able to operate disposable cigarette lighters and that the use of the term *child proof* cannot be supported, either by the research or by the very regulations which established the child resistant regime. Within this context it is little wonder that some parents may not provide the appropriate levels of forethought and supervision when assessing the inherent dangers which may affect the safety of their children and the need (or, indeed necessity) to ensure that cigarette lighters are kept well away from children.

It could be argued, therefore that children are accessing cigarette lighters and subsequently involving themselves in fireplay because there is an understating (through the use of terms such as *child proof*) of the true danger of these devices. A deficiency which is not necessarily any fault of the parents themselves. This awareness of the dangers is relevant to the latter of the research questions.

It is clear that parents are not receiving appropriate levels of education and training which would allow them to properly identify that cigarette lighters pose a serious hazard. This, however, is only a part of a much wider educational deficiency which, if provided to parents, may allow them a much greater degree of empowerment in dealing with the fireplay behaviours of their children.

There is evidence to show that some parents (at least) have not been exposed to information which may greatly assist them in not only preventing

fireplay behaviours but also appropriately dealing with any incidents before the behaviour leads to tragedy. This study has shown that some parents fail to intervene and apply appropriate corrective measures when first confronted with their child's fireplay activities. This failure has the potential to further encourage continual fireplay by the children concerned, especially when there is also a reticence to seek external professional assistance for their children's behaviour either through fear of the consequences or ignorance of the existence of such assistance.

It is clear that many fire incidents could be avoided if parents were provided with the parenting skills which empowered them to successfully deal with such behaviours or, seek the necessary professional help.

Parents also need to be reminded of the role that they play as a model for their young children. Whilst, a small percentage of young children do have a psychological dysfunction, the fireplay behaviours exhibited by many children (indeed, research shows that most young children have a fascination with fire) are not symptomatic of an abnormal or troubled child. They form a part of the child's normal development and exploration of their environment. Children, especially the very young, gain their cues from their parents. A parent, who has been provided with the appropriate information, can introduce their children to fire in a controlled manner which mitigates the child's need to experiment on their own – with sometimes tragic consequences.

Recommendations

Whilst it is not a stated purpose of this thesis, the study has produced data which does lend itself to the construction of a set of recommendations.

Cigarette Lighters

It would be wrong to suggest that the regulations in relation to mandatory child resistance for disposable cigarette lighters have *failed*. It is clearer that expectations surrounding these regulations are not achievable. Much of the problem appears to have arisen from improper information and an overstatement of the potential of the regulations which has led to a *false sense of security*. Clearly, however, in relation to disposable cigarette lighters a number of further steps could be taken, viz:

- The use of the term *child proof* should be discouraged within media reporting of incidents. Those who speak with some authority about the subject should also ensure that the term is not used.
- Sale of cigarette lighters should have similar controls to those which exist for cigarettes and other tobacco products.
- The cigarette lighters should be produced with more bland colours and with more obvious warning labels.

Parental Education

There is an obvious need for a far more pro-active educational response, aimed at parents, as a way of preventing fireplay incidents to complement the, existing, reactive services. The issues which need to be covered have been discussed previously and include:

- Parenting skills, especially in regard to intervention and corrective measures
- Fire safety education
- The availability of professional assistance

Whilst, a campaign aimed at the entire population would be of the greatest benefit, it may also be possible to limit the impost by targeting any educational campaign at the following groups:

- Parents of boys, especially those diagnosed with ADD or ADHD or who have recognised behavioural problems.
- Parents who are smokers.

Several fire services already have material developed for delivery of fire safety information to the parents of young children. However, a lack of resources has seen these programs under-utilised. If the fire services received the proper levels of support then their programs could not only be delivered more widely but, they could also be augmented by bodies such as Parenting SA delivering programs concerned with parenting skills.

Of course, in this era of economic rationalism, the funding for such programs becomes, in itself, an issue. Whilst it is not the purpose of this thesis to canvass for funding, one option which could be explored (in line with the link between child fireplay and smoking) is the use of an extremely small percentage of federal government tobacco taxes. Net Australian Commonwealth Government revenue from tobacco products in 1997-98 was \$4.2 billion (Higgins, Cooper-Stanbury & Williams: 1998: 11)

The issues of socio-economic and marital status have been raised within the literature as being environmental risk factors. However, these factors did not feature prominently within the results of either of the two research methods used in this study. The issue of ethnicity (Asians) was also raised in the interviews. This issue would require further study before any conclusion could be made as to the validity of targeting these particular groups in any educational campaign.

Concluding Comments

No parent can ever be expected to maintain a constant vigil over their children. Nor, can it ever be expected that any process could effectively counteract the inherent need within developing children to explore and experiment. However, whilst total prevention of child fireplay may be

impossible, there are steps which can always be taken to minimise the risk. Whilst, the essential and critical provider of these is the parent, this does not mean this is the parent's responsibility alone. Government has traditionally played an important role in the provision of public safety. Through the enactment of laws and regulations many safety issues have become mandatory requirements (EG pool fencing, seat belts and child restraints). However, there are some things which can never be corrected by statute.

If Government is serious about the provision of child fire safety then there does need to be more done in the provision of training and education for parents so that the prevention of child fire incidents does not rely upon a mechanical device but on an environment which provides children with the necessary growing experiences with the minimal level of risk

Parents do need to understand the importance of their role and actively seek out the appropriate information (providing that such has been made available) and empower themselves to provide the safest possible environment for their children.

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ANNOTATED BIBLIOGRAPHY

- 1. Nicolopoulos, N. et al, 1996a, *Fires Caused By Children 1987-1994*, NSW Fire Brigades Statistical Research Paper, Issue 2/96, May 1996.**

This report presents the findings of a study of fires caused by children between 1987 and 1994 in New South Wales. Of the 221,551 fires attended by the NSW Fire Brigade between 1987 and 1994 nearly 47,000 were reported as being caused by children. Although the number of fires and the proportion of fires caused by children has declined between 1987 and 1994, children lighting fires remains a leading cause of fire. Direct dollar loss to structures alone amounted to over \$24 million between 1987 and 1994, and has increased by almost 12% since 1987. A change in cause classification and the training of personnel in fire cause investigation has contributed to the decline in the number of fires reported as being lit by children. This paper also outlines some intervention approaches by the NSW Fire Brigades in dealing with children lighting fires.

