FAMILY STRESS AND CHILDHOOD ACCIDENTS

A Study of Time Relationship between Stress-producing Events within the Family and Childhood Accidents

by

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ABSTRACT

A descriptive study of family stress and childhood accidents was carried out as a group project, under the joint auspices of the Faculty of Medicine and the School of Social Work at The University of British Columbia. It was designed as a behavioral approach to the prevention of childhood accidents. The hypothesis developed and tested was: there is a significant relationship in time, specifically within 30 days, between the occurrence of stress-producing events in the family and accidents resulting in injury to one or more children of that family.

A review of the literature indicates that accidents may be symptoms of disorder in the family. In keeping with the holistic view of human behavior, a broad, interrelated systems approach was utilized, integrating the theories of role and ego functioning as a conceptual framework to study the relationship of psychosocial factors to accidents.

The population of families of 40 accident-repeaters was derived from an earlier epidemiological study of pedestrian traffic accidents involving children, undertaken by the Departments of Preventive Medicine and Pediatrics, The University of British Columbia. The families were interviewed and material was collected by means of research interviews based on an Interview Survey Guide which was specifically devised.

The findings point up that the hypothesis was not validated within the narrow time period of 30 days, and there were strong indications that isolated stress was not related to the occurrence of childhood accidents. However, in some of these families prolonged stressful situations and multiple accidents were found to coincide. Therefore, this is one area which merits a future study - prospective in nature.

The challenge to social work in such a significant problem as childhood accidents is very apparent. The study clearly indicates the ways in which social workers as members of community or agency interdisciplinary teams, with their particular knowledge, attitudes and skills can contribute to accident prevention. Their efforts may be developed in the following areas: direct family treatment, family life education, creation and development of community resources, encouragement of community participation and broader public safety education.
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CHAPTER 1. INTRODUCTION

A. Nature of the Problem

In keeping with concern about the fact that accidents are one of the foremost causes of death and disablement in the world today, the four writers undertaking this group study enlist the cooperation of a group of citizens, namely parents, in one area of investigation which, it is hoped, will elicit promising leads for future efforts in the human sciences toward the ultimate goal of accident prevention. The focus of this descriptive study, a joint project under the auspices of the Department of Preventive Medicine and the School of Social Work at The University of British Columbia, is upon the possible relationship in time between stress-producing events in the family and the occurrence of childhood accidents. The writers' interest in family stress and childhood accidents was heightened by the results of an earlier research project carried out at The University of British Columbia.

The Earlier Study

A descriptive study carried out by the Child Health Programme of the Departments of Preventive Medicine and Pediatrics in the Faculty of Medicine of The University of British Columbia on 713 motor-vehicle accidents involving 749 child pedestrians in the City of Vancouver during a three year period from 1958 to 1960, pointed up the fact that in the 1960

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group there were 61 accident-repeater children. It suggested that further study of these children and their families might yield information regarding possible identification of situations involving potential accident victims. Therefore the writers planned to approach the families of these identified accident-repeater children and seek their assistance as subjects in the current study. A common criticism of accident research is that much of it involves repetition of earlier projects, rather than utilizing previous findings. The writers attempt to avoid this error.

**Accident Occurrence**

Evidence abounds to attest the fact that accidents of all kinds, particularly those occurring to children, constitute a major cause of morbidity and mortality in the general population today. Despite progressive public enlightenment, it is seldom realized that "accidental injury is the leading cause of death during childhood, as well as a most frequent cause of disability," and that "more children die each year from traumatic injuries than from the next three leading causes of death combined."¹ This statement is borne out by innumerable statistical compilations, such as that of the United States Safety Council, which, in 1962, reported that in 1959, accidents claimed the lives of 11,402 children between the ages of one and fourteen years, with the second leading cause of death, cancer, following far behind, with 4,138 deaths.² As reported in the previous study by Read et al.:

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² Ibid., p. 97.
"Canada has always suffered from one of the world's highest accident fatality rates, but the effects were formerly obscured by infective and contagious diseases which caused twice as many deaths. Today, there are over five times as many deaths from accidents as from infective and contagious diseases." ¹

The earlier study, outlined various environmental conditions in the City of Vancouver affecting the occurrence of child pedestrian traffic accidents and noted that those conditions, "along with adult or parental factors and the amount of safety education the child had received, would, no doubt, appreciably influence his behavior in traffic." It also stated that "it was felt that...children, being influenced mainly by example, developed (the) same false sense of security toward the hazards of the road" as that exhibited by adult pedestrians and, perhaps, is "reinforced by the school safety patrol system, which protects the child at the dangerous intersections on his way to and from school."² These comments indicate the promising research approach which considers as possible causal factors the interaction between the accident victim and his physical and social environment.

Accident Causation

A common criticism of accident prevention efforts is that they are often hampered by inadequate knowledge about the causes of accidents. There has been a gradual change in philosophical approach to accidents, in which they are increasingly accepted to result from 'acts of Man,' being as such subject to his control, and less believed to come about from 'acts

¹ Read, J.H. et al., op. cit., p. 688.
² Ibid., p. 689.
of God,' or factors uncontrollable by Man. Early research into accident causation tended to focus on "isolated traits such as reaction time, visual acuity, and selected motor skills," leading to largely insignificant results, but "subsequent research located the crux of the accident problem in the broad area of personal adjustments,"¹ leading to further study by the social sciences and medicine.

Accident occurrence is now explained by many in terms of the multi-causality concept. Recent publications reviewing the literature²,³ have indicated the failure of the segmental approaches and have shown that the individual must be considered as an integrated whole. Therefore, the whole person in his situation must be studied if any sound attempt is to be made to assess causality of accidents. Such a broad, interrelated, interdisciplinary, systems approach to accidents is generally recognized to be more realistic than the narrower theories employed in the past. However, it has been noted that, while pursuit of a single causative factor may be sufficient in easily identifiable cases, the deeper, holistic approach is required in order to deal with more complex accident relationships.⁴ Increasing amounts of public education and also investigation of psychosocial causal relationships are strongly advocated.

The genesis of current activity in accident research may be related to the change in approach which developed when accidents came to be viewed through analogy with the traditional epidemiological pattern for research on disease, involving the presence of a susceptible host, an inciting agent, and a predisposing environment. It had been found that adequate explanation of accidents required creative thinking and research skills from numerous disciplines. The engineer used his knowledge and skills to create a safe environment, the epidemiologist employed preventive measures to reduce accident risk, and, of late, the behavioral scientist has applied his methods and theories to behavioral aspects of accident phenomena. For a comprehensive understanding of the accident problem, it is necessary to consider all of the approaches. This viewpoint, dealing with all of the factors affecting human behavior unites many points of view into a conceptual whole and ties in particularly with the broad scope of the social worker, who takes a holistic approach to human behavior, keeping in mind the innumerable interacting factors in every human situation.

It has been noted that "the behavioral aspects of accidents -- such factors as the climate of the family, the social forces at work in the community, the values of the society as a whole -- have received much less attention than the purely technological aspects." This would mean that attention should be paid to events in the external social environment which became internalized by the child and may become stress-producing.

The medical fields tend to specialize in physiological factors, including those which may be susceptible to the effects of stress, while in the social sciences, there has been increasing awareness of the part played by psychological and social factors.

The Concept of Accident Proneness

The concept of accident proneness has, for many years, existed as an explanation for "the possibility that certain individuals are predisposed to accidents because of their mental makeup and, in fact, have more accidents than the average person."\(^1\) The current, widely accepted point of view is that "the concept and the terminology describing the term are controversial, though it still continues, especially in industrial and child research."\(^2\) As an alternative, the term accident-repeater is used, which is self-explanatory. It has been found that "research, plus mathematical theory, now indicate that accident-repeaters are a relatively small population, account for a minor percentage of accidents, and indeed are a changing population." Thus, "in due time they tend to stabilize and relinquish membership in this special group, while previously "safe" individuals join for a period of time, (so that) the majority of accidents may be attributed to the majority of the population."\(^3\)

From these observations the term "accident prone" implies a rather fixed condition, whereas, the newer, and currently more popular term, "accident-repeater" has greater accuracy, in that it does not imply

\(^3\) Brody, L., op. cit., p. 98.
any more than is objectively apparent through the occurrence of two or more accidents to a particular individual. Yet, as some writers have noted,\(^1\)\(^2\) in many situations, an individual must have far many more than two accidents to be statistically different from the mean, and so form part of the distinguishable small group which is considered to have more accidents than most people.

Although people differ in their initial liability to accidents due to personal factors, their liability could vary through time due to the interaction of personal and environmental causes. It has been determined that, whether or not there exist individuals who, in a given situation, are more likely at all times to incur an accident than their fellows exposed to similar risk, research into the role of "temporary attributes of the individual such as worry, distraction, and ill health, and their effect on factors such as fatigue and vigilance becomes meaningful."\(^3\)

The idea has been discounted that a person is "accident-prone" merely because he has a certain number of accidents over a certain period of time as a result of being emotionally disturbed. It has been suggested that a far better term is "accident-susceptibility," which "takes into account all the factors which tend to predispose an individual to accidents (or protect him from them)."\(^4\) The chance of having an accident is related to the particular environment in which a person lives and the "individual differences in personal adjustment, emotional and otherwise, as determined

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1 Freeman, F. et al., op. cit., p. 26.
2 Read, J.H. et al., op. cit., p. 697.
4 MacIver, J., op. cit., p. 67.
by the efficiency of operation of all human factors.  

"There can be little doubt that the injury is only the end-point of a developing sequence of behavior surrounding the accidental event... It is to be expected that the kind of conceptual approach taken to the accident phenomenon will have a profound effect upon the type of research design used and the kind of data collected." Therefore, in this study the writers will utilize a behavioral systems approach to accidents, employing the theories of role and ego functioning to integrate personal and social factors.

**Systems Approach to Stress and Accidents**

The broad, interrelated, systems approach finds that:

"Accidents have significance beyond themselves. They are always symptomatic of disorder in a particular dynamic system. The disorder may reside in the habits of an individual or the customs of a community or the breakdown of a machine."  

In social work, general behavior systems theory is increasingly being accepted as an aid to psychodynamic understanding of the individual.  

"Systems are bounded regions in space-time, involving energy interchange among their parts, which are associated in functional relationships, and with their environments." General behavior systems theory deals with

living systems, which are open systems, having important inputs and outputs. Systems maintain steady states by negative feedback systems distributing information to sub-systems, such as defense mechanisms, to keep them in orderly balance and also in equilibrium with their environment. Variation might mean destruction. A range of stability exists for any parameter or boundary, and beyond this range is stress and strain.¹

A current view is that "individuals go through temporary states of instability and emotional stress which could make them more susceptible to accidents."² The number of writers accepting this view is increasing. Stress in the family can have great reverberations in all of the other areas of a person's life. In the area of childhood accidents, numerous approaches have been taken in seeking preventive measures. Many earlier studies have suggested that familial events might be related to the occurrence of injuries to children.

