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THE EFFECTS OF CAR-HIJACKINGS ON THE ACADEMIC PERFORMANCE OF SENIOR PRIMARY SCHOOL CHILDREN.

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DECLARATION

I hereby declare that this research report is my own work. It is being submitted in partial fulfillment for the requirements for the degree of Masters of Education (Educational Psychology) in the Division if Specialised Education, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.



VANESSA FELDMAN

JOHANNESBURG

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ABSTRACT iv

This post-hoc study examines the academic effects of car hijackings on primary school children in South Africa. The sample includes senior primary school children in Grades 4 to 7 from eight schools in Gauteng. A Questionnaire / Consent form was administered to the parents of all the children in these grades. A total of 3200 forms were given to all the children's parents. Only 19 response forms were returned. Some parents of children who had been hijacked refused to participate in the study. In addition, many of the children's families who had been involved in car-hijackings, had left South Africa and were living in another country. Each child's academic scores relative to their class average scores were obtained both before and after the trauma. The results were statistically analysed by means of the Sign Test and the Wilcoxon Matched-Pairs Signed-Ranks Test. These results indicate that there were no significant changes in the academic performance of children who had been hijacked five months earlier. Implications of these results were discussed, with a view to future research.

An important extraneous variable could have been exposure to post-trauma counselling. During the course of the research it came to the researcher's attention that every child in the sample had had some form of trauma debriefing. This may have contributed to the post-trauma functioning of the children.

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CHAPTER ONE INTRODUCTION

With the existing high levels of crime in South Africa more research is needed particularly into the effects of violence on children. This study aims to explore specifically, the academic consequences of car-hijackings on a sample of senior primary school children over a five month period.

A review of the literature suggests that trauma adversely affects school performance, although Terr (1990) indicates that the effects are short-term. Several writers express similar views to South African writer Sharon Lewis (1999), who writes that the way in which a child attempts to cope with her/his school work could adversely affect the child's self-confidence and self-esteem. She suggests that the traumatised child might struggle to concentrate, to remember school material, and to cope with school work. A possible consequence is the deterioration in school work.

There are many myths surrounding the responses of children to trauma. These are explored further in the literature review.

In order to gain more clarity on the issue of academic performance following a trauma, this research sets out to examine academic results of child trauma victims over a five month period. Subjects in this research are senior primary school children from Gauteng who have been involved in a car-hijacking. Senior primary school children have been selected specifically because they are in the psychosocial developmental stage of "Industry versus Inferiority" in which mastery of school-related skills is a critical factor in their personality development (Erikson in Meyer, Moore & Viljoen, 1997). Lewis (1999) writes that the primary school child has a more realistic understanding of life events and is more aware of the real dangers of a traumatic event compared to the younger pre-school child.

The performance of the hijacked victims was assessed by comparing their term averages before the hijacking with their term averages 5 months later. Their marks are also compared to the class averages to ensure that fluctuations are particular to a child and not a reflection of a class phenomenon.

The Wilcoxon Matched-Pairs Signed- Rank Test is used to calculate whether there has been a significant change in the victim's academic performance over a five month period after the hijacking.

The results are then discussed, in terms of the literature, and the limitations of the study are considered with a view to suggestions for further research.

CHAPTER TWO REVIEW OF LITERATURE

2.1 DEFINITION OF TRAUMA

As crime escalates, researchers are focusing more of their attention on the effects of trauma on children. Terr (in Monahon, 1993) defines a traumatic event as an unexpected, extraordinary external event that has an overwhelming effect on the individual and his/her capacity to cope with the feelings aroused by the event. Monahon (1993) further suggests that traumatic experiences often promote feelings of terror and helplessness. Everstine and Everstine (1993) write that the Greek word "Traumata" means wound, implying a cut/ bruise/ fracture/ bullet- hole. This definition metaphorically represents how a traumatic event can injure a person's psyche.

When a traumatic experience is the product of malicious, intentional human behaviour, the child who was involved in the trauma may struggle to trust her/his world. The child may be pessimistic and suspicious in attitude (Monahon, 1993).

2.2 FOCUS OF RESEARCH

Over the last several years there has been a surge of interest in the consequences of trauma on children (James, 1989; Lewis, 1999; Monahon, 1993; Terr, 1990). Terr (1990) proposes that traumatic events become embedded in a child's mind and create scars which could effect the child's subsequent functioning. In addition, she postulates that when a child experiences a trauma an "abscess" develops. The child continues to function but when anything touches that "abscess" the child endures great pain. Terr (1990) writes that if we understand the consequences of trauma on children, then we will be able to recognise the effects when they are least expected such as, during class, on the playground, at the movies. Therefore the effects of a traumatic event on a child might present immediately after a trauma or after a delayed period of time.

The focus of the research will be on the effects of a traumatic car-hijacking on children. Specifically, the researcher proposes to examine the impact of the hijacking on the academic functioning of a child.

2. 3 MYTHS REGARDING THE EFFECTS OF TRAUMA ON CHILDREN

Throughout our history and until recently there has been neglect in examining the impact of trauma on children. Wraith (in Raphael & Burrows, 1995, p.324) comments on the "bond of silence" that has developed in our Western world. This silence has continued to exist due to the denial, by parents and teachers, of the effects of trauma on children. Wraith further suggests that our society has created various myths which have denied the effects of trauma on children. These myths have prevented such children from receiving necessary intervention and treatment. Many of these traumatised children might feel misunderstood and abandoned. They might feel unsafe, vulnerable and helpless in their worlds, which could affect their academic performance. Benedek (in Eth & Pynoos, 1985) comments how professionals struggle to acknowledge how human-induced trauma could shape the future lives of traumatised children.

Wraith (in Raphael & Burrows, 1995) discusses some commonly established myths about the effects of traumatic experiences on children. One of these myths is that children are too young to fully comprehend what is happening to them. As a result, they will not be affected by such experiences. Another myth is that children are able to forget their traumatic experiences. There is also the myth that children have a resilience that allows them to cope with their experiences with minimal, short-lived negative effects. These myths have been attributed to the cognitive immaturity of children, their limited ability to cope with their own concerns and fears which they perceive to be normalised by the adult world (Wraith in Raphael & Burrows, 1995).

Everstine and Everstine (1993) explain how children are neither cognitively nor linguistically able to express their responses to their traumatic experiences. They mention how adults lack the ability to perceive the trauma from the child's frame of reference and,

therefore, may not understand how the child has perceived the experience. The researchers explain how school-aged children utilise more complex defence mechanisms than younger children and this could result in the consequences of the trauma remaining hidden. This may prevent children from receiving the necessary intervention.