- 2. Nicolopoulos, N. et al, 1996b, *Fires in the Home 1987 – 1995*, NSW Fire Brigades Statistical Research Paper, Issue 3/96, October 1996.**

Fires in the home represent over 60% of all fires in buildings recorded by the NSW Fire Brigades and have increased by over 30% since 1987. The majority of our civilian fire deaths (77%) and injuries (71%) continue to occur in residences. Since 1987 civilian injuries and fatalities from house fires have jumped by 54% and 81% respectively. Direct dollar loss from fires in the home amounted to nearly \$397 million between 1987 and 1995, and has increased by 92% over the period in terms of constant 1995 dollars. Only 3% of households had

no smoke alarms. This analysis of fires in the home, over the nine years from 1987 to 1995, attempts to find out why, when and how they occur. The report also provides some hints for home fire safety.

3. **Nicolopoulos, N. et al, 1997, *Socio-Economic Characteristics of Communities and Fires*, NSW Fire Brigades Statistical Research Paper, Issue 4/97, June 1997.**

The purpose of this research paper is to examine the relationship between the incidence of fires and the socio-economic characteristics of communities; and to indicate that the fire risk varies significantly across communities according to their socio-economic and demographic composition. The research also serves to highlight to fire service management and stakeholders the need to understand the communities they protect in order to effectively manage the risks of fire and assist the community to manage the risk of fire itself.

4. **Commonwealth of Australia, Statutory Rules 1997 No.1, *Trade Practices (Consumer Product Safety Standard) (Disposable Cigarette Lighters) Regulations*. Regulations under the Trade Practices Act 1974.**

Regulations governing the sale, accreditation and import of disposable cigarette lighters in Australia. Fully effective on 1 October 1997.

5. **Templer, E & Crossman, G., 1997/8 *Juvenile Firesetters Intervention and Education Program – Annual Report, South Australia Metropolitan Fire Service. Unpublished Report***

Provides statistical data on all cases referred to the program during this period. Included are numerous brief case studies which explore individual cases in more depth. Questionnaire used during the counselling interviews is included.

6. **Bahr, P. 1998, ‘False Sense of Security Over Lighters’, *The Advertiser*, Letter to the Editor, 16 September 1998.**

7. **ACCC, *News for Business – Disposable Cigarette Lighters*, Australian Competition and Consumer Commission Pamphlet.**

Provides a summary of the Disposable Cigarette Lighter Regulations and explains the role of the ACCC in enforcement.

8. **‘Protect the Light of Your Life’, 1998, *Australia’s Parents*, December/January p. 30.**

Brief article describing the introduction of the Cigarette Lighter Regulations. Quotes statistics from NSW Fire Brigade alleging that 76% of all fires started by children are the result of oversight by parents.

9. George, M., 1997, *Free Disposable Cigarette Lighter Swap*, Media Release, Women's and Children's Hospital, 7/8/97.

As part of a campaign to promote the introduction of the cigarette lighter regulations Kidsafe offered a free swap of old lighters for new at several Adelaide metropolitan shopping centres.

10. Ellison, Hon. C (Minister for Customs and Consumer Affairs), 1997, *Tight Regulations For Lighters to Ensure Children's Safety*, Media Release, 30 September 1997.

News release on the eve of the introduction of the cigarette lighter regulations. Quotes made by the Minister include:

“The priority here is to eliminate the cause of some horrific injuries and deaths”.

“The ban has been extended to cover cheap, refillable lighters and has been taken to ensure the safety and welfare of Australian children.”

11. Scott, I., Letter to Mr Col Lewis, ACCC, 3 June 1997.

Letter expressing the concern of 'Kidsafe' at the prevalence of Sub-standard and Illegal Cigarette Lighters entering Australia in contravention of the Regulations.

12. Parenting SA, 1996, *Child Safety*, Parent Easy Guide No. 46, Pamphlet produced by Parenting SA, 1996.

Provides a child safety checklist for parents. Included is the comment:

“Remember that many toddlers can light matches and lighters...”

13. Bahr, P.A., 1997, 'When a Child's Fascination Gets Out of Hand, Firesetting Intervention for Children', *Police Journal*, May 1997, pp6-7.

Article outlining the difficulties faced by emergency service workers when dealing with the deaths of children, especially in fires. The frustration felt when the deaths, caused by fire, could have been so easily prevented by some form of intervention. Provides a discussion on the intervention services available.

14. FEMA, 1987, *Public Fire Education Today: Fire Service Programs From Across America*, US Fire Administration, FEMA, April 1987.

Discusses the fire education programs of a range of US fire departments. Claims made include that there is a need for programs for adults because so many are for children.

15. Scanlon-Sclipp, A., 1981. 'Childhood Crisis', in, *Emergency Response to Crisis – A Crisis Intervention Guidebook for Emergency Service Personnel*, (Mitchell, J & Resnik, H. Eds) Prentice Hall USA. 1981.

This chapter outlines the *Intellectual, Emotional and Social* development of children in several age groups from birth through to 18. Also discuss the prevention role that emergency service workers can play in dealing with children in crisis.

16. Berger, K., 1994. *The Developing Person Through the Life Span*, Worth, New York, 1994.

Pages 220 – 221 discuss child injury prevention and the important role of forethought and supervision by caregivers.

**17. Kriesfeld, R., 1997 *Not Only a New Lighter Standard*, [Online, accessed 5/3/99]
<http://www.nisu.flinders.edu.au>**

A brief discussion about the injuries caused to children by cigarette lighters prior to the advent of the new regulations. Hospital data showed that there were 128 incidents of which 42 involved children under five.