Stress is an unavoidable element of life, which may arise from factors internal or external to the individual, or both. It has been defined as "usually the outcome of a struggle for the self-preservation (homeostasis) of parts in a whole,"³ and this has been found to be true of individual cells within man, man in society, and individual species in the whole animate world. Although everyone experiences stress all the time, what is harmful to one person is not necessarily so to another. In an effort to re-establish or maintain dynamic equilibrium, seen in a certain mode and level of social functioning, man tends to absorb stress situations

² Freeman, F. et al., op. cit., p. 26.
through a variety of defensive and adaptive responses, which have been
generalized as "fight" and "flight." These mechanisms include repression,
projection, suppression, resistance, reaction formation, restitution, and
displacement. It is speculated that accidents occur as a result of the
failure of such mechanisms to maintain the individual's equilibrium.

When the family, an open-ended system, receives stress, this is
transmitted throughout, to the various members. Those with weak ego
structures are unable to integrate the stress in order to maintain equi­
librium and so react to it through behavior which may involve the occurrence
of accidents. In a disorganized family, one member may take on the role
of accident-repeater, to serve a purpose in stabilizing family equilibr­
ium.

It is generally accepted that prediction of accidents requires
knowledge of the environmental accident potential, the individual's aware­
ness of environmental accident hazards, motivation toward accident preven­
tion, and individual risk-taking behavior.¹ Stressors may give rise to
temporary accident-susceptibility in an individual's behavior through dis­
ruption of physiological, physical, psychological, social, cultural, or
environmental equilibrium. Safety attitudes may reflect the individual's
belief that "accidents don't happen to me," that everyone must look after
himself, or that accidents do not occur frequently enough to warrant ser­
ious concern. The chance combination of situational factors in a certain
way may or may not create the correct conditions for an accident to take
place. Thus, at times, the careless person is protected, while on other

occasions he might, through coincidence, become an accident victim.¹

It would seem that the three basic needs of affection, security, and self-esteem exert a direct influence upon the above mentioned behavior, and are apparent in the modes of expression unique to each individual personality. It has been pointed out that, "when satisfaction of these needs is blocked, or over-done, accident potential increases, temporarily at least, (and) obviously involved are the origin and age of a 'condition;' compensating or adaptive processes; and the variety and duration of relevant environmental factors -- all somewhat subject to chance."² In the case of childhood accidents, it is particularly important to include consideration of the many interacting factors affecting the child's sense of security, his self-esteem, and the meeting of his affectional needs.

The systems approach to stress and accident provides a unifying framework for studying social factors, conceptualized through role theory, and personal factors, viewed through the framework of ego functioning.

Family Role Performance and Stress

The concept of role is recognized as having particular value in our systems approach to the time relationship between stress-producing events within the family and childhood accidents. Therefore it will be discussed in some detail.

In the social sciences; and particularly in social work, the concept of role is widely employed to integrate the personal and social factors underlying human behavior. Perlman, in an article looking at

¹ Brody, L., op. cit., p. 93.
² Ibid., p. 99.
the implications of the concept of role for case workers, has defined role as "a person's organized pattern of actions and attitudes, fashioned by the position and function he is carrying in relation to one or more other persons." She further states that "it is always a reciprocal interacting relationship and the family may be seen as a network of role-relationships."

To readily understand that role is a dynamic concept, and that change in one of its factors may alter an individual's or a group's social functioning, the components of social role are identified as: the interrelatedness of all of a person's roles; the reciprocity of roles carried by various people in relation to each other; the role network, which includes both the interrelated roles of the individual and the reciprocal role performance of those with whom he interacts; the range of role performance; role expectations or activities prescribed as appropriate for the role by the social norms, which must be accepted by individual and society; role perception, involving the way in which the role is viewed by the performer or the reciprocal person; and role performance modification, involving changes in role behavior.

There are many factors in an individual's life that may lower the performance of one or several roles as a result of affecting the functioning of personality in any of its aspects. Because of the reciprocity of role behavior and the interrelatedness of roles, difficulties in role performance may create stress, which may further detract from role perform-

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ance in the same area or in others. Therefore, prolonged or widespread stress in role functioning can result in extended role breakdown and even personality disorganization. It is speculated that accidents may be considered symptoms of an individual's inability to cope with personal or social stress. There are, however, various reasons for role impairment, which may be both a cause and an effect of stress, and it is defined as "a situation of stress, which involves threat."¹

Three component elements of a stress situation have been found to consist of the following: the stress factor which threatens; the value which is threatened; and the reactions, individual and collective, to the threat. The reactions consist of "responses made by the individual with the goal of maintaining the level of social functioning which existed prior to the occurrence of the stress."² Responses to stress vary, depending on the tolerance threshold, which includes somatic and ego capacity; nature, intensity and scope of stress; and the vulnerability of the factor affected by stress.³ Role support during stress through social contacts, professional or non-professional, is very influential to social functioning, and its strategic timing might be utilized to bolster an individual's stress tolerance with the hope of limiting his susceptibility to accidents.

Stressful conditions in terms of role theory have been outlined in terms of excessive or frustrating role expectations; unfulfilled, non-available, ambiguous, conflicting and incompatible roles; role transition, involving more than one person; and discontinuity in role sequence. As

³ Loc. cit.
modes of adaptation and adjustment to the above stressful conditions, the
following have been delineated: role-abandonment, which may be a response
to excessive, frustrating, ambiguous, conflicting or incompatible expecta-
tions of another role; role-innovation, which responds to the non-exist-
ence of a role in a given group; role redistribution, which occurs in
response to unfulfilled roles; assumption of culturally disapproved roles,
of which the causal factors in stressful situations are not clearly under-
stood; role-conformity, in which previously held, now inappropriate role-
expectations are rigidly adhered to; role-compartmentalization, involving
utilization of one set of role-expectations at a time in a situation where
incompatible role clusters are involved; role-retrogression, often a benef-
icial response to illness; and pairing with a professional person in the
human relations field, such as a social worker, in response to stress.¹

The healthy family today "is not only the focal point of frustra-
tions and tensions but also the source for resolving frustrations and re-
leasing tensions....Through its capacity for sympathy, understanding, and
unlimited support, the family rehabilitates personalities bruised in the
course of competitive daily living."² Solidarity is an important aspect
of life in the family, as a group."In a sense, the family contains built-
in problems of solidarity in that children have to be socialized for indep-
endent existence outside the family."³ Numerous studies have noted that

large families are particularly vulnerable to major crises, which have to be met through the sacrifices of older children and through united efforts by the family.\textsuperscript{1,2} It might be speculated that the absence of solidarity in the family perpetuates stress, disharmony and disequilibrium within the life systems of its members, especially children, making them vulnerable to a variety of afflictions, depending upon individual capacities for coping with stress. Accidents might result from behaviors employed in relieving the tension from such stresses in the family. On the other hand, a stable, secure home life might well help a child to regain his equilibrium lost, for example, through stress at school.

Factors conducive to good adjustment to crisis have been found to be family adaptability; family integration; affectional relations among family members; good marital adjustment of husband and wife; companionable parent-child relationships; family council type of control in decision-making; social participation of wife; and previous successful experience with crisis.\textsuperscript{3} Physiological factors, such as inherent constitutional limitations, sickness, disability and the output and state of energy are very important determinants of social functioning, as are environmental factors -- "the physical, social and cultural conditions outside man with which he constantly interacts in the sense that he affects them and they affect him."\textsuperscript{4} In the social environment of the individual there are many important factors affecting adjustment to crisis, which are sometimes overlooked. These consist of his social situation, people in his role network;

\begin{enumerate}
\item Cousins, A.N., \textit{op. cit.}, p. 405.
\item Hill, R., \textit{op. cit.}, p. 139.
\item \textit{Ibid.}, p. 148
\item Boehm, W., \textit{op. cit.}, p. 95.
\end{enumerate}
his reference groups; the instrumental factors available to the individual in performance of his roles; the prevailing ideologies and norms in society as a whole or in part; economic, political, physical and technical changes; societal indifference or lag in defining roles of population groups; and social stratification.1

The profile of individual and family adjustment arising from crisis involves the broad stages of crisis; disorganization; recovery; and reorganization.2 Families tend to be strengthened by successfully coping with crisis, whereas morale and structure suffer when defeat occurs in crisis.3 "Hardships may be defined as those complications in a crisis-precipitating event which demand competencies from the family which the event itself may have temporarily paralyzed or made unavailable."4 It has been found that "accident-proneness is disproportionately high among individuals who lack self-confidence and are characterized by anxiety," and family crisis-proneness has similarly been related to the definition of a situation made by those involved.5

The family's definition of events determines whether or not the events become crises. Crisis-provoking events have been termed stressors.6 "Adjustment to a crisis that threatens the family depends upon the adequacy of role performance of family members, (and) personality changes in members reflect the anxiety and feelings of insecurity engendered by the

1 Boehm, W., op. cit., p. 102.
2 Hill, R., op. cit., p. 146.
3 Ibid., p. 141.
4 Loc. cit.
5 Ibid., p. 145.
6 Ibid., p. 141.
crisis.\(^1\) It is noted in the literature that problem or crisis-prone families are characterized by having insufficient resources for meeting crisis. Crisis-prone families and multiproblem families have been found to have many similarities, and it has been suggested that crisis-proneness runs in families as does accident-proneness.\(^2\) Family difficulties have been studied from a variety of viewpoints, which include the following: the source; effects upon the family configuration; type of event impinging upon the family; role conflict; and status change.\(^3\)

It has been stated that the concept of social functioning "places on society the responsibility to do everything possible (within the boundaries of reason and justice) to contribute to balanced living; it places on the individual the correlative responsibility to make use of these offerings for the good of others as well as self."\(^4\) The concept of balance, which is continually being explored in social work practice and the behavioral, medical and social sciences, is increasingly being accepted as a vital factor in man's relations with other men. Psychological and physiological theories are emphasizing homeostasis or balance, and psychoanalytic theory postulates ego psychology, in which the ego is viewed as "the agent responsible for maintaining an ongoing reconciliation between the various forces that influence both overt and covert behavior; in so doing it acts as a balance-wheel for the whole of mental life.\(^5\)

\(^1\) Hill, R., op. cit., p. 147.
\(^2\) Ibid., p. 143.
\(^3\) Ibid., p. 147.
\(^5\) Ibid., p. 73.
In the field of accident research, as in other areas investigating the causes of human behavior, we must utilize a comprehensive multidisciplinary approach in studying the world's most complex and intricate creature -- man.

Individual Ego Functioning and Stress

The rationale to be followed by our research study is that stress-producing events may have an impact upon the ego functioning of a child, causing established behavior controls to disappear, with the result that impulse takes over, rather than thinking through a situation and exercising self control.

The theoretical approach followed by the Marcus group has been found to be very applicable to our study. They have considered the "maladjusted individual" to be "a type whose physiological and/or psychological mechanisms of defense fail to adapt adequately to a transient or chronic life stress situation, who may then shift into the accident prone group, (and have said that) the probability of accidents diminishes with age, learning and improved physiological and psychological adaptation, up to maturity." ¹ Freud, in his early writings developed a hypothesis as to why certain individuals might be more susceptible to accidents, namely that many apparent accidents of his patients were self-inflicted injuries, which, although apparently unintentional, were serving some need in a way not necessarily recognized by the patient. ² This thesis has been modified and

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2 Ibid., p. 5.
expanded throughout the years.