Terr (1991) challenges the myth that children are able to forget their traumatic experiences. She maintains that children who experience or merely witness a traumatic event are able to clearly recall the event. Terr, in her book 'Too Scared To Cry' (1990) writes about children who have experienced traumatic events. She discusses how the effects of trauma might emerge only after a long period of time. Terr (1990) comments how many parents and professionals avoid discussing traumatic events with children hoping that this will allow them to forget the event. Monahon (1993) maintains that children do not have the ability to erase their traumas from their memory. She continues to explain that there are many terrors that remain in existence following a trauma.

Michael Hughes (in Rafinski, 1997, p.2) comments, "Children are more likely to be affected by violence because they are less able to understand it and absorb it emotionally." Children do not have the cognitive skills to understand their world and make sense of the trauma (Garbarino & Bedard, 1996).

From the above cited literature, it appears that children are not immune to acts of violence. Steven Crimando (in Whitlock, 1996, p.1), suggests that children are vulnerable to the effects of traumatic events "for a number of reasons - such as less life experience, an underdeveloped neurology, and less ability to verbalise and express their response to the trauma - have a greater likelihood of later pathology."

On the other hand, Wraith (in Raphael & Burrows, 1995) argues that school children function at a concrete operational level of thinking and this could protect these children as they might not have a clear understanding of the event. These children may need a more interactional understanding of the event in order to integrate it. In addition, Pynoos &

Nader (in Wilson & Raphael, 1993) suggest that very young children, due to their lack of understanding of the event, could be partially protected from the impact of the trauma.

Therefore, it appears from the literature that researchers are uncertain about the exact effects of trauma on children.

2.4 NEUROBIOLOGICAL RESPONSES TO TRAUMA

Neurological research aspires to offer insight into how traumatic events affect academic performance. Researchers are discovering that trauma has severe effects on the developing brain of a child (Sowers, 1998). Perry (in Sowers, 1998) proposes that trauma can cause permanent changes in the physical structure and chemical balance of a brain. When a child is in a fearful situation, adrenaline secretion increases, the heart pounds, there is an increase in blood pressure and the muscles prepare for action. According to Brownlee (1996), this is the flight or fight response and is an appropriate response to danger. Perry (in Sowers, 1998), however, believes that this arousal state lasts abnormally longer with traumatised children. This hyper-arousal can promote acting out, aggressive or impulsive behaviour during class, particularly in boys. He warns that this could result in misdiagnosis where the boys may be misdiagnosed as hyperactive or even as learning disabled. Perry (in Sowers, 1998) continues to explain that girls react differently to stress and tend to withdraw into an internal world or become emotionally numb. Often these quiet girls are overlooked by the teacher and not referred for appropriate professional help. Perry (in Brownlee, 1996, p.2) comments "children who are aroused from fear can't take in cognitive information". These children invest most of their attention to their environment to determine if there is a possibility of trauma recurring. As a result, problem-solving and language skills are affected. Therefore the school performance of these children will be adversely affected.

Pynoos and Nader (1987) also observed how trauma exposed children are more aroused and this might result in jumpiness and startle responses. This, too, would affect their academic performance during class. These writers explain how teachers have observed

that children who had been exposed to unexpected shootings were startled when they heard a loud noise during class. In agreement, Motta (1994) mentions this state of arousal in traumatised children and suggests that it could affect both their ability to concentrate and their academic functioning. Stallard and Law (1994) concur with these findings which are due to physiological reactivity following a trauma.

This state of hypervigilance could interfere with children's ability to screen out random noises and environmental changes. These children may feel overwhelmed by all the stimuli with which they are confronted. This state of anxiety and inability to concentrate will adversely affect the child's ability to pay attention, to learn and to experience pleasure (Monahon, 1993).

This reactivity is the body's physiological response to threat (Brownlee, 1996). Cortisol is one of the hormone's that prepares the body for danger. Gunnar (in Brownlee, 1996) conducted research at the University of Minnesota and found a correlation between cognitive and developmental delays and irregular levels of cortisol. She noted that excess cortisol damages the memory area of the brain, the hippocampus. In addition, this excess cortisol in combination with other chemicals, alters the areas that regulate attention. As a result of these chemical imbalances the child will suffer from emotional acting-out behaviours, memory lapses and concentration difficulties. The child may struggle to recall academic information and as a result the child's school performance will be affected.

Therefore, the physiological changes that a child experiences after a traumatic event could affect the child's ability to focus on school work.

Supporting these findings, Karen Rafinski (1997, p.1), in her article, writes about the emotional and academic impact of violence on children. She notes that current researchers have discovered that "violence can burn a permanent state of panic into the developing brain". This will prevent the child from attending to the environment resulting in poor

attention during class and learning difficulties. Rafinski (1997) refers to Perry's finding that children exposed to violence display more attention and learning problems.

Perry (1998) observes that childhood traumas as opposed to later experiences have a greater impact on the child's development. He explains that the majority of critical structure and functional organisation in the brain occur during the childhood years. He further proposes that traumatic events impact on the brain areas which respond to the trauma and result in an altered neural system that will influence future functioning.

Everstine and Everstine (1993) discuss how children do not have a fully developed adaptable defence system. Therefore, children lack ample resources and their cognitive and emotional capacities are vulnerable to breakdown when they are involved in a traumatic event. Traumatised children may become concrete and primitive in their functioning whilst experiencing a traumatic event.

Munson (1994) postulates that it is common to find that there have been significant traumatic incidents in the histories of children with a diagnosis of Attention Deficit Disorder, Depression, Anxiety, Conduct Disorder, Oppositional Defiant Disorder. Children younger than 11 years old appear to be more at risk of developing Post-Traumatic Stress Disorder symptoms. These children need to be able to process their emotions and develop a cognitive framework in order to incorporate and attribute some meaning to the trauma (Wallen, 1993). The neurobiologic literature seems to present a compelling argument that physical and psychic trauma adversely affects cognitive development and thereafter presumably academic functioning.

2.5 EMOTIONAL AND ACADEMIC EFFECTS OF TRAUMA ON CHILDREN

Davidson and Smith (in Garbarino & Bedard, 1996) note that traumatised children (under 10 years old) are three times more likely than traumatised teenagers and adults to develop symptoms of Post-Traumatic Stress Disorder, thereby belying the myths that children are less affected by trauma.

Everstine and Everstine (1993) explain how children frequently use their behaviour as a vehicle for communicating their experiences and feelings. Munson (1994) warns that failure to adequately evaluate and recognise trauma-related behaviour can result in inappropriate treatment. The trauma may continue to influence the child's behaviour and promote a negative treatment outcome.