18. McDonald, Hon. R. (Minister of Consumer Affairs – NZ). 1998. *Mandatory Safety Standards For Cigarette Lighters On The Way*, Press Release, 5 August 1998.

Announcement that NZ would follow the same regulatory path taken by Australia in introducing child resistant cigarette lighters.

19. Gillon, G. 1998 *Cigarette Lighters Also a Problem in Wainuiomata Fatal Fire*, Press release, Alliance Emergency Services [Online, accessed 5/3/99]

<http://www.alliance.org.nz>

Call for New Zealand to introduce similar regulations to Australia for disposable cigarette lighters. Between July 1993 and December 1997 ten lives were claimed in fires caused by cigarette lighters in New Zealand.

20. CPSC, 1997. *Statement of Ann Brown, Chariman US Consumer Product Safety Commission, Submitted Before the Subcommittee on Telecommunications, Trade & Consumer Protection, House Commerce Committee, October 23, 1997*, [Online: accessed 5/3/99]

<http://www.cpsc.gov>

Provides some insight into the effectiveness of consumer regulation in the US. Infant crib safety, power mower safety and child resistant cigarette lighters have saved more than \$1.6 billion each year in health costs, property damage.

The regulations on child resistant cigarette lighters are projected to prevent 100 deaths each year, several hundred injuries and save \$500 million.

21. CPSC, 1994. *CPSC'S Standard For Child Resistant Lighters to Take Effect 7/12/94* [Online: accessed 13/3/99]

<http://www.cpsc.gov>

Media Release to coincide with the start of 'child resistant' cigarette lighter legislation in the US.

22. CPSC, 1993. *CPSC Issues Final Rule on Child-Resistant Lighters, 9/6/93* [Online, accessed 13/3/99]

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Media release to announce the setting of mandatory safeguards for cigarette lighters

23. Roberts & Roberts, 1999. *Child Resistant Cigarette Lighters*, Tyler Texas, [Online, accessed 5/3/99]

<http://www.robertslawfirm.com>

General information on cigarette lighters. CPSC estimate that 60% of deaths will be prevented by child resistant cigarette lighters.

24. CPSC, 1999. *Your Home Fire Safety Checklist*, CPSC, [Online, accessed 5/3/99]

<http://www.cyber-north.com>

This is a checklist and questionnaire developed by the CPSC to assess the fire safety of homes. It includes a section on cigarette lighters and matches. Each year more than 200 deaths are associated with fires started by cigarette lighters. About two thirds of these result from children playing with lighters. Most of the victims are under five years old.

25. *Juvenile Fire Awareness and Intervention Program – Annual Report 1997 & 1997/98, Metropolitan Fire Brigade & Country Fire Authority, Melbourne, 1998.*

Provides statistics on the numbers of cases treated by the program.

26. Adler, R & Nunn, R., 1993. *Prevention of Childhood Firelighting – The Juvenile Fire Awareness and Intervention program – Primary Prevention in Fireplay in Young Children, The Mental Health Service, Royal Children’s Hospital, Victoria, September 1993.*

A discussion on the development of the JFAIP in Victoria including statistics on child fire setting behaviour.

27. Phoenix fire Department, 1997a. *Youth Firesetter Prevention Program, Phoenix Fire Department US, 1997.*

Provides characteristics which may be present in the range of categories of juvenile fire setters: Curious, Crisis, Delinquent, Strategic, Pathological.

28. *Small Hands Big Fires – Profile of a Firesetter, City of High Point, [Online, accessed 6/5/97]*

<http://www.high-point.net/dept/fire>

Again discusses the categories of juvenile firesetters and discusses the Curious Firesetter as ones who love to imitate adult play.

29. *Lowell Juvenile Firesetter Intervention Program, [Online, accessed 6/5/97]*

<http://www.uml.edu/Lowell/firedept>

Again discusses the various categories of juvenile firesetting. In regards to curious fire setters the claim is made that these are children between the ages of 3 and 7 who set impulsive fires using ordinary combustibles and matches or lighters left in easy reach.

**30. MFESB, 1997. *Juvenile Fire Awareness and Intervention Program*, Metropolitan Fire and Emergency Services Board Fire Prevention Department, Victoria, [Online, accessed 6/5/97]
<http://www.mfb.org.au/jfaip>**

An overview of the JFAIP program and includes a checklist: What parents can do to prevent most fire setting. This includes: Kepp all matches and lighters out of reach of children.

31. Swain, P., 1998. *Why do Some Children Light Fires*, Research Report, Juvenile Fire Awareness & Intervention Program, Melbourne 22/10/98.

Tests the hypothesis that children under 8 light fires through curiosity and fascination. Research found that 73% of these children did in fact fall into this category. There is also research on geographical and socio-economic factors which play a part in fire setting behaviour.

32. *Juvenile Fire Awareness and Intervention Program*, Metropolitan Fire Brigade & Country Fire Authority, Melbourne, Information Booklet.

Provides information on the operation of the JFAIP.

33. Merriman, J. 1988, 'Playing With Fire', *The Advertiser*, 9/9/98, p24.

Article which looks into two particular cases where children aged 2 and 2.5 years were able to start fires using 'child resistant' cigarette lighters.

34. Kreisfeld, R. 1994, *Injury Associated with Cigarette Lighters*, National Injury Surveillance Unit, November 1994. Summary Data Report.

Provides an analysis of injuries reported to children as a result of playing/using cigarette lighters. In total 128 cases were reported up to May 1994. Analysis separates children into groups; under five, 5 – 14 and 15 and over.

35. Harrison, J. & Cripps, R., 1994, *Injury in Australia – An Epidemiological Review*, AGPS, 1994.

Chapter three deals with Injury in Residential Settings. Includes details of a comparison of fire related deaths between USA and Australia. Also includes the results of a Victorian survey which looked at the numbers of households which contained various safety features (eg smoke detectors, safety switches etc.)