The concept of adaptation is basic to the understanding of behavioral patterns in the individual with his internal forces, as he interacts with the environment. What is observed in a person's behavior is the product of execution of the ego functions of perception or reality-testing, defense or adaptation, and integration, expressed in the person's social functioning, which is affected both by factors within and outside the personality. Of the three forces in personality -- the id, ego, and superego -- the ego is that force which relates internal, instinctual id impulses to external, prohibitive, moral and social values of the superego. The functioning of the ego, which has both intellectual and emotional factors, involves the expression of motivation or reality-related striving, as well as the expression of capacity.

It is generally accepted that parents should also be considered, when studying children's behavior with their basic dependency upon their adult environment for protection, care, nourishment, affection, and mental stimulation. The complex phenomenon of adaptation involves many factors, such as "the individual's basic endowment, his capacity to develop memory, perceptions, judgment, activity type,...actions based on mental activity, such as defensive or protective mechanisms, and the integrative capacity when experiencing feelings, thoughts, and impulses toward motor action, (as well as) problem-solving techniques."\(^1\) This adaptational "ego" functioning develops from the rudimentary adjustive apparatus present in the infant, growing more complex and effective with maturation. "The individ-

\(^1\) Marcus, I.M. et al., op. cit., p. 40.
ual may react to a given situation either with previously developed modes of adaptation or by utilizing a new pattern, (so) one may speak of 'regressive' patterns and 'progressive' patterns, the latter being consistent with maturation and development.\textsuperscript{1}

In the child, tension from family stress leads him to behavior aimed at relief, which may, in itself, create additional stress. In the dynamic whole of the parent-child relationship, healthy and unhealthy re-adjustments are continually being made. Unhealthy new levels of equilibrium contribute to higher levels of tension by interfering with the achievement of appropriate goals. "The ever changing new levels of equilibrium should serve to aid in survival, relieve painful tension, and permit pleasure experiences and utility values in goal-directed activity."\textsuperscript{2} When tension inhibits anticipatory mechanisms, reality adaptation is weakened and survival value is decreased at the new level of equilibrium. Thus, there is greater likelihood that accidents will take place. It is accepted that there are constitutional factors influencing the individual's ability to tolerate anxiety and react to stimuli. Too, it has been noted that neuromuscular excitability is influenced by 'congenital, maturational, and environmental factors, of which parental attitudes are especially important.'\textsuperscript{3}

Child accidents are closely affected by the parent-child relationship. Extreme activity patterns of the child may make him difficult to satisfy and so frustrate both himself and his parents in the establishment

\textsuperscript{1} Marcus, I.M. et al., \textit{op. cit.}, p. 40.
\textsuperscript{2} Loc. \textit{cit.}
\textsuperscript{3} Ibid., p. 41.
of a mutual relationship, leading to fantasy and ideas of personal omnipotence.

"The child who cannot establish closeness with his parents and who fails to master anxiety through imitation and identification with his parents must rely more on kinesthetic identification and various motor activity patterns. The more one relies on hyperactive motor discharge to re-establish equilibrium, the more likely it is that the individual will move into situations which may provoke disapproval or, if overwhelming, lead into dangerous situations. In contrast, the child with a quiet activity pattern seems to re-establish equilibrium by a greater tendency to withdraw."1

It would seem to be of particular significance that studies on character disordered parents and their children, and multiproblem families,2 frequently encounter characteristics such as those mentioned above, pointing to the broad systems of interrelating internal and external factors involved in any human situation.

Anticipatory thought processes developed through ego differentiation are "of utmost importance in achieving greater independence from immediate environmental stimulation."3 Delay of activity through trial thought processes is less likely in the individual who utilizes the primitive defenses of immediate motor discharge. "Thus, a high activity pattern interferes with the function of higher order defenses, and the differentiation of reaction possibilities becomes more limited, selective control is impaired, and the individual remains enslaved by his early stimulus-reaction pattern."4 Anxiety, which functions specifically to

1 Marcus, I.M. et al., op. cit., p. 41.
3 Marcus, I.M. et al., op. cit., p. 41.
4 Loc. cit.
alert a person to danger, has been described as an intellectual reaction geared to the fear of pain resulting from impending damage. Persistent attacks of anxiety, rationalized into morbid fears, have been viewed as "an interference with progressive ego adaptational mechanisms because, although no danger exists, the ego is exhausted by conflict, flight, and other mechanisms," and self-injurious actions have been seen "as a pain-eliminating response embodied in the 'riddance principle,' the wish to 'get it over with' by rushing into the feared situation or attacking the symbol to which fear is attached."1

The foregoing theories reveal the importance of viewing human behavior in terms of a broad, systems approach and of utilizing the concepts of role theory and ego functioning to integrate personal and social phenomena.

Focus of Our Study

The three established theories which have been discussed provide a framework through which family stress and childhood accidents may be studied, with the ultimate goal of accident prevention.

The fact that many studies, in focusing on segments of human behavior, lose sight of the integral relationship of parts to the whole person, interacting with his physical and social environment, may account for frequent failure to carry results to the ultimate end of developing and applying remedial or preventive measures. In the case of our study, the prevention goal hopefully will be furthered if information is obtained which indicates that stress-producing events in families occur signifi-

1 Marcus, I.M. et al., op. cit., p. 42.
antly close in time to the occurrence of childhood accidents. In such a case, public education of hazards might lead to withdrawal from potentially dangerous situations, when a person is aware that he is adversely affected by stress.

The Review of the Literature which follows indicates that, "all in all, research on childhood accidents suffers from the lack of any conceptual framework to guide the collection, analysis, and interpretation of data." For this reason, recognizing the interaction between the child and his family situation, the previously mentioned concepts from systems theory, ego functioning, and role theory are being used. As a framework for our study, we have adapted a classification of stress-producing events, based on the theories which have been outlined in this chapter (See Appendix A).

B. Background of the Problem

Review of Literature

In reviewing the literature, we shall confine ourselves to material related to the relationship in time between the occurrence of stress-producing family events and childhood accidents. Due to the limitations of both time and information for making an intensive review, the writers will necessarily be restricted to studies which are available and summaries by authorities on unavailable material. Owing to the variation of focus found in much research to date, and the paucity of information pertaining to the relationship between stress and the occurrence of accidents, it seems advisable to restrain ourselves from going too far afield in

examining the multitude of uncoordinated research studies which have been done. Therefore, we shall attempt to consider the interacting factors affecting the accident child in his situation as a dependent family member — physically, psychologically, emotionally, socially and culturally.

With regard to identification of the accident-repeat, Freeman et al. have observed that inconsistent conclusions have resulted from "an enormous amount of research effort (which) has been directed toward identifying the characteristics of the group for the purposes of screening, rehabilitating, transferring, retraining, or simply 'understanding' accidents." A survey by Brody of results from psychological and medical examination, interviews and biographical analyses has suggested the following profile of personality traits of accident-repeaters, not all of which are present necessarily in each such individual:

1. Greater distractibility than average.
2. A tendency to act impulsively.
3. A tendency to be asocial, nonconforming, aggressive, and intolerant of authority.
4. Emotional instability, including difficulty in tolerating tension and frustration.
5. An exaggerated notion of ability, unusual risk-taking and an unhealthy need to stand out.
6. In some cases, a subconscious quest for attention or satisfaction through self-inflicted injury.

These traits must be seen in the context of the total unique personality. It is generally accepted that "an accident repeater in one area of activity, (such as work) also tends to have accidents in other areas (and) necessarily, the occurrences and the consequences are mediated by the physical characteristics of the activity and other aspects of the fields."  

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1 Freeman, F. et al., op. cit., p. 26.
2 Brody, L., op. cit., p. 98.
3 Loc. cit.
For a thorough and concise review of existing material on childhood accidents, the reader is referred to the recent work of Suchman and Scherzer. They have systematized current, uncoordinated research in childhood accidents, under three main headings with numerous sub-classifications, which might be hypothesized as "causes" of accidents for future research (See Appendix B). The main divisions in their classification are the background of the child; the family background (both parents); and the environmental background.¹ In view of these many possible causes of accidents, plus many more, it becomes apparent, particularly when their combined effects in any situation are considered, that the task of determining the influence of one particular factor in causing an accident is almost overwhelming. It has been found that certain factors have received much more attention than others and, for the most part, "coverage has been haphazard, most studies simply making use of easy-to-get or available statistics."²

Suchman and Scherzer,³ in their survey of studies of accidents as related to the background of the child, have discussed heredity, motor and verbal skills, physical and social growth and mental processes as significant factors. They have mentioned various emotional symptoms of interpersonal stress, such as conflict, aggression, impulsive or unreflective behavior, insecurity, bossiness and punitiveness in doll play, solicitation of affection, disruption of harmonious group living, daredevil attitude, easy arousal of emotional reactions, and a rude or insulting attitude to others. The relationship between unmet emotional needs and accidents

³ Loc. cit.
has been emphasized. Accident-children have been found to be immature and emotionally unstable, to feel inadequate, to worry over physical defects and to be highly nervous and physically active. Oedipal conflict and sadó-masochistic patterns have been related to accidents, and personality characteristics, generally, have been suspected as a decisive factor in accidents. Socially, acceptance and status maintenance are important factors which can include hazards. It is concluded that the child's emotional state is a significant accident factor because it may express itself in physical behavior.

With regard to family background, Suchman and Scherzer have found strict religious upbringing, low socio-economic status, inherent constitutional or predisposing factors, and physical and social environments to be significant factors related to occurrence of childhood accidents. It has been noted that often, accident-children come from larger families and broken homes, and are later in birth order which might suggest that role confusion or rolelessness might be related to the frequent emotional instability of accident-children. Among families of accident-children, alcoholism, at least one authoritarian parent, shiftlessness, and disruptive acts are common, and geographic mobility and crowded living conditions are often found. The time of moving has been noted as a particularly high hazard period.

The physical environment of accident-children is generally found to be poor.¹ Accident situation variables have indicated that pre-school children are usually injured at home, gradually moving outside with age.

Sources of injury include falls, blows and crushes, cutting, piercing, ingestion, poisons, burns, drowning, firearms, bites, scratches and attractive nuisances. Accidents frequently occurred in the afternoon and were associated with fatigue. Generally, it was found that childhood accidents occurred in July and August.