2.5.1 Re-experiencing of the trauma

Perry (1994) discusses how the traumatic experience is replayed in the child's mind. The child will be able to remember the event as well as the emotions that s/he experienced while it was happening, such as, anxiety, fear, helplessness. The re-living of the trauma may include traumatic play re-enactment, constant talk about the trauma, nightmares, drawing scenes of the event. These experiences will re-evoke memories of the trauma. The traumatised child might feel agitated and attempt to avoid reminders of the trauma. The child might, for example, withdraw as a way to avoid such reminders. Such a child might appear to be daydreaming during class while not responding to adult's questioning, indicating a retreat to an inner world. Pynoos and Eth (1986b) observed how traumatised children may avoid any traumatic reminders by inhibiting spontaneous thought.

Eth and Pynoos (in Figley, 1985) suggest that the traumatised child could experience school problems due to intrusive memories and thoughts related to the trauma which prevent the child from focusing on the academic task at hand. School problems could also arise as a consequence of the child's development of a cognitive style of forgetting associated with an inhibition of spontaneous thought. This prevents the child from creative thought and experiencing any reminders of the trauma.

Traumatised children might revisualise the trauma at leisure times or during class or just before falling asleep at night (Terr, 1991). The child might fear traumatic dreams and as a result fear sleeping or sleeping alone (Pynoos & Nader, 1987). Eth & Pynoos (1985) recommend that teachers should alert themselves to the potential sleep disturbances experienced by traumatised children. These children struggle to concentrate, display signs

of apathy, weakness and irritability. Hendricks (in Alsop & McCaffrey, 1993) notes how intrusive thoughts following a trauma might occur during class or just before drifting off to sleep. She explains how this could affect the child's ability to concentrate at school.

The intrusive imagery and sleep disturbance could adversely affect the child's school performance and her ability to concentrate (Pynoos & Nader, 1987). Although, in contrast, they acknowledge that some of the children they observed improved their efforts at school. In addition, James (1989) suggests that traumatised children often experience feelings of shame and alienation following their experience. She explains that these children might strive to compensate for their feelings of shame by developing a deep need to achieve. But, these achievements don't compensate for their feelings of shame and remain meaningless. Gordon & Wraith (in Wilson & Raphael, 1993) discuss how stress impairs educational and social skills in children. They suggest the possibility that some children overachieve as a refuge from the trauma while others struggle with academic functioning as a post-traumatic response.

Monahon (1993) argues that traumatised children often fear a recurrence of the trauma. This results in a perpetual state of fear, hypervigilance and a continual search for warning signs within their environment. These children are not able to understand the probability of events recurring and are not comforted by parental reasoning. They could panic when exposed to trauma reminders or develop pervasive fears of certain aspects of their daily lives. Routine activities do not offer security and comfort as they used to prior to trauma. These fears might be reflected in symptoms of Separation Anxiety. Separation from the primary caregiver, and threat of the unknown might become very frightening for the child. These children might follow their parents around clinging to them and refusing to go to school. Eth and Pynoos (1985) stress how the teacher should watch for behavioural changes in the child, such as the development of Separation Anxiety and clingy behaviour. These children might all display a fear of trauma recurrence. There could be a decrease in the child's school attendance. Gordon and Wraith (in Wilson & Raphael, 1993, p.570) note how traumatised children are often expected to "get back to normal", "to put it out

of their minds," but their preoccupation with the trauma could promote school and performance problems. Pynoos and Nader (1987) agree that traumatised children could suffer changes in both their behaviour and their cognitive performance. They continue to explain that there are teachers who noticed changes in the traumatised children in their classes. Some of these children became more aggressive, this could result in their being mislabelled 'conduct disturbed.' While at the other extreme, some traumatised children became more inhibited and participated less at school. This could have an adverse effect on their school performance.

Terr (1991) found that children who have experienced a traumatic event often develop a limited view of the future. They present with a changed attitude towards people and life in general. Comments such as "I live one day at a time" are often remarked. These children expect further trauma to occur and recognise the vulnerability of people. Erik Erikson (in Meyer, Moore & Viljoen, 1997) discusses how children whose security needs have not been met, may lack a sense of trust in their worlds. One could suggest that this could affect their degree of investment in the environment, especially within a school context.

Again, the overwhelming body of literature in this section, with the exception of Pynoos & Nader (1987) who suggest that some children may improve their efforts at school after a trauma and James (1989) who suggests that some children try to compensate for feelings of shame by achieving at school, seems to suggest that trauma will adversely affect school performance.

2.5.2 Regressive Behaviour

Monahon (1993) suggests that traumatised children often experience a temporary setback in age appropriate behaviours and skills. These children may lose some of their developmental skills, such as language skills, self-control and the ability to self-comfort. They may act-out and have temper tantrums more frequently than usual. She attributes these symptoms to the child's struggle to cope with her/his overwhelming feelings. Wraith (in Raphael & Burrows, 1995) confirms this by mentioning that a trauma could adversely

affect any aspect of a child's development such as cognitive maturation, acquisition of social skills and neurological development.

2.5.3 Shame

As mentioned earlier, James (1989) proposed that traumatised children experience some sense of shame following a trauma. They seem to believe that people can see their experience by merely looking at their faces. As a possible consequence, the child might avoid eye contact with others and attempt to remain unnoticed. These children could avoid achievement. This finding supports the hypothesis that children experience a decline in academic performance following a traumatic experience.

Parkinson (1993) suggests that self-blame following a traumatic experience could cause the child to withdraw into her/his own world. Some traumatised children might behave disruptively because they believe that they deserve to be punished as a result of their belief in their own responsibility for the trauma. This researcher continued to point out how some teachers noticed behaviour changes in trauma-exposed children.

2.6 TRAUMATISED CHILDREN WITHIN A SCHOOL CONTEXT

Recently there has been great interest in the academic consequences of psychic trauma on children. School is a place where one is able to assess the functioning of a child. There are norms for scholastic achievement, appropriate conduct and social skills. Teachers and other school professionals are able to observe the child on a daily basis and are able to detect when a child deviates from academic and social norms. The teacher is able to note the child's school attendance and academic performance. Stressed children often experience a change in their school performance and a loss of concentration (Youngs, 1995). This lack of concentration in traumatised children has been noted by various other researchers (Everstine & Everstine, 1993; Figley, 1985; Monahon, 1993). Epanchin (in Epanchin and Paul, 1987) postulates how anxious children perform poorly at school and struggle to maintain their responsibilities.

Eth and Pynoos (in Figley, 1985) suggest that traumatised children appear to be cognitively constricted with symptoms such as dullness, obtuseness, and a decline in school performance. They explain that school difficulties arise as a consequence of the child's concentration difficulties. In agreement, Gardner (in Figley, 1985) postulates that violence exposed children may reveal an impaired learning ability. In support of this finding, the American Psychiatric Association (in Figley, 1985) hypothesises that traumatised children might experience a decline in cognitive performance.