36. Juan, S., 1995, ‘Accidental Injury and Young Australian Children, *Australian Journal of Early Childhood*, Vol 20, No. 2, June 1995, pp27-31.

Includes statistics on the numbers of Australian children suffering burns and scalds on an annual basis. House fires account for 75% of child deaths as a result of fires/scalds. 80% of these occur to children under five. House fires are the most common cause of death.

37. FEMA, 1988a. *Preadolescent Firesetter Handbook*, United States Fire Administration, FEMA, December 1988.

Introduction includes discussion on the fire setting traits and behaviours of children under seven. Most of the discussion looks at the intervention process including the role of parents.

38. FEMA, 1998b. *Sesame Street – Fire Safety Book and Organizing Your Community*, United States Fire Administration, FEMA, February 1988.

These two books provide a series of activities for pre-school children to teach and re-inforce fire safety behaviours. Included are guides for teaching children to leave cigarette lighters alone including a story for pre-schoolers.

39. Kafry, D., 1980. ‘Playing with Matches: Children and Fire’, in *Fires and Human Behaviour*, Canter, D. Ed, John Wiley, 1980.

Discussion on the reasons why children might involve themselves in fire play. Amongst the recommendations are:

Increase the availability of fire prevention training to more adults, and, develop guidance for parents

40. Runyan, C. Shrikant, B. Linzer, M. Sacks, J. Butts, J., 1992. 'Risk Factors for Fatal Residential Fires', *New England Journal of Medicine*, Vol. 327 No. 12, 17 September 1992, pp 859-863.

Residential fires are most likely to be caused by heating equipment or smoking materials. The risk of death is greatest in fires in mobile homes, in those involving alcohol impaired persons and in those in houses without smoke detectors.

41. Baker, S., 1992. 'What Keeps the Home Fires Burning', *New England Journal of Medicine*, Vol. 327, No. 12, 17 September 1992, pp 887-888.

Among children one to four years of age, the number of deaths in home fires surpasses the number due to cancer. In the past six decades, the rate of death due to unintentional injuries overall dropped by 65%, but for house fires the rates was fully as high in 1988 as in 1930.

42. Porth, D., 1999a. *Children With Fire: A community Problem, A Community Solution*. [Online accessed 25/3/99].
<http://www.sosfires.com>

Includes some brief case histories of child firesetters as well as a checklist for parental/carer fire safety:

- Are matches/lighters kept in a safe place, high and out of reach
- Do you use, store and generally treat matches/lighters like a dangerous tool
- When the child under your care sees you use matches/lighters, are they seeing you treat it with respect and caution
- Have you told the children under your care how you expect them to treat matches/lighters
- Have you told the children under your care what to do if they find matches/lighters or see a friend playing with these items.

If you can answer 'yes' to all of these questions, then you are unlikely to have a problem with child firesetting. Most firesetting behaviour happens because of unclear rules and expectations along with a natural curiosity about fire.

43. Porth, D., 1999b, *Fire Education Made Simple*, [Online accessed 25/3/99]

<http://www.sosfires.com>

A series of hints aimed at parents for the prevention of child fires in the home. Included are:

The single greatest contributing factor to children being involved with fire is accessibility to matches and lighters.

Parents are the single most influential role model that children will ever experience..... Take a moment to stop and think about the example you set when you use matches and lighters.... Are you treating fire with the respect you want your children to learn.

The use of matches and lighters should be similar to the use of other household tools....Can we reasonably expect our children to treat matches and lighters as a dangerous tool if we, as adults, do not treat them that way ourselves?

- 44. Kolko, D. & Kazdin, E., 1991. 'Motives of Childhood Firesetters: Firesetting Characteristics and Psychological Correlates', *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, Vol. 32, No. 3, March 1991, pp 535-549.**

This research compares the motives of 'curiosity' and 'anger' among child fire setters. It concludes that the generally accepted notion that curiosity motivated fire setters are in all other ways 'normal' or 'benign' is not supported. One hypothesis put forwarded is that curiosity about fires may reflect a motive less transient than anger and that such an attraction may support more continued involvement with fire and perhaps other deviant activities.

- 45. Hoban, J. 1996, *Coroner Endorses Childproof Lighters*, New South Wales Fire Brigade, Press Release.**

Discussion on the findings of the Westmead Coroner (Phil Molan) following an inquest into the deaths of 5 people in a fire in November 1995. One of the recommendations made was for the introduction of 'child resistant' cigarette lighters.

- 46. Lo Po, Hon. Faye., 1996. (Minister for Fair Trading NSW), *Minister May Ban Dangerous Disposable Lighters*, Media Release, 7 May 1996.**

Includes statistics from NSW Fire Brigades:

- 76% of all fire incidents caused by children involve lighters or matches left unattended

- During 1994 NSW Fire Brigades attended 74 fires (\$1.4 million damage) involving children playing with lighters.

47. Bucholtz, R. 1996, Paper Presented at the Cigarette Lighter Forum, Convened by Hon. F. LoPo, Sydney 20 June 1996.

Included in this paper are a variety of NSW Fire Brigade statistics in relations to child cigarette lighter fires (damage, injury, deaths).

48. Kolko, D. & Kadzin, A., 1994. 'Children's Descriptions of Their Firesetting Incidents: Characteristics and Relationship to Recidivism', *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 33, No. 1, January 1994, pp 114-122.

This research showed that 20% of children used a cigarette lighter as the method of ignition with around 78% of children obtaining their ignition source from in or around the house. The primary motivation for the children was found to be 'No Reason/Curiosity/Fun' in about 85% of children. The authors suggest that exposure to matches/lighters is an environmental risk factor for child fire setting. They also suggest that the availability of matches or cigarette lighters may influence an understimulated or curious child to exhibit an interest in fire.

49. Barnett, D & Spitzer, D., 1994. 'Pathological Fire Setting 1951-991: A Review', *Medicine, Science and the Law*, Vol 34, No. 1, 1994. Pp 4-20.