Langford and his group found accident-children to be less successful in avoiding environmental hazards of which they were aware; less concerned with injuries, as were their parents; and less secure in family relationships, necessitating more solicitation of affection elsewhere than accident-free children. Of particular note was the much higher incidence of accidents to the immediate family and close associates of the accident children. Of the accident-children, three groups were distinguished. In the first, the children were overactive, restless and impulsive, liked by adults but not by peers, and were maladjusted in response to stress, becoming impulsive and disorganized, not heeding danger signals, and getting into situations where accidents were inevitable. It was speculated that the accidents could well be unmotivated and the defect a developmental one in ego control mechanisms. The second group was characterized by immaturity, lack of parental supervision, insistence by the child on autonomy and self-determination, and competition in activities with older children in a hazardous environment. In the third group were the children who viewed their homes as bleak and empty, had moderately severe conduct disorders before accidents, and later, after releasing pent-up rage and aggression, less resentful and rebellious, salvaging attention from mother when injured,

suggesting that accidents are motivated.

Childhood accidents have been interpreted in a variety of ways by different writers. They have been considered by Melanie Klein to be suicide attempts with yet insufficient means,¹ and have been attributed by Ackerman and Chidester to the basic motives of hurting oneself out of guilt or symbolically hurting others out of revenge, or a combination of these, exhibited in reckless abandon in play resulting from considerable unexpressed hatred and guilt feelings.² Marked psychopathology, such as alcoholism, has been found in a large number of families of accident-children and it has been noted that often, siblings have also been disturbed. The combination of sadistic father and passive, masochistic mother has appeared in a considerable number of cases and in young children, accidents have been interpreted by Fabian and Bender to represent inverted aggressive gestures directed at frustrating adults, often carried into adult life.³ Over-authority in the home has been related to pent-up aggression and resentment in the child.

Among junior high school pupils, accident-repeaters have been found by Birnbach to excel in physical fitness and strength tests and to be in better general health than accident-free students.⁴ However, their home, health and emotional adjustment has proven to be less adequate and

they have been considered less industrious, dependable and adequate at
school, reacting to the stress of adjustment demands with impulsive
behavior and in general, being rebellious and unable to concentrate.
Adjustment problems have also been found by Fuller to be prevalent among
accident-repeater children of the nursery group, with injuries tending to
decline sharply with increase in age.\(^1\) A suggestive correlation has been
noted between frequency of injury and exceptional physical strength, dare­
devil attitudes to others, especially adults, and in girls, tomboyishness,
and it has been indicated by Fuller and Baune that, generally, less popu­
lar children receive a greater number of injuries.\(^2\)

Hospitalized, adult accident-repeaters have been found by Dunbar
to exhibit some common characteristics, being carefree, sociable, well­
 liked people, but irresponsible toward their families and their work.
Authoritarian figures have appeared to be a shared area of conflict, in
which these accident-repeaters have sought autonomy and independence —
when thwarted, reacting impulsively and aggressively, possibly leading to
self-destruction in the depressed individual.\(^3\) It has been determined by
Schulzinger that, among irresponsible and maladjusted people, a higher
frequency of all types of accident has been apparent, and that, under
emotional stress, almost anyone may temporarily become accident-prone.\(^4\)

\(^1\) Fuller, E.M. "Injury Prone Children," *American Journal of Ortho­
\(^2\) Fuller, E.M. and Baune, H.,... Suchman, E.A. and Scherzer, A.L. *Cur­
rent Research in Childhood Accidents*, Research Reprint, 1960, Association
for the Aid of Crippled Children, New York, p. 16.
\(^3\) Dunbar, F., in Marcus, I.M. *et al.*, "An Interdisciplinary Approach to
Accident Patterns in Children," *Monograph: Society for Research in Child
\(^4\) Schulzinger, M.S. *The Accident Syndrome*. C.C. Thomas, Springfield,
1956.
Accident-children have been found by Marcus and his group to give evidence of emotional problems to the same degree as enuretic children, and to have exhibited more activity before and after birth. Their responses have appeared to be more motor than cognitive and their parents have tended to be anxious, insecure and non-assertive.  

A recent, interdisciplinary study by Meyer and his group, exploring certain child, family, and environmental factors associated with injuries has found that "each child appeared caught in a web of enclosing developmental and personal circumstances which progressively drew him toward the injury studied." Acute hunger and extreme fatigue with far less parental supervision than usual were noted, as were hyperactivity, uncontrollability by parents, and inability to tolerate stress. More injured than uninjured control children had suffered early prolonged social deprivation from one or both parents through divorce or illness of parents or child. Parents of these children relied on explanation or punishment as primary preventive measures. It was illustrated that "stressful family life factors were far more common in the 'accident' families studied than in the 'non-accident' comparison group, (and), the climate of stress in the home immediately preceding the accident appeared to have influence in several ways: (A) Acutely stressful events appeared to reduce abruptly the quality of the child's protective human environment at a critical moment of sudden risk; family illness, sudden shifts in supervision, change of residence, and other circumstances appeared to produce hazardous conditions without protection; (B) Chronically stressful factors appeared to impede child rearing in most.

2 Meyer, R.J. et al., op. cit., p. 96.
'accident' families studied, often in combination with acute stress.\(^1\)

In the extended families (parents, siblings, grandparents, aunts and uncles) of injured children, previous accidental injury was found twice as frequently as in control families. Most severe injuries by far were sustained by chronically disordered families which functioned more as isolated individuals than as living units, in which family life was perpetually disorganized and often beset by chronic medical and social problems. Less adequate attention was received by those children when injury occurred, and they were involved in more frequent past injuries than other "accident" or comparison children. Exposure to danger or punishment were major safety measures before the child's injury. "Ninety-five per cent could have been prevented by modification of acute factors such as improved supervision during the most susceptible part of the day when (the child) was reported to be most hungry, tired, or hyperactive."\(^2\)

The results of various studies\(^3,4\) have indicated that accidents in children occur as an interplay of numerous factors, such as the developmental level of the child, involving inexperience, immaturity, curiosity and coordination; and parental attitudes toward accident awareness and prevention. They have been generally adamant in advocating community arousal aimed at community action for accident prevention.

In terms of the interrelated, intra- and interpersonal systems approach which we are employing in our study of the relationship in time

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1 Meyer, R.J. et al., op. cit., p. 102.
2 Ibid., p. 103.
3 Loc. cit.
between the occurrence of stress-producing events in the family and accidents to child members, the research findings cited above give significance to the whole broad context of our study.

The study which follows is an attempt to illuminate one small aspect in the complicated relationship between individuals and stress -- an investigation of the relationship in time between the occurrence of family stress-producing events and accidents to child members. With the framework outlined in this chapter, we shall now move on to our small research project, which, it is hoped, will contribute significantly to the body of knowledge on childhood accident prevention, despite its limitations.
CHAPTER 2. DEFINITIONS AND METHOD

In the previous chapter a number of factors, methods and approaches were discussed, all having been the subjects of investigations in the overall study of accident prevention. The findings of the study of Read et al. included indications that stress-producing events were more frequent in families in which there was a victim of a child pedestrian traffic accident than in families in which there had been no children in such accidents. Similar reports were discussed which confirmed or substantiated their findings and also suggested further leads with reference to the possibility of the occurrence of accidents as a symptom of disorder in a system, in the family, or in society. Implicit in any disorder of a system is the existence of stress-producing events and the responses to those events.

Adaptation mechanisms of the family exist in order to maintain family homeostasis and insofar as mechanisms are functional to handle the degree of stressful situation, the family will adapt without undue dysfunction. However, if there is dysfunction to any degree, then it is possible for symptoms to appear, and it may be found that these symptoms for some families will be accidents.

In contrast to the study of Read et al. of which this is an ex-

1 Read, J.H. et al., op. cit., p. 12.
2 Ibid., pp. 11-14.
tension, this study has excluded any assessment of feelings or attitudes on the part of accident-children or significant adults. No estimate was made of safe practices on the part of the accident-child or of the adults. Neither was there any estimate made of ego functioning as demonstrated, for example, by the perception of a hazard, the estimation of risk, the integration and execution of avoidance patterns, and adaptability.

A. **Purpose**

This present descriptive study\(^1\) was undertaken by four investigators with the purpose of testing the hypothesis that a significant relationship exists in time, specifically 30 days, between the occurrence of stress-producing events within the family and accidents resulting in injury to one or more children of that family.

B. **Definitions**

**Time Period**

The time period to determine the existence of a relationship between stress-producing events and accidents was arbitrarily chosen to be 30 days -- that is, the 30 day period immediately prior to each of the described accidents. It was considered that the 30 day time period could be a reasonable time for a stressful event to have its impact and that anything occurring beyond that time was far removed from the event.

The exact date of the total time period was determined by the date in 1960 of the identifying child pedestrian traffic accident, selected

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from the study of Read et al. Therefore, all accidents which occurred in the two year period prior to, and all accidents after that date until December 31, 1964, were included.

**Stress-producing Events**

Many events are known to be stress-producing to families.¹ The ones chosen for this study were discussed in Chapter 1 and are listed in Appendix A. In summary these are: additions to the family - birth of a sibling, remarriage of a parent, and a relative or boarder joining the household; loss of a family member-by death, illness or hospitalization; changes in marital status - divorce, separation or desertion; changes whereby a parent leaves the home - imprisonment, occupational reasons or the mother returns to work; changes in socio-economic status, either upward or downward; changes in place of dwelling; and accidents to other family members.

**Accident**

The definition of an accident has been the subject of much study by a number of investigators.²,³,⁴,⁵ The definition given by Arbous⁶ has been widely accepted: "... in a chain of events, each of which is planned

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¹ Hill, R., *op. cit.*, p. 139.
² Read, J.H. et al., *op. cit.*, p. 3.
⁴ Suchman, E.A. and Scherzer, A.L., *op. cit.*.
⁵ Suchman, E.A., *op. cit.*, p. 46.
or controlled, there occurs an unplanned event, which, being the result of some non-adjustive act on the part of the individual (variously caused), may or may not result in injury.... The resulting injury is a consequence of this unplanned event and does not in itself constitute the accident - it follows afterward."

The word "accident," as commonly used, refers to the occurrence of some injury or damage to a person or thing resulting from an unforeseen event. For such an injury or damage to be termed an accident, it partly depends on the personal bias of the reporter in his assessment. This assessment of an injury is based on its severity according to degree, such as, the cost in terms of loss of time, loss of money or in terms of pain. All such variables can introduce complications in the definition of an accident.

In this study the definition which has been used is as follows: an accident is an injury received by a child which resulted from an unforeseen event such as a fall, burn, poisoning, cut or motor-vehicle, and which required the attention of a doctor. Arbitrarily excluded were all injuries inflicted by other persons, those which resulted in death or were secondary to an organic disease or specific disability.

Identified Child and Family in Current Study

It was found by Read et al.¹ that a number of victims of pedestrian traffic accidents belonged to families in which there were a number of other types of accidents reported. Each child who was one of these victims of pedestrian traffic accidents has been called the identifying child, in

¹ Read, J.H. et al., op. cit., p. 11.
that the child has identified the families who have provided the research population.

The accident-child was any child belonging to the identified families who was under the age of 18 on December 31, 1964, and who was the victim of any type of accident between 1958 and December 31, 1964.

Those persons considered to be members of the families were all children who were members of the household by lineal descent or by association, such as relatives, foster children or boarders, and all adult members of the family who were over the age of 18 on December 31, 1964, who were resident in the house and ate meals together with the other members.