Erik Erikson (in Meyer, Moore & Viljoen, 1997) suggests that children who struggle to learn and co-operate at school might experience a sense of inferiority and incompetence. He continues to explain that a sense of competence or proficiency "is one of the conditions for participating in the cultural processes of productivity and, later, maintaining a family".

According to Gordon and Wraith (in Wilson & Raphael, 1993) there are short-term, medium-term and long-term effects following a traumatic experience. Within the first few weeks the child may experience a loss of previously attained motor and cognitive skills. The medium term effects include reduced concentration and trauma preoccupation. This could in turn result in school and performance problems. The researchers discuss how stress might impair the child's educational and social skills. Failure, loss of motivation and conflict with the teachers could promote a difficult school experience. Some teachers expect the child to not allow the trauma to affect them. The long term responses (two years and beyond) include chronic school performance problems. If the short and medium term problems result in lack of success, conflict with the teachers and loss of self-esteem, then, as a consequence school failure and poor performance could become chronic. The child might focus on survival and trauma-related issues and not on learning. The trauma victim could remain fixated at a safe pre-trauma stage so that s/he will not have to face the challenges of daily life.

Keppel-Benson and Ollendick (in Saylor, 1993) also note how traumatised children struggle to concentrate in school and suggest that this might adversely affect their

subsequent school performance. Their research concurs with the belief that traumatised children are adversely affected within an academic context. Stallard & Law (1994) discovered how a group of students who were involved in a minibus accident displayed concentration difficulties and a subsequent deterioration in their school performance. Many of these children were mislabelled as lazy and wilful.

Gay and Vogels (in Alsop, 1993) explain how violence exposed children could suffer symptoms of depression. These symptoms could be masked by the child and go unnoticed. Poor concentration, lack of energy and motivation may reflect the underlying depression in the child. As a result, their school performance could be adversely affected. These children could, in addition, develop psychosomatic symptoms and therefore not attend school regularly.

In contrast, Terr (1990) is not convinced that trauma leads to lasting academic effects. She writes that traumatised adults experience a decline in work performance. This is due to their denial of the trauma and the subsequent occurrence of interruptive flashbacks. These flashbacks cause concentration lapses and sleep disturbances. Terr (1990), however, differentiates between adults and children and explains that children do not experience flashbacks, they tend to daydream instead about their experience in a leisurely way. Therefore, she maintains that children do not suffer in concentration and are able to perform academically. Terr (1990) writes about the 26 Chowchilla school children who were kidnapped from their school bus, driven around for 11 hours and buried alive in an underground hole for 17 or 18 hours. She observed that of the 25 children, only four had school difficulties after the experience. Two girls were unable to study and struggled to concentrate during the year that followed the trauma. One girl stayed behind eight months but did not lose further ground. The other girl caught up completely four years after the trauma. The third girl developed a fear of the school bus and, as a result, hid from the bus for a year after the trauma. She failed school due to all the classes she had not attended. This researcher emphasises that it was her terror and not her learning or cognitive difficulties that resulted in school failure. Terr (1990) concludes that a trauma could create

academic difficulties but it would not be too long before the problems subsided and learning returned to normal. Therefore, she concludes that, in the long term, academic performance is not usually affected by a traumatic experience.

Most of the literature dealing with the effects of trauma in the school context suggest that there are short, medium and long-term negative consequences. However, Terr (1990) feels that long-term performance is usually not affected.

2.7 MITIGATING FACTORS

Although there is research revealing academic consequences to a traumatic event, there are mitigating factors involved. This is perhaps why it is difficult to determine the exact impact of trauma on a specific child. There are many factors involving the child, the family and the traumatic event itself which interact and this may have an impact on how the child is affected by the trauma (Monahon, 1993). Children all react differently to their traumatic experiences. In order to understand how each child is affected one should consider both the individual and the child's context (Ursano, McCaughey & Fullerton, 1994).

March (in Motta, 1994) suggests that risk is increased when the event is human induced and may be physically harmful to those involved. Wraith (in Raphael & Burrows, 1995) suggests that children are protected by their own abilities and their opportunities for protection and nurturance from other people. Children function within a safe, predictable world but when a child is traumatised their sense of safety is destroyed and they are left feeling vulnerable and helpless.

2.7.1 Characteristics of the child

Frederick (in Motta 1994) stresses that it is the child's perception of the trauma that plays a major role in determining how the child is affected by the trauma. If the trauma evokes feelings of extreme fear and helplessness this will have a negative impact on how the child is affected by the event (Motta, 1994). Wraith (in Raphael & Burrows, 1995) suggests that the child's previous experiences may affect how the child copes with the present

trauma. Other factors such as previous illnesses, separations, accidents or major changes within the family may contribute to how the child copes with the traumatic event.

Monahon (1993) discusses certain factors that buffer the child from the effects of trauma. Some of these factors are the child's intelligence, adaptability, sense of self-esteem, age and gender .

2.7.2 The child's environment

According to the ecological model, a person's reactions to a trauma will be greatly determined by the community to which s/he belongs. It is within this context that the person's identity is formed (Harvey, 1996).

The social environment and social support systems of the child will contribute to behavioural and psychological effects (Ursano, McCaughey & Fullerton, 1994). Children who have good connections with both friends and other adults within their communities experience less difficulties in dealing with the trauma (Monahon, 1993).

It is, perhaps, these mitigating factors that led to Terr's (1990) finding that in the long-term traumatic events do not adversely affect academic achievement.

2.8 Types of trauma and effect

The specific nature of the trauma impacts on how the child is affected (Monahon, 1993). Monahon cites various features that that may detrimentally impact on the child's reactions: firstly, if trauma is an intentional act of violence; secondly, the degree of life threat involved; thirdly, if a caretaker's life is threatened; fourthly, when the child is physically injured; fifthly, if the child has a negative perception of the event; and, finally, if the child perceives a disruption in the functioning of her/his family.

2.9 CONCLUSION

In conclusion, there appears to be an increase in research examining the effects of traumatic experiences on children's academic performance. The research, however, reveals contradictions in these findings. Various researchers propose that traumatised children experience short-term effects, while there are some who suggest that these effects are long-term. Personal and environmental factors may also mitigate against long-term effects of trauma on academic achievement. In addition, there are other researchers who believe that these children develop more motivation to achieve academically. Many researchers do not elaborate on many of their findings.

CHAPTER THREE THE STUDY

3.1 RATIONALE OF THE STUDY

The literature indicates that there is controversy about the long term effects of trauma on the academic performance of children. Researchers such as Eth and Pynoos (1985), Alsop (1993), Monahon (1993) believe that trauma will effect children's academic performance. However, Terr (1990) maintains that traumatic experiences will have only a short-term, if any, effect on the academic performance of children.