This is a review of all literature published in this period dealing with fire setting behaviour. There is a small part devoted to child fire setting which includes studies by several authors which found that 40-60% of children between 3 and 12 have engaged in fire play and in about half of these cases a fire had been set.

50. Porth, D., 1998. *Report of the Juvenile Firesetter Program*, Portland Fire Bureau. 1998.

A comparative study of the numbers of children referred to the program before and since the advent of the 'child resistant' lighters in the US. There appears to be very little change in the numbers of children using cigarette lighters as an ignition device. Another interesting statistic is that high use of lighters/ low use of matches by children between 1-4.

51. Phoenix Fire Department, 1997b. *Youth Firesetters Program* [Online, accessed 6/5/97]

<http://www.ci.phoenix.az.us/FIRE>

52. Reynolds, C, 1998, *Fire Research News – Domestic First Aid Firefighting*, Home Office, UK, 1998. [Online, accessed 13/1/99]. <http://www.homeoffice.gov.uk>

Results of a survey of 450 people who had experienced fire in the home. Included are figures on:

- Causation
- Response
- Changes made after the fire.

One particular finding is that more advice on how fires can start through distractions and carelessness is required.

53. Lewis, A., 1996, *Suffer Little Children, Fire Prevention*, Issue 295, December 1996. Pp 36-38.

Provides figures on the trends in deaths and injuries by fire in EU countries 1987-1993, with particular attention to the deaths of children.

54. Prosser, G. (Hon.) Minister for Small Business and Consumer Affairs, 1996a. *Disposable Cigarette Lighters, Media Release, 22/9/96*

Announcement of the proposed introduction of mandatory child resistance which was to be put to a meeting of State and Territory Ministerial Council on Consumer Affairs meeting in Darwin on 27/9/96.

55. Prosser, G. (Hon) Minister for Small Business and Consumer Affairs, 1997. *Child Resistant Lighters to Save Lives, Media Release, 13/2/97*

Further details of the introduction of child resistance regulations.

56. Prosser, G. (Hon) Minister for Small Business and Consumer Affairs, 1996b. *Lighters are a Real Danger, Canberra Times, Letter to the Editor, 6/10/96,*

This is a response from the Minister to claims made by lighter importers that the introduction of mandatory child resistance will cause more children to use matches.

57. Parliamentary Reports, House of Representatives, 3 March 1997,

Question to the Minister for Small Business and Consumer Affairs as to the reasons for the introduction of mandatory child resistance.

58. Gaynor, J., Huff, T., & Karchmer, C., 1987. The Linkages Between Childhood Firestarting and Adult Arson Crime: Secondary Analysis of Convicted Arsonists Retrospective Reports, *The Fire and Arson Investigator*, Vol. 37, No. 4, June 1987, pp 36-37.

This research into the behaviour of convicted arsonists found that many had been involved in “non-productive” fire setting behaviour as children. It also suggests that the childhood fire setting behaviour was motivated by ‘Curiosity’ – “wanting to see fire burn”. This curiosity then developed into motivators of anger or revenge in adult life.

59. Schwartzman, P., Stambaugh, H., & Kimball, J., 1999. *Arson and Juveniles: Responding to the Violence*, Technical Report Series, United States Fire Administration, FEMA. [Online, accessed 19/4/99]

<http://www.s.../Arson>

60. Firefighter Mum Rescues Twins, *The Advertiser*, 19/4/99, p 9.

Article detailing a fire set by two three year old twins in their bedroom using a cigarette lighter. Both twins suffered burns and were hospitalised.

61. SOS-FIRES, 1999. *Frequently Asked Questions About Child Firesetting*, [Online, Accessed 13/5/99]

<http://www.sosfires.com/FAQ>

Questions often asked by parents about their children’s firesetting behaviour. Whether it is normal, what can be done to prevent it and what services are available to assist.

62. CPSC *CPSC and Industry: Saving Lives Cost Effectively Through Co-operation Child Resistant Cigarette Lighters*. [Online, accessed 23/5/99]

<http://www.cpsc.gov>

The CPSC predicts that the child resistant cigarette lighter regulations in the US will prevent 80-105 fire deaths and save \$400 million per year in the US.

63. **FOERGER, R.H., 1999. *Lighters: The Fire Source of Choice.***
[Online, accessed 25/5/99]

<http://www.sosfires.com>

The author recounts his experiences with child fire setters as an Intervention Counsellors. 75% of children used lighters. Suggests that a warning be placed on smoking materials in regard to dangers to children. Adults should be warned of this potential.

64. **BEE, H., 1981. *The Developing Child*, Harper & Row, New York, 1981.**

Chapter on research into the development of moral behaviour in children. Discussion of Piaget's stages of Moral Development and Kohlberg's stages of moral development.

65. **BANDURA, A., 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory.* Prentice Hall, New Jersey, 1986.**

Chapter on Observational Learning. Most human behaviour is learned by observation through modelling. By observing others, one forms rules of behaviour, and on future occasions this coded information serves as a guide for action.

66. **\$80,000 Lighter Blaze, *The Advertiser*, 27/5/99**

Children playing with a cigarette lighter caused \$80,000 damage after they lit a fire in a rear bedroom.

67. **PORTH, D., 1998. *The Portland Report 98: A Report on the Juvenile Firesetting Problem.* Portland Fire & Rescue Department, 1998.**

Comprehensive statistics on juvenile firesetting in the Portland, Oregon area. Lighters account for around 50% of fires and in the vast majority of cases these items are accessed from around the home. Over 50% of children have at least one parent who smokes.

68. **RIDER, A.O. *The Firesetter: A Psychological Profile.* Federal Bureau of Investigation, Virginia Undated.**

Comprehensive research into the psychological profiles of firesetters from children to adults. The section on children discusses the work of Lewis & Yarnell in profiling the "typical" child firesetter.