C. Method

Steps following the selection of the families, based on the aforementioned definitions were: to locate and interview the families; to collect data based on an Interview Survey Guide; to assess the findings in light of the established hypothesis, to discuss implications of the findings relevant to accident prevention and to social work practice, and to suggest leads to further studies.

Setting

The Child Health Programme, Departments of Preventive Medicine and Pediatrics, Faculty of Medicine, The University of British Columbia, provides a service as a model programme to other clinics for well child care, and facilities for research and teaching in growth and development of children to other disciplines in the University.

The files of the 1960 study from which the writers selected their population were retained in the offices of the Child Health Programme.
Selection of Population

These files were examined to select the families who had accident-repeater children. Sixty-one such families met the established criteria of (1) having a child, under the age of 18 years on December 31, 1964, and who had been involved in a child pedestrian traffic accident in 1960, and (2) having reported in 1960 two or more accidents to any one or all of their children in the lifetime of the family.

Location of Families

It was possible to confirm or locate an alternate address for 43 of the 61 identified families. This was done by a search through the Vancouver City Directory and the Vancouver Telephone Directory. To locate the remaining 18 families, the cooperation of the Family Allowance Division, Victoria, B.C., was sought. As addresses of the families known to that agency are confidential and, therefore, cannot be released, a list of the unlocated families with pertinent known statistical information was sent to the Family Allowance Division, Victoria, B.C., with a covering letter (Appendix C).

It was requested that, if addresses were known to that agency, they forward to the families an Explanatory Letter (Appendix D), together with a stamped return addressed postcard. In addition there was a postscript to the letter (Appendix E) in which the family was requested to enter their new address and telephone number on the card and return it by mail.

From the list of the 18 families sent to the Family Allowance Division, there were four who returned the postcards, one only giving an address within the Greater Vancouver Area, the other three being at too
great a distance for interviews to be feasible.

The next step was to send Explanatory Letters (Appendix D) to the 44 located families, describing briefly the purpose of the current study and requesting their repeated cooperation. Follow-up telephone calls were made to arrange interviews at times convenient to the interviewee and interviewer.

**Interview**

Of the 44 located families, four refused to participate, leaving 40 for the study. Of these, 36 families were interviewed in person and four were interviewed by telephone.

An Interview Survey Guide was drawn up as an aid to elicit the information needed in order to test the validity of the hypothesis (Appendix F).

**Data Collected**

After completion of interviews, the material was collated and is presented in the following chapter. The characteristics derived from the results of the interviews, of the accident-children, family structure, stress-producing events, accidents, are described.

A family profile and comparison tables relating accidents to other factors within the specified time period were also drawn up and are elaborated upon in the next chapter. Consideration was also given to the possibility of secondary findings resulting from the study, which might be a corollary of the primary focus.

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Various factors related to interviewing techniques will now be discussed, consideration being given to the fact that there were four persons conducting interviews.

**General Considerations of the Method**

The writers gave thought to the matter of testing the Interview Survey Guide prior to initiating the interview with the identified families. It was decided that partly for lack of time and partly that all interviews would be highly individualized, insufficient information would be gained to warrant taking the time required. However, there was an awareness that, with four interviewers, much variation in technique would be present. The one common feature between interviewers was that each was to use techniques with which she, as an individual, felt most competent in respect to the particular family.

Various skills were called for in order to obtain comparable information from different people with different needs and wants. Interviewing skills required the adaptation of techniques to each person. Flexibility in interviewing was encouraged. Although the Interview Survey Guide was followed, there was little structuring of the interview other than that of focus. Attitudes and feelings about the type of information sought in this descriptive study were not to be elicited, unless failure to express them would lessen the ability of the interviewee to recall the information. Feelings of anxiety about the purpose of the interview were allayed by clear statement of the purpose of the study by the interviewer. A statement of auspices and presentation of credentials, as well as introductory and explanatory letters by mail were useful means of preparing the interviewee.
The research interview has been discussed by Fellin as being in distinct contrast to the casework interview. It is a "face-to-face verbal interchange in which one person, the interviewer, attempts to elicit information or expression of opinion or belief from another person or persons."\(^1\) The method of conducting an interview is to a considerable extent determined by the purpose of that interview, whether primarily for information or to give help, although most involve a combination of both.\(^2\)

When the aim is to obtain information such as in a research type of interview, in answering questions from a survey guide, the establishment of rapport is still important. Both an understanding of the confidentiality of the information and some understanding of the purpose of the interview were found to increase interest and willingness of the interviewee to participate in the study. An additional aid was an awareness that, as opposed to the treatment interview where the aim is to help the interviewee, the aim of this research project is to the well-being and safety of children.

As in any type of interview it is imperative that the interviewer understand the purpose of the interview, particularly in this situation, where four interviewers were involved. Many of the answers required were those making relationships between events in which the person's memory and ability to recall was tested. Lines of accurate and full recall were largely influenced by the individual's social organization, with its ac-

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cepted scale of values. Bartlett speaks of social suggestion, which is, in essence, the provision of that setting of interest, excitement and emotion which favors the development of specific images, and, secondly, by providing a persistent framework of institutions and customs which act as a schematic basis for constructive memory. Therefore, the interviewer, with this construct in mind, should adapt his techniques to some extent to the social background of the interviewee. For example, an immigrant to the country with limited facility with the language can be expected to have limited recall around areas which a native born Canadian would have good recall. Social customs and value structure influence recall, such as dates related to schooling. A person setting little store on education and its institutions is likely to show a different recall to a family who places a high value on education. In this type of interview, where relationships between events are of the essence, significant periods in their lives can have greater or lesser value for recall. A family that is concerned with health will find it easier to recall dates relative to health, in preference to a school starting date. A family with an interest in socio-economic status may preferentially recall dates relative to father's raise or lay-off.

In our study, the order in which questions were asked was flexible in that relationships between events was being sought and therefore one event was used as a starting point to enable recall of other events.

2 Ibid., p. 368.
It was acknowledged that the attitude of the interviewer could greatly influence the attitude of the interviewee. If a perfunctory approach is taken with little interest in the question or purpose, a similar response and effort to recall past events may be had from the interviewee.

The content of the Interview Survey Guide itself, though structured for the most part, allowed for some flexibility in content in that significant serendipitous material and facts which the interviewee might consider relevant were considered. Allowance was made for "further comments and observations" - those which were considered to be worthy of note.

Relationship between two events does not necessarily imply causation. What is sought in this study is a condition under which certain relationships prevail. The purpose of all diagnostic or descriptive studies is to test an hypothesis. Insofar as an hypothesis is proven, certain events may be predicted, thus bringing the event more under the control of man and thus preventable. It is possible that an unknown intervening variable may exist between the dependent variable (accident) and the independent variable (stress-producing event).

It is essential when a sample or a total population is selected for study, such as in our study, that a maximum number of that population be located. In this situation, for example, one might ask what bias would be introduced by the exclusion of unavailable families; what are the characteristics of the unavailable families; and what skew would be introduced to the findings? If the unavailable and unlocated families consist pre-

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ponderantly of broken homes and the more transient members of the population, it is possible that our study is weighted in favor of more stable families.

However, we should emphasize that a relationship in time between the occurrence of accidents and stress-producing events is under study. This is not a comparison of families, of accidents, or of stress events. Making an assumption that stress and all types of accidents are universally distributed, it would be valid to exclude the unavailable families without introducing a bias into the results. On this basis the value in using multi-accident families is only that more accidents per interview are found, thus allowing a greater chance for exploration of the hypothesis.

In the next chapter we will examine material obtained in the interviews.
CHAPTER 3. FINDINGS

This chapter analyzes the data collected on the 40 families under study, in which there were a total of 127 accidents. Fifty-three (42%) of these accidents were identified as having some relationship in time between a stressful event and an accident. However, there were only 19 (15%) of the total that occurred within the 30 day time period as set down by the original hypothesis. This was hardly significant to validate the hypothesis. While the occurrence of a stressful situation followed shortly by an accident did not show up in the available data, chronic stressful situations, such as persistent illness or disablement to a parent or family member (e.g. sibling born a paraplegic or mentally retarded) did produce stresses in the life of the children. As this was considered to be an important finding, the stress data were collated according to acute and chronic stresses.

For the purpose of the study, acute stress was defined as those stressful events that have a definite time relation of 30 days to the occurrence of accidents. Chronic stress was defined as those prolonged stressful situations that were related to a series of accidents over the six year period.

General Characteristics of Accident Children

Before analyzing the stress factors the general characteristics of the accident-children and their families will be determined.
Accident-children: Of the 144 children in the 40 families, the population of accident-children under the age of 18 on December 31, 1964 was 63. Of these, 40 were boys and 23 were girls. The girl to boy ratio was 1:1.6. Their ages ranged from 5 to 18 years. The ages for boys at which time the accident occurred fell between 8 and 14 years, whereas the age for girls was between 12 and 17. The accident range was from one to ten, with an average of two accidents per child. The greatest concentration was one to three accidents. Of note was the fact that the greater percentage of accidents occurred during recreation outside the home, in the form of falls, impacts or traffic accidents.

Family Profile

The average size of a Canadian family is 3.5 children, whereas in our study it was 3.7. In other words, we found that 50% (20 families) had an average of 4.8 children, and the remaining 50% (20 families) were below the average with 2.4 children.

Fifty-five percent (22 families) had not changed residence within the six year period; 27.5% (11) had one move, and the remaining 17.5% (7) had more than one. Therefore, change of residence (average move was only 0.7 times during the six year period) did not appear to be one of the stressful factors. The one exception was a family that moved from one province to another in which several accidents occurred to the children both before and after the move.

Analysis of the marital status of the parents showed that 92.5%

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(37 families) of the parents were living together; divorce, separation and remarriage had occurred in the remaining 7.5% (3 families).

In over half of the families studied, the fathers were either professionals, businessmen, or skilled labourers, the rest being made up of unskilled labourers. Two fathers of the latter group were unemployed at the time of the interview and one had died previously.

The incomes were predominantly over $3,000 per annum. However, where the father experienced frequent job failure, it constituted a stressful situation in the family. Such a finding was confirmed in a study undertaken by Reuben Hill.¹

Fifty percent of the mothers were engaged in work outside the home, while only in a few cases did they take up full-time employment; in most instances their work, such as house-cleaning, was casual and irregular in nature.

Two other findings in our study were, the father had had illness of one kind or another more often than the rest of the family. The average ages of the husband and wife were 40.7 and 41 years respectively.

In reviewing the above findings, the family profile was seen as one of stability. That is, a profile of an "average sized family" where there was limited change of residence; moderate income; the father was steadily employed in a skilled occupation and there was limited family breakdown.

Such stability in families of accident-repeaters was not borne out by the earlier study by Read et al.² They found a much higher percentage of fathers employed as unskilled workers; more families had a lower yearly income.

¹ Hill, R., op. cit., pp. 139-150.
income; more fathers were out of the home following separation or divorce with mothers assuming the major responsibility for child-rearing; and there were more relatives living in the home. However, they too found that mothers more often worked outside the home.