Lewis (1999, p.83) writes, "in South Africa, violence is one of the main causes of trauma in the lives of children." Therefore, research into the consequences of violence on children is particularly relevant and important in South Africa. Furthermore, school teachers who understand the behavioural and cognitive effects of trauma on children would be able to better assist traumatised children. They would be able to provide relevant support while the child is attempting to resolve the trauma and therefore the classroom will become a safe, secure environment (Pynoos & Nader, 1987).

Freud defined mental health as the ability "to love and to work" (in Terr, 1990, p.190). A child's work is learning, again emphasising the need to understand more about the relationship between trauma and school performance. Research has attempted to determine how traumatised children are coping by examining their school grades and test scores, with recent research suggesting that children who have experienced a trauma may be experiencing difficulties concentrating and performing academically at school (Monahon, 1993; Perry, 1994; Terr, 1990).

In light of this, this study sets out to investigate the correlation between the experience of a car-hijacking and the academic performance over a five month period in a sample of South African senior primary school children.

3.2 AIMS OF THE STUDY

The aim of this study is to examine the academic performance of children who have been involved in a car-hijacking. In particular, the researcher intends to compare the academic performance prior and post-trauma. The intention is to examine whether there has been a change in performance post-trauma.

3.3 HYPOTHESES

3.3.1 Research hypothesis

The academic performance of a sample of primary school children will be affected following a car-hijacking.

3.3.2 Statistical hypotheses

Ho: There will be no difference in the ranks of the children's pre and post-hijacking scores

H1: There will be a difference in the ranks of the children's pre and post- hijacking scores

3.4 METHOD OF RESEARCH

The method of this study is described in terms of the sample, the procedure employed, the research design and the statistical techniques.

3.4.1 The Sample

The sample comprises 19 primary school children. This includes 10 males and 9 females. Their ages range from 10 to 12 years. The mean age of the sample is 11 years and 1 month. The sample comprises of children of both white and black cultures. All the children within the sample speak English fluently. Areas from which the schools draw its students are of a mixed socio-economic status. (See Appendix B for a detailed description of the sample).

3.4.2 Procedure

The researcher approached 10 schools. Two schools refused to participate in the research while the remaining 8 agreed to participate. The schools were not aware which children had been involved in car-hijackings so it was decided to administer the questionnaire /consent form (Appendix A) to every child in Grades 4 to Grades 7. The children were instructed to give these forms to their parents and to return them to the school some time during that week. The form explained the aims and significance of the research and what was requested of the parents. The researcher requested the parents' permission to access their child's school report for the term prior to the hijacking and following the hijacking. The younger grades were not included in this research as the class averages were not available. The researcher decided not to include high school children in the research due to the multiple extraneous changes accompanying adolescence, such as the changing role of the peers, the potential adolescent-adult conflict and the physiological changes. The researcher assumed that these factors might complicate the research and would need to be taken into consideration.

Once parental permission had been granted, the researcher accessed the following information per child:

- the school report a term before the trauma occurred
- the school report a term following the trauma

In addition, the researcher obtained the class averages for each of the above time periods. The researcher intended to compare each child's average score to the class average in order to assess whether the traumatised child's individual performance had changed or whether there had been global changes within the class. The researcher observed that there was an average time period of 4 months following the hijacking.

3.4.3 Research Design

In a true experiment the subjects are randomly assigned to the treatment conditions (Rosnow & Rosenthal, 1996). In this study, the subjects had already been exposed to the treatment condition (the hijacking experience). Therefore, the research design is non-experimental / ex-post facto.

3.4.4 Statistical Analysis

To assess whether experiencing a hijacking affects the child's academic performance is a difficult procedure for the following reasons:

a) The researcher cannot estimate which children will be hijacked. Therefore it is impossible to arrange pre and post testing.

b) The children attend different schools and it is unlikely that the school's estimates of abilities will be the same.

c) Although the children are all drawn from a homogenous population (car owning Gauteng families) it is difficult to determine the true nature of the population of hijacked children and whether this population forms a normal distribution.

3.4.4.1 Child's mean academic score relative to class mean academic score

For the above stated reasons, the variate used for the analysis was the ratio between the child's average mark and the class average expressed as a proportion:

$$\frac{\text{child's average}}{\text{form average}}$$

This allowed the researcher to consider the children's performance during the relevant school terms relative to the class results.

3.4.4.2 The Sign Test

On the basis of the null hypothesis (Ho) stating that the hijacking produced no effect on the child's academic performance, we would expect the probability of obtaining an increase in school performance to be equal to the probability of obtaining a decrease in school performance. Therefore, if trauma has no effect on children's school performance,

there will not be a significant difference between the number of children who improve academically and those who decline in academic performance. Therefore, in examining the post-trauma and pre-trauma difference, there will be a balanced occurrence of positive and negative signs.

In order to determine if there was a significant change in academic achievement it was decided to perform the Sign (+ ; -) Test.

Statistical hypothesis

Ho: P1 = 0,5

H1: P1= 0,5 where P1 is the probability of obtaining an improvement in performance (as indicated by a positive score). Assume alpha= 0,05 (Probability of incorrectly rejecting Ho).

Therefore, if the hijacking had no effect on the sample's academic performance, it can be assumed that there would be a balanced number of children whose performance improved and whose performance deteriorated. There would be no significant changes in the children's post-hijacking performance scores.

3.4.4.3 The Wilcoxon Matched-Pairs Signed-Ranks Test

As the distribution of this variate is unknown, it was decided to implement a nonparametric statistical test: The Wilcoxon Matched -Pairs Signed-Ranks Test. This test was implemented to calculate whether the children's academic performance had been significantly affected by their hijacking experience.

CHAPTER FOUR THE RESULTS

4.1 INTRODUCTION TO THE CHAPTER

The results of the research are presented in the following sections:

In section 4.2 the sample's average (mean) academic results both pre and post trauma are presented. The class averages for the same academic terms are presented. Each child's performance can be evaluated by comparing it to the class averages.

In section 4.3 the child's mean academic score is expressed relative to her/his class mean academic score.

In section 4.4 the Sign Test is administered to the data to determine whether there is a significant difference between the number of children whose performance has improved and those whose performance has not improved.

In section 4.5 the Wilcoxon Matched-Pairs Signed-Ranks test is implemented in an attempt to determine whether the experience of a car-hijacking has had a significant effect on the sample's academic performance.

4.2 AVERAGES

As can be observed in Table 1 each subject's average result in the term preceding the hijacking and following the hijacking is presented. The class averages for the same terms are also presented. On face value, each child's academic performance score both before and after the hijacking can be observed. This will offer a superficial raw score analysis of how each child's performance was affected by the hijacking. In addition, the researcher can crudely compare each child's performance both before and after the hijacking to her/his class performance.