69. **Reid, S. 1999. Mother Flees House Fire with Two Children, *The Advertiser*, 10/7/99.**

Three and Five year old children playing with a cigarette lighter in the bedroom. Article also recounts some of the previous incidents involving children and cigarette lighters.

70. **JONES, K., 1999. *The Fireplay Report*, [Online, accessed 13/7/99] <http://.sosfires.com>**

Summary of research conducted by the Surrey Fire Service (British Columbia) of 1,351 school students (grades 1 – 12). Results include:

_____ Most children admit fire play activity

_____ Most claim they are motivated by curiosity/mischief

71. **Fire Destroys Home, *The Advertiser*, 11/8/99**

\$180,000 damage caused to a house when a child used a cigarette lighter to ignite curtains in a lounge room.

72. **CLONIGER, S., 1996. *Personality, Description, Dynamics and Development*, WH Freeman, New York. 1996.**

Discussion on the various theories of development including Kohlberg and various Learning Theories.

73. **PERRY, D. & BUSSEY, K., 1984. *Social Development*, Prentice Hall, New Jersey, 1984.**

Chapter which discusses social learning and the role of modeling. Particular discussion on why children copy some behaviours but not all.

74. **National Fire Data Center, *Children and Fire: The Experiences of Children and Fire in The Unites States*, Federal Emergency Management Agency, United States Fire Administration, Undated.**

Large collection of statistics ostensibly detailing child fire play fires recorded for the 1993 year. EG times of day, injuries & death, forms of ignition etc.

75. **US Fire Administration, *Curious Kids Set Fires: A Factsheet for Teaching Children Fire Saftey*. [Online, accessed, 20/11/99] <http://www.firehouse.com>**

Includes a range of statistics from the US in regards to child fire setting. Including 450 people die and \$300 million worth of property is damaged annually through child fires.

Includes advice that parents should check under beds for burnt matches or other signs of fireplay behaviour.

76. **National Safe Kids Campaign, *Residential Fire Injury, 12/98* [Online Accessed 20/11/99]**
<http://www.safekids.org>

In 1996 800 children died in residential fires in the US 60% where under the age of four. Child play fires are the leading cause of residential fire related death among children age 9 and under. Since the advent of child resistant lighters in the US there has been a decline in the number of child play deaths by 27 per cent.

77. **HARWOOD, B., 1988. *Fire Hazards Involving Children Playing with Cigarette Lighters, Fire and Arson Investigator, Vol 38 No. 4 June 1988 pp 38-44***

Research into the specific use of cigarette lighters by children in the US in the first half of the 1980s (1980-1985). Some interesting points are that the children had usually retrieved the lighters from an accessible location around the home.

78. **CPSC *CPSC Finds Multi-Purpose Lighters Dangerous to Kids. Press Release. [Online, accessed 14/12/99]***

The CPSC is to adopt child resistant regulations for multi-purpose lighters (grille lighters etc.). Since 1988 237 fires have been started by children under the age of 5 using these devices. There have been 45 deaths as a result of these fires.

79. **Thomas, Jan., 1986. *Child Safe Lighters Sought, Fire Chief, Volume 30, No. 4, April 1986. P 24.***

This is an article pre-empting the move by the CPSC to introduce mandatory child resistance on cigarette lighters. Figures quoted from the US Fire Administration and National Fire Protection Association include:

- ◆ 1986-87 fire was the leading cause of death for children under the age of 5 in the home.

- ◆ 1985 US fire fighters attended 11,000 fires started by cigarette lighters. Of these 7,800 were caused by children – 180 deaths, 1150 injuries, \$84.5 million damage.
- ◆ The median age of the lighter operators was 4.2 years
- ◆ Lighters involved in two-thirds of incidents had been left in plain view of the children usually on a table, counter, dresser, floor or bed.
- ◆ Mention of the petition by Diane Denton a nurse at Kossair Children’s Hospital, Louisville, Kentucky.

80. Disposal (sic) Cigarette Lighters, *Fire Chief*, Volume 30, No.5, April 1986, p 11.

Follow-up of the above outlining the CPSC proposed study into the dangers of cigarette lighters.

81. Curious Kids Set Fires, (A Factsheet for Teaching Children Fire Safety), United States Fire Administration, March 1998.

Handout prepared by FEMA points raised include:

- ◆ Over 30% of fires that kill children are set by children
- ◆ Matches and lighters should be kept in a secure drawer or cabinet.

82. Palatine Fire Department (US), 2000. *Juvenile Fire Setting*, [online accessed 31/1/2000]

<http://www.palatine.il.us/fire>

Brief overview of the Palatine Fire Dept.’s intervention program and the classification regime used to assess children. Includes the statement that “Children as young as 18 months old have been known to set fires”.

83. Fire Fighters Safety Magazine, 2000. *Firesetting During the Preschool Period: Assessment and Intervention Issues*. [Online accessed 31/1/2000]

<http://www.safety-network.com/ffsm/preschool.htm>

Discussion on The Arson Prevention Programme for Children (TAPP-C) operated by the Clarke Institute of Psychiatry in collaboration with the Ontario offices of the Fire Marshall. In the past three years this program has assessed 99 children (88 males, 11 females) of which 12.1% were under the age of five.

Three vignettes are used involving children under the age of five to demonstrate different characteristics of pre-school children who set fires. Two of the vignettes involve the children finding cigarette lighters.

- 84. Hamling, John., 2000. *A Psychodynamic Classification System for Pathological Fire Setters with Treatment Strategies for Each Subgroup* [Online accessed 31/1/2000]**
<http://www.ozemail.com.au/~jsjp/fireset.htm>

This is a review of literature of pathological fire setting. Whilst dealing with adults/teenagers it does make some comment of children, although no ages are mentioned:

- ◆ Kaufman, Heims & Reiser (1961) examined 30 male boy fire setters and found 22 were either psychotic or borderline psychotic.
- ◆ Rothstein (1963) examined eight firesetting boys and found that they belonged to two distinct groups, namely, borderline psychotic and impulsive neurotic.