**Stress Factors and Accidents**

The following tables show the acute and chronic stressful events identified in those families where there was a relationship in time between a stressful event and an accident. The age and sex of each accident-child and the types of accidents were also tabulated.

Table 1 reveals that there were far less accidents (15 out of 40) that had any connection in time between an accident and a stress-producing event.

Table 2 shows that a predominant number of accidents (38 out of 45) occurred during the period in which identifiable chronic stresses were present in the families. Two of these families had additional precipitating stresses. In one family, the accident occurred on the day when the house underwent remodelling. During this time, the mother was suffering from a prolonged illness requiring frequent hospitalization plus the fact that the accident-child did not like school. He developed stomach pain which was suspected to be symptomatic of a school phobia. In another family, accidents occurred on the day of a sibling's birthday and also when the school term began. Concurrently, the mother often changed jobs. The whole family attended mental health clinic and the eldest child in the family assumed a good deal of home responsibility while the mother was employed as the breadwinner.

A comparison of the following two tables points up that an accum-
### Table 1. Acute Stresses and Accidents

<table>
<thead>
<tr>
<th>Acute Stress</th>
<th>Accident-Child Sex &amp; Age</th>
<th>Types of Accidents</th>
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<td><strong>Types of Stress</strong></td>
<td><strong>Fall</strong></td>
<td><strong>Motor</strong></td>
<td><strong>Impact</strong></td>
<td><strong>Cut</strong></td>
<td><strong>Burn</strong></td>
<td><strong>Others</strong></td>
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<td>No. 1 Illness of sibling</td>
<td>M(8)</td>
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<td>Birth of sibling</td>
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<td>2 Relative visiting</td>
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<td>3 Illness of sibling</td>
<td>M(14)</td>
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<td>x</td>
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<td>F(17)</td>
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<tr>
<td>4 Mother started working</td>
<td>M(5)</td>
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<td>5 Mother started working</td>
<td>M(12)</td>
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<td>M(15)</td>
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<tr>
<td>6 Mother started working</td>
<td>F(16)</td>
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<td>x</td>
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<tr>
<td>7 House-moving</td>
<td>M(12)</td>
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<td>x</td>
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<td>M(10)</td>
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<td>x/</td>
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<tr>
<td>8 Neighbourhood fire</td>
<td>M(7)</td>
<td>x</td>
<td>x</td>
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<td>School starting</td>
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<td>9 Sports day</td>
<td>M(10)</td>
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<tr>
<td><strong>Totals</strong></td>
<td><strong>M 12</strong></td>
<td><strong>F 5</strong></td>
<td><strong>17</strong></td>
<td><strong>11</strong></td>
<td><strong>9</strong></td>
<td><strong>2</strong></td>
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</table>

x Accidents connected with stresses - 15
/
Accidents not connected with stresses - 25
Table 2. Chronic Stresses and Accidents

<table>
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<tr>
<th>Chronic Stress</th>
<th>Accident-Types of Accidents</th>
<th>Fall</th>
<th>Motor</th>
<th>Impact</th>
<th>Cut</th>
<th>Burn</th>
<th>Others</th>
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<tr>
<td>Fam-</td>
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<td>Types of</td>
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<tr>
<td>ilies</td>
<td></td>
<td>Stress</td>
<td>Sex &amp;</td>
<td>Age</td>
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<tr>
<td>No. 1</td>
<td>Mother's illness</td>
<td>F(14)</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>Accelerated class</td>
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<tr>
<td></td>
<td>Child assumed family duties</td>
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<td>2</td>
<td>Retarded sibling</td>
<td>F(17)</td>
<td>xx</td>
<td>x</td>
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<tr>
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<td>M(16)</td>
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<td></td>
<td>M(15)</td>
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<td>F(12)</td>
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<td></td>
<td>F(11)</td>
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<td>3</td>
<td>Illness of mother</td>
<td>M(14)</td>
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<tr>
<td></td>
<td>M(12)</td>
<td>x</td>
<td>x/</td>
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</tr>
<tr>
<td>4</td>
<td>House remodeling*</td>
<td>M(12)</td>
<td>x</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Frequent illness in family</td>
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<tr>
<td></td>
<td>School phobia</td>
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<tr>
<td></td>
<td>Mother's illness</td>
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</tr>
<tr>
<td>5</td>
<td>School starting*</td>
<td>M(14)</td>
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<tr>
<td></td>
<td>Sibling's birthday*</td>
<td>M(11)</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Mother's job change</td>
<td>M(5)</td>
<td>x</td>
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<tr>
<td></td>
<td>Family attended M.H.C.</td>
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<tr>
<td>6</td>
<td>Father's job failure</td>
<td>M(12)</td>
<td>x</td>
<td></td>
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<tr>
<td></td>
<td>Parents' quarrel with grandparents</td>
<td>M(8)</td>
<td>x</td>
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- continued
### Table 2, cont'd.

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<thead>
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<th>Chronic Stress</th>
<th>Accident-Child</th>
<th>Types of Accidents</th>
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<td>Sex &amp; Age</td>
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<td><strong>Families</strong></td>
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<td>No. 7</td>
<td>Father's work injuries</td>
<td>M(10)</td>
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<td></td>
<td>Sister para-plegic</td>
<td>M(7)</td>
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<td></td>
<td>Sibling epileptic</td>
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<tr>
<td>No. 8</td>
<td>Sibling's quarrels with parents and subsequent marriage</td>
<td>M(14)</td>
</tr>
<tr>
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<td>Mother's illness</td>
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<tr>
<td><strong>Totals</strong></td>
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</table>

x Accidents connected with stresses - 38
/ Accidents not connected with stresses - 7
* Precipitating stresses

ulation of chronic stresses produced a higher rate of accidents. The findings revealed that mothers starting to work, and any prolonged illness or disablement in the family were significant factors causing either acute or chronic stress at home, which appeared to result in the occurrence of childhood accidents.

Further salient factors of the relationship between accidents and stresses will be examined by comparing and contrasting the patterns of two groups of families, one with only one identifying accident and the other
with multiple accidents.

Within the six year period studied, Group I with nine families had only the identifying traffic accidents, whereas Group II with eight families had five or more accidents, the highest being 18 in one family. The size of family was larger in the second group in that half of them had five or more children in each family. The socio-economic status in both groups ranged from below $3,000 to above $6,000 per annum. Both groups had working mothers. The most significant difference between the two groups of families was that in Group I, in all except the two interviewed by telephone, the interviewers observed the family to be congenial, relaxed, and there was good family cohesion and interaction.

In those eight families with multiple accidents, the stresses present were either chronic or acute. Evident stresses were: a retarded child; a child with a heart ailment; a father with frequent job failure; quarrels between parents and grandparents; all children were "slow learners;" the whole family attending mental health clinic with children being nervous and acting out; children were left alone by parents and without proper supervision; and the mother lacking understanding of the children's behavior.

Further exploration of the eight families with multiple accidents showed that five of them had accidents centering on one child in the family. Moreover, all except one family had had identifiable or accumulation of chronic stresses, either with or without precipitating stress-producing events to trigger off accidents. To cite two examples: The first, a 15 year old boy who had had ten accidents during the five-year period from 1959-64. The mother described him as being "docile, awkward, with poor co-
ordination. He is now 6'4" and is still growing." There was a total of
eighteen accidents in this family, but the 15 year old boy had ten of
them. The rest were distributed among his four siblings. The father was
a skilled labourer with over $6,000 per year as income. Mother was a
housewife. There had been no moves or illness in the family. However,
the youngest child, aged 8, was found to be mentally retarded at 18
months. The parents were told that he would be a "mere vegetable" and
were advised to place him in an institution, but this was rejected by the
parents. The children in this family were all very active and athletic,
participating in community clubs, and spent most of their time out of the
house. The retarded child was the only one without an accident.

The other case, a boy of 8 years had had six accidents. He was
the only one in the family of five children with accidents which occurred
between 1959-63. Since the birth of his youngest sibling in April, 1963,
he had not suffered an accident. The boy was said to be very energetic
and received little supervision from the mother, especially after his 11
year old sister was found to have heart trouble. She was an active and
high-strung girl requiring a lot of mother's attention. The father, a
skilled craftsman, earned an average income. The housekeeping standard
was below par. The mother expressed the opinion that she was harassed
with a large family with a sick member and active children with whom to
cope.

The above two instances demonstrated clearly the relationship be­
tween accidents and stresses. It was further noted that in these two
cases the illness of one child in the family caused chronic stresses,
while another child appeared to take on most of the accidents in the fam­
ily.
General Comments

The weakness of the retrospective study, a skewing of population and limited time span set down in the study will be elaborated in the next chapter.

In general, the response to the interviews was good, 95% (38 cases) cooperated willingly, and 5% (2) were either indifferent or uncooperative. There was overt resistance in one case; however, the interviewer was able to secure the essential information after several written notes and visits (the family had no telephone in the house).

Critique of the Interview Survey Guide (Appendix F)

1. Interviewer's frame of reference: despite the fact that these field interviews were purely for the purpose of eliciting information, the interviewers, because of their social work training, tended to do more than conduct research interviews. The use of the professional skill to obtain information and help respondents to recall significant facts was evident.

2. Accuracy of responses: although efforts were made to adhere to objective stressful events, nonetheless, this was a difficult area to explore, as inevitably it involved attitudes and estimates which were found to lower the reliability of information obtained. The mainstay of this study depended a great deal on memory work spread over a long span of six years. This was very taxing on the memory of the interviewees, hence, its accuracy and complete recall was questionable, especially when the time set down was only 30 days. This presented a difficult task for both interviewers and interviewees.

3. The ambiguity in phrasing questions may have elicited different
answers. The following weaknesses were observed:

The section under Marital Status: the question regarding "Status of marriage of custodial parent, 1958, to another natural parent" raised some confusion. It would have been easier to state simply: marital status of parents in 1958.

The section under Socio-economic History of the Family: the terms "occupation" and "employment" also contributed to some misunderstanding because of the ambiguity.

The section under Changes in Economic Status: there could have been clarification of the use or non-use of the cost-of-living index, in order to determine the changes in economic status.

4. Some of the stated defects in the Interview Survey Guide could have been avoided by a pre-test of the questions posed. Those which did not draw forth consistent or definite responses could then have been revised. Pre-testing provides not only a test of clarity of questions and of corrections of interpretation given by the interviewee, but it also affords the possibility of discovering new aspects of the study not anticipated in the planning stage.

Conclusion

The findings of this study pointed up an extension of the original hypothesis which is that chronic stresses in the family are conducive to accidents in the children. Further implications of this finding will be dealt with in the next chapter.
CHAPTER 4. DISCUSSION OF FINDINGS AND SUMMARY

This final chapter will discuss the findings and their implications for childhood accident prevention and for social work practice.