Table 1

Average academic results of each child and her/his class in the time period before and after the hijacking

RESEARCH SUBJECTS	AVERAGE ACADEMIC SCORE PER SUBJECT PRE-TRAUMA	CLASS AVERAGE	AVERAGE ACADEMIC SCORE PER SUBJECT POST-TRAUMA	CLASS AVERAGE
1.	60	59	49.4	59
2.	71	61	69	59
3.	57	61	60	62
4.	86	59	83	58
5.	77	65	80	67
6.	72	67	70	66
7.	75	67	76	69
8.	69	67	69	70
9.	74	71	70	72
10.	82	75	80	75
11.	74	76	74	77
12.	73	74	75	76
13.	81	66	77	68
14.	65	64	71	67
15.	62	61	59	59
16.	87	71	78	68
17.	70	67	68	64
18.	69	68	71	68
19.	79	70	83	69

According to Table 1, it can be seen that subjects 1,2,4,6,9,10,12,13,15,16,17 academic performance deteriorated in the term following the hijacking. The remaining research subjects' academic performance appeared to improve in the period following the hijacking. These are raw scores and therefore the researcher could not make any final statistical conclusions.

4.3 CHILD'S MEAN ACADEMIC SCORE RELATIVE TO CLASS MEAN ACADEMIC SCORE

In calculating the ratio between each child's average and the class average (child's average score divided by her/his class average score) the aim is to eliminate the differences between the different schools. In as much as the same teacher who made an estimate of the child's average s/he also estimated the class average. As a result, the researcher will be able to assess each child's performance as compared to the class average. This proportion takes into consideration whether each research subject's average (mean) score changed as a result of the trauma or if the change occurred within the class. In the latter, the changes may have occurred due to other extraneous factors (refer to limitations of the research). Table 2 presents each child's proportion score (child's score divided by the class average) for the term before and following the hijacking.

Table 2

Each child's mean academic score before and after the hijacking relative to the class mean academic score

RESEARCH SUBJECTS	PRE-TRAUMA PROPORTION PER SUBJECT	POST-TRAUMA PROPORTION PER SUBJECT
1.	1.017	0.83
2.	1.16	1.17
3.	0.93	0.9677
4.	1.46	1.43
5.	1.18	1.19
6.	1.0746	1.0606
7.	1.12	1.10
8.	1.03	0.9857
9.	1.0423	0.9722
10.	1.09	1.0667
11.	0.9737	0.9610
12.	0.9865	0.9868
13.	1.227	1.1323
14.	1.0156	1.0597
15.	1.016	1
16.	1.225	1.15
17.	1.0448	1.0625
18.	1.01	1.0441
19.	1.128	1.20

From this table we can see each child's score before and after the hijacking represented in proportion form. It appears that subjects 1,4,6,7,8,9,10,11,13,15,16 have experienced a decline in their academic performance after the hijacking. The greatest change appears to be in the first subject's academic performance.

4.4 THE SIGN TEST

This test aims to determine whether there was an equal number of improvements and non-improvements in school performance (as proposed by the null hypothesis Ho) or, if there were are an unequal distribution of improvements as compared to non-improvements. The pre-trauma average scores were subtracted from the post-trauma average scores to determine the changes in school performance. The researcher noted the resulting sign. A positive sign indicates an improvement in school performance and a negative sign indicates a decrease in school performance.

According to the Binomial Theorem (Roscoe, 1969) if the number of positive scores is less than 4 or greater than 15 then, Ho is rejected. It was calculated that there were 11 negative scores (deterioration in performance) and 8 positive scores(improvement in performance). Therefore the Ho is not rejected (Assume alpha = 0,05). There is a 0,50 (50%) probability that there will be positive scores (improvements) and a 0,5 (50%) probability that there will be negative scores (non-improvements).

TABLE 3

Post-hijacking proportion subtract pre-hijacking proportion

RESEARCH SUBJECTS	PRE-TRAUMA PROPORTION PER SUBJECT	POST-TRAUMA PROPORTION PER SUBJECT	SIGN INDICATING THE DIFFERENCE BETWEEN POST- AND PRE-TRAUMA PROPORTION
1.	1.017	0.83	-
2.	1.16	1.17	+
3.	0.93	0.9677	+
4.	1.46	1.43	-
5.	1.18	1.19	+
6.	1.0746	1.0606	-
7.	1.12	1.10	-
8.	1.03	0.9857	-
9.	1.0423	0.9722	-
10.	1.09	1.0667	-
11.	0.9737	0.9610	-
12.	0.9865	0.9868	+
13.	1.227	1.1323	-
14.	1.0156	1.0597	+
15.	1.016	1	-
16.	1.225	1.15	-
17.	1.0448	1.0625	+
18.	1.01	1.0441	+
19.	1.128	1.20	+