- 85. Prins, Herschel., 1994. *Fire-Raising: Its Motivation and Management*, Routledge, London, 1994.**

Chapter six of this book is devoted to child fire setting and begins with a brief literature review. Particular attention is paid to work by Dista Kafry which found that:

- ◆ Fire play was carried out by 45% of boys studied
- ◆ Interest in fire begins at an early age, 18 per cent of fire play occurred before the age of three.
- ◆ Whilst parent's seemed aware of the dangers, a large percentage did not provide and adequate instruction or warning to their children
- ◆ The homes of those who experimented with fire tended to be characterised by a greater degree of social deprivation; fathers played a less important role and mothers were frequently left to cope with child rearing

Jacobsen examined 104 child fire setters and found:

- ◆ Backgrounds seemed to be characterised by parental criminality, poor supervision and harsh or inconsistent discipline.
- ◆ he found that the often repeated assertion that there is an association between fire raising, sexual disturbance and enuresis was not evident in the sample.

Vandersall & Weiner studies 20 children and found:

- ◆ That there were no consistent precipitating stresses leading them to conclude that fire raising behaviour arose very much out of the child's inner conflicts.

Wooden & Berkley studied sixty-nine fire setting children and a similar control group and also 128 fire fighters involved in counselling programmes. They found:

- ◆ Poor family relationships, warring parents, a significant degree of sexual abuse (particularly among females), poor peer relationships, poor assertive skills, and multiple behavioural problems.
- ◆ They distinguished three age groups:
 - ◆ Younger Children 4-8
 - ◆ Pre-teenagers 9-12
 - ◆ Teenagers 13-17
- ◆ They also identified four categories
 - ◆ Curiosity leading to fire
 - ◆ Motivation of anger at adverse home environments
 - ◆ Older youngster who engage in arson as a pattern of juvenile delinquency.
 - ◆ The pathological fire setter

86. Porth, Don & Hughes, Gary, 2000. *Juvenile Firesetting Research Project 2000.*

[Online, accessed 6/3/2000]

<http://www.sosfires.com/sosfires.htm>

Study of data collected by the Portland Fire Department and Anchorage Fire Department in regards to intervention programs and factors contributing to child fire setting behaviour.

Draws on some research done in 1996 into violent crime committed by youths. This found that the following factors were significant:

- Access (to weapons)
- Lack of appropriate supervision
- Few consequences for their actions
- Limited adult guidance

Smoking

Young children are curious and will tend to replicate adult behaviour. 69.8% of children between 1-5 lived with a smoker with the rate dropping as the children got older.

Match/Lighter availability

80% of children in the study had access to lighters /matches. Whilst older children can purchase lighters etc. For young children this raises questions about quality parenting.

Ignition Source

The youngest age groups prefer lighters (1-5 years 64.6%).

Responsible Caregiver

The 1-5 age group is overseen by a parent/caregiver almost 70% of the time. This leads to questions about proper adult supervision and access to matches /lighters. Clearly, there is a lack of both, which is driven by an adult's disregard for the dangers of fire in the hands of children.

Peer Pressure

Children 1-5 years lit fires on their own on 63.5% of occasions whereas 15-17 years this drops to 23.8%. Clearly peer pressure is not as influencing a factor for young children as it is for older children.

87. Porth, Don & Lapsansky, Lisa., 2000. *Society's Influence on Juvenile Firesetting*. [Online, accessed 12/3/2000]

<http://www.sosfires.com/Attention%20Deficit/hyperact1.htm>

Includes a discussion on the parental issues which may affect child fire setting behaviour.

“One common thread that seems to connect all aspects of the juvenile firesetting problem is a low level of parental skill”.

“When adults preach safety to children but turn around and engage in unsafe behaviour, the visual message is given the highest priority by the child.”

88. Crowley, Rosemary.,1996. (Chair) Senate Employment, Education and Training Reference Committee. *Childhood Matters – A Report on the Inquiry into Early Childhood Education. Commonwealth of Australia, July, 1996.*

Chapter three looks at issues of the importance of the adult/child relationship.

Chapter five looks at the family’s role on developing their children.

89. FEMA, 1989. *Juvenile Firesetting Counselling Today: A Sample of Programs From Across America. United States Fire Administration, May 1989.*

An overview of numerous juvenile intervention programs operating across the United States.

90. Wooden, Wayne & Berkey, Martha. (1984) *Children and Arson – America’s Middle Class Nightmare. Plenum Press, New York, 1984.*

This is a study into the psychology of juvenile firesetters in the USA. Included are:

“The diminished exposure to the primitive use of fire may make it more mystifying and therefore attractive element. Consequently, a youngster may become curious enough about fire to play with matches....Our first category of firesetters is this very group of young children whose parents never took the time to teach their youngsters about proper fire safety measures.” (17)

“Of interest to us are those behavioural characteristics that distinguish the younger children (4-8) from the pre-teenagers (9-12) and from the teenagers (13-17).” (22)

“Our four categories, therefore, were the following:

1. The curious or *playing- with- matches* firesetters.
2. The troubles or *crying-for-help* firesetters.
3. The *delinquent* firesetters
4. The *pathological* or *severely disturbed* firesetters. (31)

“...the most common type of fires set by very young children, the ‘playing with matches’ fires. Curious and fascinated by the spark

and the igniting of a match, these children are not bent on destruction when they play with fire.” (45).

“...a surprising number of parents do not regard their child’s playing with matches as a particular problem because these parents think that all kids play with matches, and that this is just a stage that youngsters go through. To the contrary we advise parents that it is never too early to begin to teach children about fire...All children require proper fire education from parents, from school, and from fire safety personnel in matters pertaining to fire play and matches.” (46)

“One of the first strategies, therefore, for the future is to work toward greater fire-safety education and public awareness.” (197).

“One observer has viewed firesetting behaviour as a threefold process: an interaction between historical factors that predispose a person to a variety of antisocial acts; environmental and social patterns that teach an individual to play with fire; and immediate conditions that motivate the firesetting act.” (204).