A. Hypothesis Invalid and Reasons

The analysis of the data collected indicates that, in following the selected method, the writers failed to establish the validity of the hypothesis: "that a significant relationship exists in time, specifically 30 days, between the occurrence of stress-producing events within the family and accidents resulting in injury to one or more children of that family." In other words there was no conclusive evidence to say that one stressful event caused sufficient disorganization to lower controls over the impulses of children thereby causing accidents.

There were a number of factors which, in our opinion, contributed to the negative result. Those which appear to be of major importance are discussed below.

The writers are aware of the limitations that the small number of cases placed upon the conclusions. The unavailability of the total population resulting in a small, stable group of 40 families to be interviewed, proved to be a limitation. There was a skewing of population in the selection of the sample, with only the relatively "stable" families being located and included. It will be recalled that there is evidence in the literature that the parents in "stable" families have stronger ego-functioning. Therefore, the children of such "stable" families might benefit from
the example of their parents and, if endowed with average intelligence, would have a potential for adequate ego functioning. When stresses threaten these "stable" families, the proper use of defense mechanisms by the children would enable them to re-establish dynamic equilibrium. It is speculated that accidents occur when defense mechanisms fail to help children regain their dynamic equilibrium. As mentioned in Chapter 1, when the family, an open-ended system, experiences stress, this is transmitted throughout, to the various members. Those with the weak ego structures are unable to integrate the stress in order to maintain equilibrium, and so react to it through behavior which may involve the occurrence of accidents.

While 21 families of the total population were unavailable for interviews, there was information on file from the Read et al. study which indicated considerable instability in these families. They frequently changed residence; fathers were engaged in transient occupations; and some families had complications such as divorce, separation and remarriage. In order to obtain a representative sample of families of accident-repeater children for any follow-up study these latter "unstable" types of families would need to be included. In "unstable" families there might be more temporary stresses of the individual members such as worry, distraction and ill health. Their effect on factors such as fatigue and vigilance becomes meaningful, and may result in children being susceptible to accidents. Stress in the family can have great reverberations in all of the other areas of a person's life. As Miller has said, "individuals go through temporary states of instability and emotional stress which could make them

1 Read, J.H. et al., op. cit., pp. 1-127.
more susceptible to accidents.\textsuperscript{1} "Accidents have significance beyond themselves. They are always symptomatic of disorder in a particular dynamic system. The disorder may reside in the habits of an individual or the customs of a community or the breakdown of a machine."\textsuperscript{2}

The weakness of a retrospective study showed up quite markedly in this project. A span of six years, with the time period between stressful events and accidents set down to be only 30 days, resulted in great difficulty of recall by the respondents. This points up the fact that any future childhood accident research studies should be prospective ones. Accepting this fact, one would conclude that prospective studies would be a more accurate way to obtain data on such a significant social problem as childhood accidents.

The various time periods as stated in the research design were found to be too rigid. It was impossible to obtain a complete accident pattern for children with a cut-off date in 1958 covering a long span of six years. The same held true for the recording of stress-producing events (within a 30-day time period) going back 25 months from the date of the 1960 identifying pedestrian traffic accident, and coming forward until the end of 1964. The time period of 30 days for stress-producing events, arbitrarily set, was too narrow, and going back over six years this 30-day period was too short, thus creating difficulty to recall (that is, relating stresses and accidents).

The gathering of information about stress-producing events from parents only was recognized as a limitation. For example, the school per-

\textsuperscript{1} Miller, J.G., \textit{op. cit.}, pp. 433-436.
\textsuperscript{2} Maclver, J., \textit{op. cit.}, p. 71.
formance of the accident children was not included on the questionnaire. The main reason for not including this item and others involving environment was the limitation of time. The writers, therefore, believe that in any future studies the school performance should be considered in order to obtain the objective viewpoint of the teacher in the total evaluation of the impact of stress upon the accident children. For example, there might be considerable stress in the school situation such as acceleration or retardation and various other possible stresses. It also would be valuable to have knowledge of the accident child's personality, his relationships with peers and adults, and his attitudes towards safety.

B. Discussion of Findings

Table 1 indicates that only a small number of acute stresses were related in time to accidents. Recognizing the interaction between the child and his family situation, and in order to identify the specific stress-producing events the concepts from systems theory, ego functioning, and role theory were used (Appendix A). In so doing, nine stressful events were identified, as occurring within the 30-day period. To illustrate our application of the theories used, these nine acute stresses are examined according to the role theory.

"Illness of sibling" means role changes and role impairment for the ill family member and might involve role realignment for other family members. "Birth of sibling" involves addition of a role to the family role network, with loss of role to a sibling, and consequent adaptations throughout. A "relative visiting" represents an additional role in the household. "Mother starts to work" represents creation of a new role, with reciprocal realignment of roles of other family members. When a family changes its
residence all family members take on new role networks and they have adjustments to make to a new environment. This has been found to be a time when children are more vulnerable to accidents. A "neighbourhood fire" creates an environmental change, and might be quite stressful to a sensitive child, therefore hampering the function of his ego. "School starting" is both a role change and a new role for the child. "School Events (Sports Day)" means a temporary role change or a change in status for the child for that particular day. "Sibling's birthday" is a demotion in role or temporary change in status in that the accident-child is not important for that day. Many earlier studies have suggested that such familial events might be related to the occurrence of injuries to children.

While numbers were not considered significant, we were impressed with the child's accident being related in time to when a "mother started to work." It is known that an added role for mother could alter the whole family constellation. There could also be unavailability of role or role abandonment resulting in lack of supervision for the children leading to accidents. If the mother started to work because the father was unemployed this reversal of roles could become stress-producing for the children.

The above discussion clearly indicates that the hypothesis is invalid. However, after collating the data the writers found that there were chronic stress situations or the accumulation of stress-producing events in the families which appeared to be related in some way to accidents of children. This observation might be considered as an extension of the hypothesis and may have sufficient significance to warrant a follow-up study to be outlined at the conclusion of this chapter.

Every time there is a role shift in the family, there is some stress on the members. The family member with a weak ego may be unable to adapt to
the stress, and if he cannot re-establish equilibrium and more stresses accumulate, there may be disintegration of his ego functioning leading to accident susceptibility.

The writers were impressed with the many chronic stresses upon eight families who had multiple accidents to children (that is, families with five or more accidents). All these families had some chronic stresses (Table 2). For purposes of treatment, the social worker would analyze the stress-producing events and chronic stress factors in these families. Wherever possible, family treatment would involve helping all family members together to relieve their anxieties through appropriate social work techniques and help them gain an awareness of and positive attitudes towards safety and accident prevention. Role support in times of stress would be strongly advocated.

While not numerically significant, there were three of the eight families in which there was a disabled child causing chronic stress which appeared to lead to another child in the family having multiple accidents. Review of the literature (Chapter 1) supports the theory that there is a relationship between unmet emotional needs and accidents, and that accident-children have been found to be immature and emotionally unstable. The mother with a disabled child may suffer role-impairment, and be unable to meet the emotional needs of her other children.

This suggests that the theory of the multiple accident child as the "scapegoat" might also be applied in these three cases, in that the multiple accident child has the role of a "problem carrier" (having accidents). It is analogous to ... "from the point of view of the family, the primary function of scapegoating is that it permits the family to maintain
its solidarity. The scapegoating mechanism is immediately functional for the family as a group but dysfunctional for the emotional health of the child and for his adjustment outside the family of orientation. The family scapegoat will feel strong family pressure which creates considerable conflicts for him. Once he has been selected there is a circular reaction which tends to perpetuate his role assignment. The child may take on many of the characteristics which parents dislike in themselves and each other, and he becomes a symbolically appropriate object on which to focus their own anxieties. The parents thus project their own difficulties and problems onto the child and in dealing with them as the child's problems (accidents) rather than their own. In addition, there is a possibility of secondary gratification for the accident child in the form of special attention and exemption from certain responsibilities as compensation for his acceptance of the scapegoat role. There is also a possibility of the child's identification with an accident-repeater parent.

The above exemplifies the prolonged stress found in the families under study which, in our opinion, warrants an extension of the hypothesis for study.

C. The Role of Social Work in Accident Prevention

Social Assessment and Treatment of Family Relationships

Since social workers have a specialized knowledge of the dynamic interactions within the nuclear family (which may result in illness or accident), they can offer their skills in treatment services to families

undergoing chronic stress, such as individual casework service and family group interviewing. The latter method has been developed by various psychiatrists and social workers from 1953 onward. It is being used by social workers in a variety of ways. With some there is flexibility, and treatment may, at one point in the case, include all members of the family, and at another, various members. Whereas, with others all members of the nuclear family must be involved throughout the total process. Some social workers have found the approach defined by Bell as the method most appropriate.

"Family group therapy is an effort to effect behavioural and attitudinal changes within a total family through a series of conferences attended by the parents, the children 9 years of age and older, and the therapist... the family is the unit to be treated... the problem for which the family is accepted for treatment is to be thought of as a problem of the family, not as a problem of the child.... Functionally, then the symptom is thought of as a product of a disruption in family interaction, most usually a breakdown in intra-family communication, not as the product of intra-psychic conflicts."

There are many ways of working with a family. Therefore, the rationale for the method selected must be based on sound social assessment which includes the use of the three aforementioned theories of systems, role and ego-functioning. Some of these factors are mentioned in the elaboration on chronic stresses noted in the families under study.

**Community Participation**

In addition to direct service to families in accident prevention, social workers have a responsibility - to identify the social needs of such

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families as related to stressful events and accidents; to make known the
gaps in service and to give leadership in the development of preventive
community services. Examples of such community participation follow.

The "Working Mother" was found to be a particularly stressful
event. Therefore, in order to help young children who are deprived of
their mothers who are working during the daytime, the profession of social
work has a responsibility to further the creation of more agencies such as
day care centers. There would be provided not only day care for the pre­
school child, but also after-school programs for the school age child.
Such responsibility is based on the conviction that good day care has
value for children of all ages and their families. Programs that can prov­
ide a child with a basis for wider learning and expression can lessen stress
and help to increase ego functioning.

Therefore, social workers should take leadership in encouraging
more day care centers (with improved standards in programming and teaching)
for young children of working mothers. Leadership should also encourage
existing community agencies to provide necessary after-school programs, or
take steps to organize other alternative after-school programs, such as
using the present neighbourhood facilities for the school age child. In
the survey of married women workers by the Canadian Federal Department of
Labour1 many working mothers of small school-age children clearly indicated
they welcomed some place where their children could go after school to
spend the time until the mother's return from work.

1 Ottawa, Dept. of Labour, "Married Women Workers: The Home Situation,"
Canadian Society, eds. Bernard P. Blishen, Frank E. Jones, Kaspar D. Naegle
Family Life Education

Social workers have a responsibility to encourage and organize classes in family life education. In these classes various professionals such as a doctor, minister, social worker and banker could be given an opportunity to instruct parents and future parents regarding the many facets of family living, including positive parental attitudes with firm, kind discipline of children, and in particular, the role of parents in safety education for their children. Parents should be made aware of the growth and development and limitations of children at different ages. These classes might be held, for instance, in community centers, neighbourhood houses, or at the local Y.W.C.A. or Y.M.C.A.