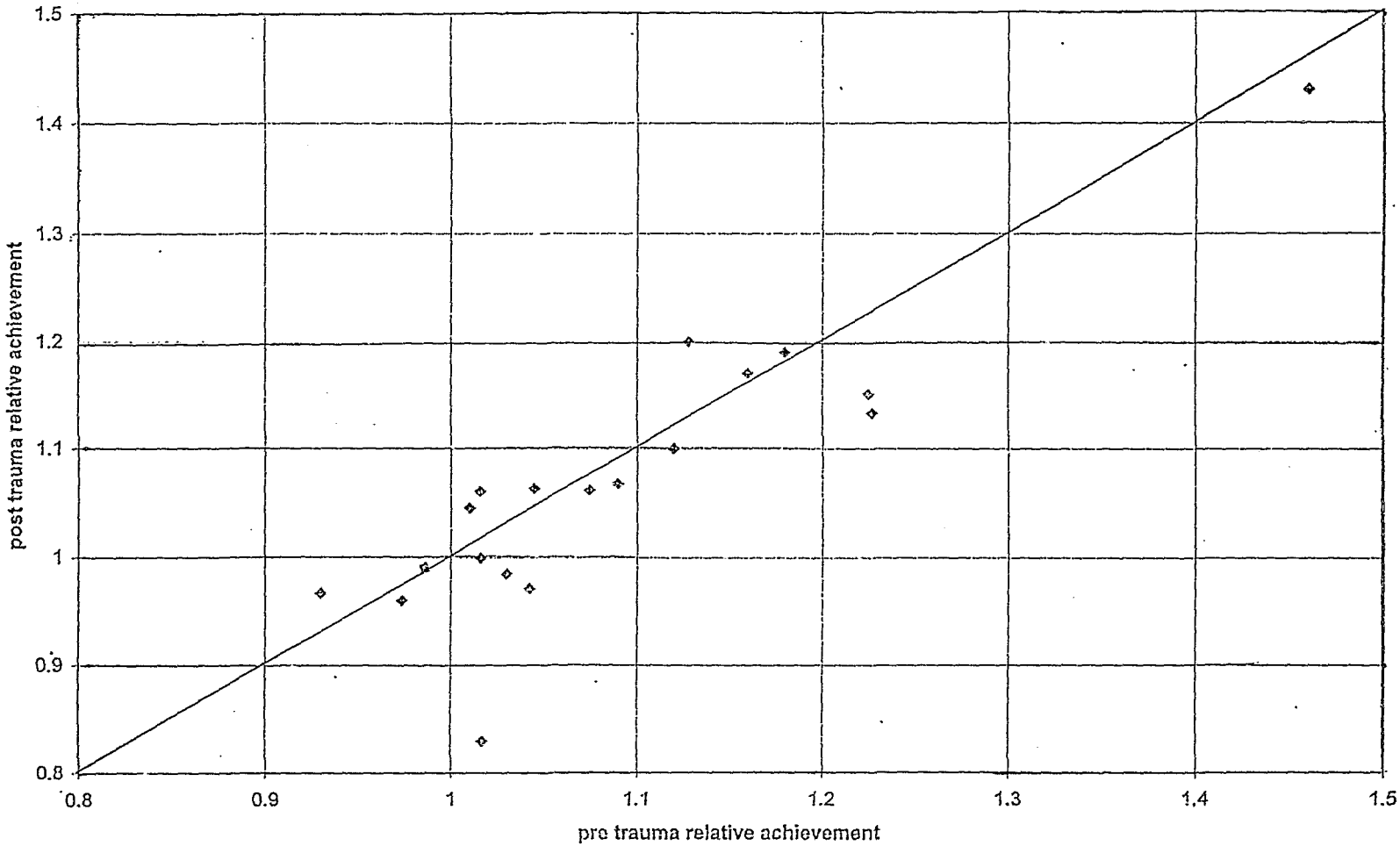
As indicated in Table 3 there are no significant sign differences between the academic results pre and post-trauma (alpha= 0,05). The researcher can conclude that there is insufficient evidence to suggest that car-hijackings have an effect on children's subsequent academic performance.

4.5 THE WILCOXON MATCHED -PAIRS SIGNED-RANKS TEST

The Wilcoxon Matched-Pairs Signed-Rank Test was administered to determine whether the experience of a car-hijacking affected the academic performance of the research sample of children. This test compared the pre and post scores of the subjects.

On Graph 1, the scores that fall below the diagonal axis indicate the research subjects whose school performance deteriorated following the hijacking. The scores that are plotted above the diagonal axis indicate the children whose academic performance has improved following the trauma.

Academic achievement relative to class average before vs after trauma



As can be seen on the Graph, it was calculated that there were 8 children whose school performance improved by any margin. There were 11 children whose school performance deteriorated by any margin. These findings are non-significant according to the sign test. There appeared to be only one child (subject 1) whose school performance significantly deteriorated. This child's pre-trauma average score relative to class average score was 1,017. This child's post-trauma score was 0,83.

The calculated t value is 65 (p greater than 0,05). These results once again indicate that the academic changes within the research sample were non-significant. It can be concluded, that the experience of a car-hijacking did not significantly affect the subsequent academic performance of this sample of primary school children.

CHAPTER FIVE THE DISCUSSION

This chapter discusses the results of the study and draws conclusions from the data. The limitations of the study are noted and suggestions are made for future research.

5.1 Interpretation of the findings

5.1.1 The Sign Test and the Wilcoxon Matched- Pairs Signed -Ranks Test

In this sample, the sign test revealed that there was a probability of 0,5 (a 50% chance) that the hijacked children's school marks would improve and a 0,5 probability (50% chance) that their school marks would not improve. This indicated that there was a balance between those who academically improved and those who academically deteriorated. In other words, there is no consistent effect over time on academic performance on the victims of this type of traumatic event.

The results of the Wilcoxon Test also indicated that there were no significant changes in the academic performance of these hijacked children. There was only one child (subject 1) whose academic performance deteriorated significantly. This child's mother reported that at the time of the hijacking she and her husband had separated. This additional trauma (parental separation) could have seriously contributed to the academic decline of this research subject. With exception of this one child (subject 1) who experienced academic decline, there were no significant academic changes. This does not concur with the findings of the bulk of the literature reviewed with the exception of Terr (1990) who suggested that traumatic experiences do not affect the long-term academic functioning and performance of children. She based her conclusions on her vast research with children who had experienced different traumatic events, such as hijackings, abuse.

In the present study, the post-measurements were implemented several months after the hijacking. If there were any academic performance effects immediately following the trauma, these effects may have decreased in intensity or even subsided by the time the

post-measurements were administered. The post-measurements may not have reflected any short-term academic effects.

In addition, it is important to consider that the research methods may not have been sensitive enough to detect such effects. If the research design and methods of statistical analysis had been that of a true experiment, where the researcher has control over the research variables, the researcher may then have observed more specifically whether there had been academic changes in the post-trauma school performance (Rosnow & Rosenthal, 1996). However, due to moral and ethical limitations the researcher could not implement an experiment.

It is possible that these research findings could have been affected by various extraneous mitigating factors, such as available support, child's temperament, past traumatic experiences. These factors (refer to chapter 2) could affect the child's ability to cope with the hijacking trauma but were not controlled for in this study because if they had been, it would not have been possible to obtain a sample of sufficient size.

The literature suggesting that traumatised children experience academic decline does not appear to consider whether or not the children experienced any form of counselling following the traumatic experience. In this research, the researcher was told during data collection that each child in the sample had had some form of trauma debriefing following the hijacking. This was coincidental and became a confounding variable which seems to have had considerable effect on the research findings. The researcher had not intended to address the issue of counselling versus non-counselling in the dissertation but it must be considered that this may have decreased the possibility of experiencing changes in academic performance. According to Monahon (1993), treating traumatised children allows the child to release her/his feelings, and offers relief from post-traumatic symptoms and behaviours. She continues to explain that these children regain a sense of mastery and control within their worlds. One of the goals of treatment is to help the child develop a sense of trust in the world, in her/himself, and in the future once again. It is through the

treatment that the child attempts to develop some understanding of what has happened and to eliminate feelings of self-blame. Lewis (1999) proposes that psychotherapy will promote feelings of competence and confidence in the child. Treatment can also minimize the potential long-term effects of trauma. This is probably the greatest contributing factor to the non-significant results of this study. Therefore, the experience of psychotherapy following a trauma should be considered when examining the effects of the trauma on the child's academic functioning

That there were no deaths in the hijackings could possibly have contributed to the non-significant result. Traumatic bereavement evokes different responses and processes in children and this would need to be considered when examining the academic effects of a hijacking on children.