Methodology used in this study:

Parents of 69 children with firesetting behaviour completed an interview questionnaire.

Interviews with public officials who investigate these cases as well as with those who rehabilitate the young arsonists. (3).

“In accepting the parents answers as pure fact, however, we recognise the fact that their responses may not be entirely indicative of their youngster’s actual behaviour.” (26).

90. Crandall, R., 2000. “No Problem, Chief, Just a Kid With a Match”. [Online, accessed 4/5/2000]
<http://www.fireproof-children.com/newsroom.html>

This is an excerpt from a presentation to the NFPA World Fire Safety Congress and Exposition in Denver on 17 May, 2000.

Some of the comments made are:

“Out of the nearly 100,000 fires each year caused by children, two out of three are labelled “curiosity”. (1)

“Fifty per cent of all reported fires are started by children between 4 and 9. Locally 4 year olds start more actual fires than children in any other single age group.” (1)

Research shows that even where there are comprehensive juvenile firesetting programs only about 10% of at risk children have contact with the program.(1).

91. **Gaynor, J., McLaughlin, P. & Hatcher, C., 1983 *The Firehawk – Children’s Program. A Working Manual.* National Firehawk Foundation. USA.**

“Data estimate that 20 per cent of normal children between kindergarten and fourth grade have been involved in firesetting.” (1.3)

“Children’s interest in fire is found to start as early as three and can continue through age thirteen. In children of this age range, it has been found, that fire interest occurs much more frequently in boys than in girls.” (2.1)

In reference to ‘curiosity’ fire setters the following comments are made:

“They are usually young boys between the ages of three to ten who have an average energy level and are alert and curious about their environment” (2.2)

“These types of children usually become involved in fireplay as a result of being in a situation in which firesetting materials are easily available and there is an absence of supervision by an adult” (2.3)

“These children are often referred to as “curiosity” fire setters because their primary motivation for fireplay can be viewed as exploring their environment.” (2.3)

92. **Scott, D. 1974. *Fire and Fire-Raisers* Duckworth, London**

93. **Gaynor, J. & Hatcher, C. 1987. *The Psychology of Child Firesetting – Detection and Intervention*, Brunner/Mazel, New York.**

“Children’s involvement with fire starts as early as age three” (7)

“Data shows that if children play with fire once, their fireplay will result in fires 33% of the time. (7)

“Data show that many of today’s youngsters express a healthy curiosity about fires, but the probability remains high that this curiosity will result in accidental fires.” (7)

“Those environmental contingencies which encourage a child to play with fire are modelling, imitation and inconsistent negative reinforcement.” [Commenting on research by Fineman (1980)] (48).

“The initial level of experience for children is fire interest, which begins as early as age three. Depending on the influence of psychosocial determinants, fire interest can lead to fire-safe or fire-risk behaviours.” (58)

“If children express fire interest by asking questions or requesting permission to be involved in fire-related activities, then parents or responsible adults must recognise the interest. If the interest is acknowledged, then youngsters can become involved in activities such as helping to light fire places, birthday candles or campfires. All of these activities can take place under the supervision of parents or responsible adults. Actual, supervised experience in fire-related activities teaches youngsters to engage in fire-safe behaviours.” (59).

“Fireplay (Fire-risk) occurs when youngsters experiment with matches or other firestarting materials in an unsupervised setting. Most fires resulting from fire-play are accidental and unintentional.” (60)

- 94. Hall, Dr. J., 1995. Presentation to NFPA Juvenile Firesetter Practitioners’ Forum September 8-10, 1995, Braintree, Massachusetts.**

“Children playing with fire nearly always play with matches or lighters. Between the two heat sources, lighters have played an increasingly dominant role in fire deaths and injuries in child playing fires” (6)

- 95. CFA 1998, *Fearly Fire Safe - A Resource for Early Childhood Professionals*. Country Fire Authority, Victoria, June 1998.**

A booklet designed to help early childhood professionals carry out fire safety education with parents of children under 5. Some of the advice given to parents includes:

- Supervising Children at all times

- Positive Role Modelling

97. **JFAIP, 1999. *Juvenile Fire Awareness Intervention Program – Annual Report*. Metropolitan Fire and Emergency Services Board, Melbourne, 1999.**

Presents statistics for the financial year 1998/99 and reiterates much of the findings contained within the report “Why Some Children Light Fires”

98. **Elkind, D. & Weiner, I. 1978, *Development of the Child*, John Wiley and Sons, New York.**

99. **Hoad, K. & Geers, H. 1997, *Working With Children With ADHD and Related Learning Disabilities*. Paper prepared for the Metropolitan Fire Brigade, Fire Safety Project, 10 July 1997.**

100 **Kauffman, J. 1985, *Characteristics of Children’s Behaviour Disorders*, Charles E. Merrill, Columbus, 1985.**

101. **Gearhart, B. & Gearhart, C. 1989, *Learning Disabilities – Educational Strategies*, Fifth Edition, Merrill, Columbus, 1989.**

102. **Moore, D. 1972, *Preventing Misbehaviour in Children* Charles C. Thomas, Springfield, 1972.**

103. **Ministerial Council of Consumer Affairs, 1997. *Disposable Cigarette Lighters Also Light Children*, Advertisement published in *Australian Women’s Weekly*, July 1997.**

104. **Bowley, A. 1975. *Children at Risk*, Churchill Livingstone, Edinburgh, 1975.**

105. **Yin, R. 1994. *Case Study Research – Design and Methods*, Second Edition, Sage Publications, California, 1994.**

106. **Punch, K. 1998. *Introduction to Social Research – Quantitative & Qualitative Approaches*, Sage Publications, London, 1998.**

107. **Bouma, G. 1993. *The Research Process*, Revised Edition, Oxford University Press, South Melbourne, 1993.**

108. **Sarantakos, S. 1994. *Social Research*, Macmillan Education Australia, South Melbourne, 1994.**