The professional social worker in these classes would emphasize education for wholesome social functioning by the individual within the dynamic nuclear family group. For example, role has been defined "as a goal-directed pattern or sequence of acts tailored by the cultural process for the transactions a person may carry out in a social group or situation." The range of family roles such as those of husband and wife, father and mother, son and daughter, brother and sister could be explained and discussed. Also included in the discussions could be the inevitable stresses in a family and the necessary realignment of roles (for example, if mother starts to work), role performance, and role expectations in order to maintain family equilibrium. Role support during stress is very influential to social functioning. Its utilization at the strategic time to bolster an individual's stress tolerance with the hope of limiting his susceptibility

to accidents is most important. Accidents will not necessarily be the symptom for all families, but it would be important to acquaint families with resources for treatment when necessary. The importance of parental attitudes and guidance in child development should be included, pointing out in particular the parents' responsibility in the prevention of accidents to children.

**Continuing Public Education for Accident Prevention**

A continuing educational program for families regarding accident prevention for children is a necessity. The mass media such as radio, television and the newspapers have already been used with some success. The professions can play an important role in safety education. Take, for example, the Well Child Care Clinics where physicians and child health personnel should take every opportunity to inform and counsel parents regarding accident prevention at each stage of development. Social workers, in their contacts with individuals and groups should take an equally responsible role in safety education.

Safety education being taught in kindergarten and schools should be given high priority. Major emphasis on programs appropriate, not only to the child at his particular stage of development, but also to parents in P.T.A. and other parent groups, should provide a medium for teaching parent safety consciousness.

The British Columbia Safety Council publishes educational literature on accident prevention. All across Canada May 2nd, 1965 has been declared by the Federal Government as "Child-Safety Day." It is hoped that this publicity may result in an aroused community so that we shall get community action towards the prevention of childhood accidents.
D. Topic for Further Study

As a result of the observations and findings the writers have found that there are many areas which could be explored in future studies. One such study, prospective in nature, might be set up with the following hypothesis: in a family where chronic family stress develops some child in the family may become the bearer of that stress by having accidents.

This might be developed by choosing a sample of families in the City of Vancouver who have one or more disabled children living at home. They could be interviewed on a regular basis for a time period of five years from a starting date. Accidents to all children would be recorded with relevant details. Family histories could be obtained, as well as all pertinent environmental data.

E. Conclusion

"Accidental injury is the leading cause of death during childhood as well as a most frequent cause of disability."1

There is much study and research to be done in the field of childhood accident prevention to which social workers have a contribution to make. They can use their knowledge to assess the stress-producing events upon families. The skills in casework, groupwork and community organization can be applied. Treatment on a preventive level is provided by reaching out to promote a better social and emotional climate in which the child and his family may function. Direct service assists families when stress-producing events occur.

Social workers can give leadership in family life education and the

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1 Meyer, R.J. et al., op. cit., p. 95.
creation of necessary social services. Social workers have a contribution to make in the inter-disciplinary "team" approach to prevention of accidents to children.
APPENDIX A

A Classification of Stress-Producing Events: Based on a systems approach to social and personal factors embodied in the concepts of role and ego functioning.

I. Loss of Member:

- Death of: child
  spouse
  parent
  member of household
  family pet
  member of extended family
  neighbour
  close family friend

- Hospitalization of:
  child
  parent
  member of household

- Separation of parent from family because of:
  armed services
  occupational travel (part-time absence)
  desertion

II. Addition to the Household of:

  child
  new parent
  extended family member
  other

III. Role Changes:

- Change in: socio-economic status
  promotions
  demotions
  loss of employment

- Change by: illness of family member
  hospitalization for medical, mental or additional reasons
  imprisonment of family member
  involvement with police and court
  illegitimacy or unwanted pregnancy
  runaway
  other
APPENDIX A, cont'd.

IV. Environmental Changes:
   family dwelling place
   child's activities, school, playmates
   fires, floods, hurricanes

V. Fights between Parents

APPENDIX B

A Conceptual Framework of Possible Causal Factors in Accident Occurrence.

A. Background of the child
1. Heredity
2. Physical factors
   a. Body growth, structure, and function
   b. Age
   c. Sex
3. Mental factors
4. Emotional factors
   a. Attitudes and values
   b. Personal adjustment
   c. Stress factors
5. Personality traits
6. Habits and activities
7. Activity on incidence of accident
8. Social factors
   a. Relationships with peers
   b. Supervisor
9. General health status and accident history

B. The family background (both parents)
1. Race
2. Religion
3. Ethnicity and cultural background
4. Socio-economic status
5. Family composition and age structure
6. Marital and family relationships
7. Child-rearing practices
8. Attitudes of family members
9. Length of residence in area
10. Geographical mobility
11. Living conditions
    a. Crowding
    b. Community factors
12. Health status and accident history

C. The environmental background
1. Physical environment
   a. Geographical location
   b. Topography
   c. Rural-urban areas
2. Technological environment
   a. Housing
      i. Design and construction
      ii. Maintenance
      iii. Appliances and equipment
      iv. Furnishings
   b. Area outside the dwelling
C. The environmental background, cont'd.

3. Accident situation variables
   a. Location
   b. Agent of accident
   c. Conditions at time of accident
      i. Time
      ii. Weather and season. 

November 27, 1964.

Mr. W. R. Bone,
Regional Director,
Family Allowance Division,

Dear Mr. Bone:

The Department of Preventive Medicine and the School of Social Work at the University of British Columbia are jointly planning a research study on families of accident-repeater children in the Vancouver area. The sample of sixty-one families has been identified from a former epidemiological study into pedestrian traffic accidents involving Vancouver children undertaken by the U.B.C. Child Health Programme in 1960.

We are unable to locate the homes of eighteen of our "accident children" in the Vancouver Directory, and are enclosing a list giving 1960 information for each child. If your records indicate where and with whom these eighteen are presently living, we would be very grateful if you would forward our letters (copy of which is enclosed) in the stamped envelopes.

Thank you very much for your cooperation.

Yours truly,

J. R. Brummitt, M.D.,
Director

Encls.
In 1960 the Department of Preventive Medicine, UBC carried out a research study on traffic accidents involving child pedestrians up to the age of 15 years. The purpose of that study was to determine some of the causes of child pedestrian traffic accidents and to introduce preventive means to reduce this growing public health problem.

At that time you cooperated in the research study which was of great help in identifying a number of causative factors involved in such accidents. Now we wish to explore in greater detail further particular events within the families of those accident victims to discover whether any relation exists in time between them and other types of accidents which may have occurred before or since.

This new study will be done by the School of Social Work in cooperation with the Department of Preventive Medicine. It is planned that members of the research team will meet with members of the families concerned in order to complete a questionnaire which we hope will add to our knowledge of accident causation.

As before all information identifiable to particular families will be treated by the study group as confidential although the conclusions will be used to enlarge further public and research knowledge related to accident prevention.

We would be most grateful for your further cooperation in this current phase of the study, and a member of the study group will telephone you in this regard within ten days. At the same time, a mutually convenient time for a visit, within the next few months, with members of your family can be discussed.

Yours truly,

J. R. Brummitt, M.D.,
Director,
Child Health Programme.

(Miss) Muriel Cunliffe,
Professor,
School of Social Work.
P.S. The Family Allowance office in Victoria has kindly forwarded this letter to you. As we are still unaware of your present address, we would be most grateful if you would kindly fill in the enclosed post-card and mail it to us so that we may contact you again.
APPENDIX F

University of British Columbia - Child Health Programme
Case 

A STUDY OF FAMILIES OF ACCIDENT-REPEATER CHILDREN IN VANCOUVER

QUESTIONNAIRE
(Interview Survey Guide)

Date of Interview... Name of Social Worker...

Interviewee: [ ] Mother [ ] Mother & Father [ ] Father [ ] Other

Part I. Identifying Information:

a) Family name.................................

b) Identifying Child: (1) Name

(2) Address

(3) Sex [ ] Male [ ] Female

c) Date of pedestrian traffic accident (1960)

Part II. History of Family Structure

a) Father's name.............................. Date of birth

Father's address ........................................ Phone No.

b) Mother's name.............................. Date of birth

Mother's address .................................. Phone No.

c) Children:

<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Date of birth</th>
<th>In home</th>
<th>Left Home - date</th>
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<tbody>
<tr>
<td>#1</td>
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<td>#2</td>
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</table>

d) Other Household Members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Status in house</th>
<th>Relationship</th>
<th>Birthdate</th>
<th>Entered</th>
<th>Left</th>
</tr>
</thead>
</table>
APPENDIX F, cont'd. page two

Part III. Socio-economic History of Family

a) Father's Occupation

Any changes of occupation and/or employment 1958-1964:

<table>
<thead>
<tr>
<th>Date</th>
<th>Occupation</th>
<th>Date</th>
<th>Employment</th>
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b) Mother's Occupation

Any changes 1958 to 1964:

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<th>Date</th>
<th>Occupation</th>
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</table>

c) Economic Status of Family, taking into consideration total income from all sources between 1958 and 1964:

- Above average ($6000 + )
- Average ($3000 - $6000)
- Below average (under $3000)

d) Changes in Economic Status, 1958-1964:

- No change
- Upward
- Downward
- Fluctuating

Part IV. History of Marital Status

a) Status of marriage of custodial parent, 1958, to other natural parent:

b) Any changes between 1958 and 1964:

<table>
<thead>
<tr>
<th>Absence of one spouse - Reason:</th>
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<tbody>
<tr>
<td>Desertion</td>
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<tr>
<td>Separation</td>
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<tr>
<td>Divorce</td>
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<tr>
<td>Death</td>
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<tr>
<td>Remarriage</td>
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<tr>
<th>Day</th>
<th>Month</th>
<th>Year</th>
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**APPENDIX F, CONT'D**

**Part V. History of Family Mobility, 1958-1964**

a) Date of first accident: 

b) Dates of any subsequent move(s):

<table>
<thead>
<tr>
<th>Day</th>
<th>Month</th>
<th>Year</th>
<th>Address</th>
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**Part VI. History of Family Health, 1958-1964**

Note any significant physical and/or mental illness requiring hospitalization or causing disability to any of household members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Illness or Disability</th>
<th>Date</th>
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-78-
### Part VII. History of Accidents to Children in Household (under 18 years on December 31, 196* when medical attention required—from 1958-1964:

Enter name of child and date of accident in appropriate square:

<table>
<thead>
<tr>
<th>Location of Accident</th>
<th>Fall Accidents</th>
<th>Burns</th>
<th>Poison</th>
<th>Cuts</th>
<th>Impact</th>
<th>Motor Vehicle</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Home</td>
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<tr>
<td>(2) School</td>
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<td>(3) Recreation</td>
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<td>(4) Traffic</td>
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<td>(5) Other</td>
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### Part VIII. Further comments and observations:

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APPENDIX G

Bibliography

BOOKS


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American Association for Health, Physical Education and Research, Annual Safety Education Review, 1963, Washington, D.C.


**REPORTS**