5.2 SHORTCOMINGS AND LIMITATIONS OF THE RESEARCH

This research attempted to examine the academic performance of a sample of South African children following a car-hijacking. The sample was drawn from 8 schools in the Gauteng area representing government and private schools. The sample size was small (N=19) and only two racial groups were involved. This was because there were no responses received from the other racial groups. The sample included children in Grades 4 to 7. These factors limit the generalizability of the research findings because the results can only be generalized to children of similar circumstances.

There was a low response rate to the questionnaires distributed within the schools. There were parents who were unwilling to involve their children in the research. The researcher, therefore, could not consider the academic performance of the children who did not participate in the research and valuable information was inaccessible.

Due to the nature of the research, the researcher could not implement an experimental research design. This limits the research findings as the researcher cannot make causal conclusions. In addition, the non-experimental nature of the research prevents the

researcher from controlling the testing conditions. The researcher was only able to measure the academic performance of the research subjects whose parents had permitted them to volunteer. There could be many confounding variables in this type of research design , such as support available, family, etc. If the researcher had controlled such nuisance variables, for example by matching, the researcher would possibly have lost members of the sample and it would not have been large enough to draw research conclusions.
The researcher was not able to obtain immediate post-trauma academic measurements because the school exam results were available only five months after the hijacking. Therefore, the children were not several days/weeks following the trauma.

The researcher did not enquire whether any of the children in the sample had been exposed to other traumatic life experiences during the period of testing. These experiences may have contributed to changes in the children's academic performance. If the researcher had observed significant academic changes in performance, the researcher would have needed to consider whether these changes had occurred due to the hijacking or due to other traumatic events which the child had experienced.

The major drawback of this study was the confounding variable of trauma debriefing. The researcher found during the course of data-gathering that all the children had some form of trauma debriefing and this is highly likely to have contributed to their post-trauma functioning. School performance may have been more adversely affected if the children had not received trauma debriefing. This certainly limits the generalizability of the findings. The researcher is only able to generalize to children who have received some form of psychotherapy following the trauma.

During the hijackings there were no deaths. This further limits the generalizability of the research results because the researcher can only generalize to children involved in hijackings where there are no deaths. If anyone had been killed during the hijacking, the

variables of loss and grieving would need to be considered. These variables may impact on a child's academic performance.

5.3 SUGGESTIONS FOR FUTURE RESEARCH

Studies on the effects on academic performance of children involved in car- hijackings are warranted in South Africa, but these studies need to be carried out on large numbers of victims of various age groups, ethnic groups and in different areas within South Africa. This will yield important results and the generalizability of the results would be enhanced.

The researcher should examine to see whether the children in the sample have undergone any form of trauma debriefing or psychotherapy. A similar study could be undertaken in which the researcher compares the academic performance of traumatised children who were counselled to the academic performance of those who were not.

The researcher would need to assess the nature of the hijacking to determine whether anyone involved was seriously injured or even killed. This may have a serious effect on the child who witnesses such events.

Studies should take into consideration whether the research subjects had experienced any other traumatic event in their lives, such as divorce or death. These experiences may have a significant effect on how the children cope with the hijacking experience.

CHAPTER 6 THE CONCLUSION

This study was undertaken due to the high levels of crime in South Africa involving many children. The focus of this study was the effects of hijackings on the academic performance of primary school children four months after the hijacking. A review of the literature indicated that there were some researchers who proposed that children were academically affected by a traumatic experience while, there are other researchers who suggested that children were not academically affected by a traumatic experience. Terr (1990) who studied children involved in a bus hijacking, suggested that children's academic performance is only affected for a short period of time immediately following the traumatic experience.

The research involved a sample of 18 children from 8 different schools. These children's academic performance was measured both before and after the hijacking experience. Each child's class average was taken into consideration as the researcher had attempted to determine if the academic changes had occurred within the entire class or only within the traumatised children. The Sign Test and Wilcoxon Matched-Pairs Signed-Rank Test were implemented to determine whether the hijacked children had experienced a significant academic decline following the hijacking experience. The statistical analysis indicated that there was no significant correlation between the experience of a car-hijacking and academic performance after a five month period. Only one child in the sample showed significant academic decline but, it was observed that his parents were separating at the time of the hijacking. This may have contributed to his change in academic performance.

While conducting the research, the researcher discovered that all the children had had counselling after the hijacking. This could have been a confounding variable that affected the results. This should be taken into consideration in future research.

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APPENDIX A: PARENTAL QUESTIONNAIRE /CONSENT FORM

Dear Parents, September 1999

I am presently conducting my Masters in Educational Psychology at the University of Witwatersrand. My research involves examining the effects of hijackings on children's school performance.

The aim of this research is to create a greater awareness and understanding amongst school professionals and parents of the possible difficulties traumatised children may be experiencing.

I would like to emphasise that confidentiality is of the utmost importance to the researcher and no child's name will be mentioned in any research material.

All that is required of you is that if your child has been involved in a car-hijacking, to please submit the tear off form below to your child's class teacher, who will then forward this form to the researcher. This consent form will allow the researcher to gain access to your child's academic record pre and post traumatic incident. No contact will be needed with the child or parent. However, should you wish to have contact with the researcher for any queries, please feel free to do so at : 082 -3745505 or (H) 882-2694

Your participation in this research will be greatly appreciated, as it will hopefully provide us with further insight into the effects of trauma on children.

On completion of the research, the research findings will be presented to the staff and parents of the school.

Yours Sincerely,

Feldman

Vanessa Feldman

Form to be returned.

Name of child: _____

Age of child: _____

Date of hijacking _____

Teacher's name during the year of the hijacking _____

Current teacher's name: _____

APPENDIX B: SAMPLE DATA

SCHOOLS	RESEARCH SUBJECTS	GRADE AT TIME OF TRAUMA	AGE AT TIME OF TRAUMA
School A	1	5	11 yrs 9 mnths
	2	5	11 yrs 1 mnth
School B	3	5	10 yrs 11 mnths
School C	4	6	12 yrs
	5	5	11 yrs 2 mnths
School D	6	4	10 yrs 5 mnths
	7	4	10 yrs 4 mnths
	8	4	10 yrs 9 mnths
	9	7	12 yrs 4 mnths
	10	5	11 yrs 4 mnths
School E	11	4	10 yrs 7 mnths
	12	4	10 yrs 6 mnths
School F	13	5	10 yrs 11 mnths
	14	4	11 yrs 2 mnths
	15	4	11 yrs 1 mnth
	16	4	10 yrs 7 mnths
School G	17	4	10 yrs 10 mnths
	18	7	12 yrs 4 mnths
	19	5	10 yrs 8 mnths

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